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China City & Industry Report: A Guide for U.S. Exporters

2017

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In 2015, China experienced its lowest economic growth rate in more than a quarter century with real GDP growth decelerating to 6.9 percent. China's newly approved 13th Five-Year Plan (2016-2020) calls for ambitious policy reforms in order to "comprehensively build a moderately prosperous society" by doubling 2010 GDP and per capita incomes by 2020.

With respect to trade, U.S. good exports to China in 2015 were $116.2 billion, down 6.1 percent from the previous year. U.S. exports of services to China were an estimated $42.5 billion in 2014 (the latest data available). Although significant market access barriers exist for foreign firms, U.S. foreign direct investment in China was $65.8 billion in 2014 (the latest data available), a 9.8 percent increase from 2013.

Despite this slower and managed growth, China remains an extremely attractive market for many U.S. companies. U.S. small and mid-sized enterprises (SMEs) in particular are major beneficiaries of China's economic growth and increasingly consumer-oriented society.

China's emerging markets in second, third and fourth tier business centers – from Harbin in the north to Kunming in the south, from Qingdao in the east to Urumqi in the west – are growing faster than the traditional Beijing, Shanghai, Guangzhou markets. Emerging markets account for over 50 percent of China's U.S. imports, and are where the major healthcare reforms, airport expansions, and myriad of other infrastructure projects provide superb opportunities for U.S. exporters.

An opaque regulatory environment, weak rule-of-law, and intellectual property rights violations continue to challenge U.S. business. So risks are not insignificant. But the potential rewards merit serious investigation to identify and cultivate opportunities while building a strategy to minimize those risks.

The 2017 China City and Industry Report looks closely at 19 of China's commercially important cities and 16 of its best prospect industries for U.S. exporters.

Take advantage of the opportunities that the knowledge and expertise this Report provides as you enter or expand your China business. And contact U.S. Commercial Service staff and other service providers listed in the Report for advice from seasoned trade experts. The opportunities are there -- we can help you benefit from them.

Sarah E. Kemp
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Chapter 1

Industry Reports

Chapter 1: Industry Report

Agricultural Equipment

Overview

With a total industrial output value of RMB 428.4 billion in 2015, China is the world's largest manufacturer of farming equipment and the biggest market for agricultural machinery. China's agricultural machinery products can be classed into 14 categories, covering 61 subcategories and more than 10,000 varieties, including land preparation, planting, harvesting, and livestock raising. The country has over 2,500 agricultural equipment manufacturers, mainly concentrated in Shandong, Henan, Jiangsu, Liaoning, and Zhejiang provinces, but due to the country's current lack of human capital and the funding and infrastructure necessary to develop sophisticated farming machines able to compete with foreign products, China still relies heavily on foreign imports for high-tech farming machinery. Until domestic companies are able to manufacture high-tech farming equipment to replace foreign products, there is plenty of opportunity for U.S. exporters.

The Chinese government has been investing heavily to support development of its agricultural market by granting subsidies for agricultural machinery procurement. From 2004 to 2014, the Central Government offered RMB 119.5 billion of subsidies to the purchase of over 16 million sets of agricultural machinery. China's goal of increasing production efficiency while protecting the environment will require improved farming techniques that countries with highly mechanized agriculture industries are able to provide.

China Domestic Production of Agricultural Equipment and Market Demand

China's domestic agricultural equipment industry is characterized by a large number of mostly unspecialized manufacturers producing low technology machinery. According to the China Agricultural Machinery Distribution Association (CAMDA), the top five domestic manufacturers accounted for less than 25 percent of the market. Major Chinese agricultural equipment companies include First Tractor, the YTO Group, and Changzhou Dongfeng Agricultural Equipment.

2014-2015 China's Major Agricultural Equipment Production

Product	Number of Enterprises Engaged	2014 (Units)	2015 (Units)
Large tractor	31	58,170	77,372
Mid-sized tractor	54	567,837	610,780
Compact/Small tractor	116	1,655,941	1,402,763
Harvesting machine	136	861,330	827,101
Machinery for feedstuffs	33	590,335	517,489

Source: China Agricultural Machinery Distribution Association

In 2014, the total power of China's agricultural machinery reached 1076 million kilowatts. Domestic agricultural machinery production and sales maintained strong growth. Annual industry sales totaled RMB 287 billion in 2014, an increase of 11.6 percent compared to 2013. Sales of small tractors reached 1.67 million units, while the annual sales of medium and large tractors, combine harvesters, and rice transplanters were 320,000 units, 150,000 units and 70,000 units, respectively.

While large, high powered tractors have greatly benefited from the Chinese government's subsidy policies, small tractors will continue to account for an increasing share of demand due to them being more affordable and practical for the average farming household; and driven by farmers' increasing incomes, the penetration rate of harvesting machinery in China's agricultural equipment market is set to increase in the coming years.

Trade Opportunities

Agricultural Machinery

Leading U.S. manufacturers AGCO Corporation and Deere & Company (John Deere) are the two major suppliers for China's agricultural machinery market. AGCO reported a 36 percent growth of net sales in 2014 and estimated an increase rate of over 30 percent in 2015. The agricultural machinery imported into China is primarily used in the country's vast rural areas such as Xinjiang and Heilongjiang. The best-selling types of imported agriculture machinery include large tractors, harvesting machinery products with high horsepower and high degrees of automation (in particular, corn harvesters), compound units, and advanced cotton pickers.

2013-2014 China's Imports of Agricultural Machinery, Soil Preparation, Cultivation (HS Code 8432)

	2013 (USD millions)	2014 (USD millions)
Total Imports	156	151
Imports from the U.S.	27	20
U.S. share of the total imports	17.3%	13.2%

Source: UN Comtrade

In 2015, the top five export destinations of U.S. produced agricultural machinery were Canada, Mexico, Australia, China, and Germany. Despite the fact that the U.S. has experienced a steady decrease in its export of agricultural machinery over the past three years, the country is exporting more agricultural machines to China than ever before. China's total import of U.S.-made agricultural machinery grew by 47.5 percent in 2015 – the highest among all the major purchasers of U.S. agricultural machines.

2015 The Highest Among All The Major Purchasers Of U.S. Agricultural Machines

Country	Increase Rate	Total Imports (USD millions)
Canada	-17%	2,200
Mexico	11%	1,000
Australia	-2%	625
China	47.5%	471
Germany	-13%	255

Source: China's Administration of Agricultural Machinery

Agricultural Equipment Parts

U.S. shipments of agricultural equipment parts to China fell sharply in 2014, declining by 22.4 percent from 2013 , but posted a strong recovery in 2015 – the U.S. exported US$ 55 million in agricultural machinery parts (HS Code 843390) to China during the year, an increase of 57 percent and accounting for half of China's total agricultural machine part imports. China has been experiencing heightened domestic demand

for highly specialized equipment such as milking machinery, seeders and planters, and certain tractor components. This is an area where the U.S. is particularly strong – over 90 percent of China's imports of parts of milking machines and dairy machinery are from the U.S., as shown in the table below:

2013-2014 China's Imports of Parts of Milking and Dairy Machinery (HS Code 843490)

	2013 (USD millions)	2014 (USD millions)
Total Imports	11.7	18.3
Imports from the U.S.	7.6	17
U.S. share of the total imports	65%	93%

Source: UN Comtrade

Chapter 1: Industry Report

Automotive Components Industry

Overview

Following several years of strong growth, China overtook the United States as the world's largest car market in 2010. Increasing from just 2.4 million car sales in 2001 to 24.6 million units in 2015, car use in China has exploded in little over a decade. Though China's car sales last year saw a slowed growth – 4.7 percent compared to 6.86 percent in 2014 – industry analysts predict that car sales in the Chinese market will see a significant growth over the long term due to Beijing's continuous tax break in the sector. Indeed, China's December car sales rose 18 percent from a year earlier, following the country's decision to halve a 10 percent purchase tax levied on vehicles with engines smaller than 1.6 liters. American automotive manufacturer General Motors (GM) recently reported a 5.2 percent growth in vehicle sales in the Chinese market despite several months of decreasing sales in mid-2015.

According to the China Association of Automobile Manufacturers (CAAM), passenger-car sales in China reached 21.1 million vehicles in 2015 – a 7.3 percent year on year growth. China's top passenger car manufacturers include FAW-Volkswagen, Shanghai GM, Nissan-DFM, and Guangzhou Auto Honda. Looking ahead, CAAM projects the country's total vehicle sales will grow seven percent in 2016, and passenger-car sales 7.8 percent to 22.76 million units, helped by government purchase incentives for small cars, which make up nearly 70 percent of new-car sales.

Automotive Components Manufacturing

Driven by strong car sales, the automotive components industry in China has expanded rapidly in a short amount of time. In 2015, the industry's revenue totaled US$542.2 billion, up five percent from 2014, increasing at an annualized rate of 13.1 percent over the past five years. With the industry growing faster than China's GDP, the number of registered automotive parts producers went from 4,200 in 2003 to over 10,000 today. An estimated 15,000 additional, unregistered auto parts

companies are in operation. This makes China one of the largest producers of automotive parts worldwide.

However, the industry is highly fragmented and mainly consists of small companies producing just one part, or a component of a part. Internationally, investments in car manufacturing tend to show a finished car to car parts ratio of 1:1.3, but in China this is 1:0.3. Chinese car parts manufacturers are heavily dependent on labor, making relatively little use of technology compared to most car producing countries and often lack economics of scale. R&D expenditure is often at a fifth of what is common internationally. Most companies produce low-tech parts, with the more advanced ones being imported.

Trade Opportunities

2014-2015 China's Import of Cars and Automotive Components

Unit: USD millions

	2014	2015
Total Imports	89,505	69,615
YoY Growth Rate	20.7%	-22.2%
Imports from the U.S.	14,169	13,119
U.S. Share of the Total Imports	15.3%	18.2%

Source: China Customs (HS Code 87)

China's car imports dropped by 22.73 percent in 2015, primarily due to weaker domestic demand. However, in the same year, the U.S. exported 260,600 cars to China, making the U.S. the country's second largest source of car imports.

2015 witnessed a downturn in China's automotive parts trade. Specifically, the country imported 681,300 engines (US$1.86 billion), decreasing by approximately 16 percent. Meanwhile, the import of other automotive accessories and car bodies fell by 14.97 percent, standing at US$26.79 billion. China imported more car chassis with engine than any other car part in 2014. The country's top three import partners for car products are Germany, Japan, and the U.S. The U.S. also became the country's largest export destination of auto parts in 2015. Given that the production of

2013-2015 China's Import and Export of Automotive Parts

Unit: USD millions

	2013	2014	2015
Total Imports	33,493	37,551	32,065
YoY Growth Rate	9.34%	12.12%	-14.61%
Total Exports	78,418	84,314	80,046
YoY Growth Rate	5.33%	7.52%	-5.06%

Source: China Association of Automobile Manufactures (CAAM)

advanced automotive parts is still limited in China, products such as acoustic systems, automobile special-purpose ICs (integrated chips), high-end sensors, and microprocessors are mainly imported from developed economies.

Best Prospects

Mechanical parts and accessories

Mechanical parts and accessories make up the main product segment of China's auto parts industry, contributing 56 percent of total industry revenue. The majority of automobile components are mechanical parts, including bearings, filters, covers, brakes and clutches.

Electronic motor parts and accessories/drivers

The second-largest industry segment is parts and accessories for electronic motors, accounting for an estimated 23 percent of total industry revenue. This segment includes starting motors, alternators, control units for electronic systems, and mechanical and electronic drivers. China's domestic demand for products within this segment is relatively steady, and is expected to experience small proportional increases in the coming years.

Electronic parts and accessories

Another major industry segment is electronic parts and accessories, which generated 21 percent of total industry revenue in 2014. This segment includes engine electronic control systems, anti-lock braking systems (ABS), meters, global positioning systems (GPS), transducers, entertainment systems, and items used in the control, safety, communication and entertainment fields. Along with the development of China's automobile manufacturing sector and growing demand for high-end automobiles, this segment is set to substantially increase in size.

New Energy Vehicle Parts

Driven by concerns about air pollution and China's dependence on oil imports, the Chinese government has embarked upon a policy to promote the use of electric vehicles. Like in many other countries, China has rolled out preferential policies for private car purchases as well, with the central and certain local governments offering numerous subsidies and incentives. Although China is aiming to substitute overseas key materials and parts with homemade products by 2025, the country's domestic new energy vehicles manufacturers are currently still relying on foreign suppliers to build pure electric and hybrid vehicles. Major imported electric car parts in China include motors, controllers and drive systems.

Chapter 1: Industry Report

Aviation Industry

Overview

The rapid development of China's aviation industry has created new opportunities for foreign companies looking to sell to the Chinese market. Within the next 20 years, China is predicted to realize ten percent annual growth in demand for air transport (compared to two percent U.S. growth), $64 billion worth of government investment into China's airport development, and an increase of 4,583 commercial airliners.

As shown in the table below, while China's total expenditure on worldwide aircraft imports saw a slight decrease in 2015, imports from the U.S. rose by nine percent, accounting for over 60 percent of the U.S.'s total exports to China. Additionally, the number of aircraft that China imported rose to 68,274 last year – a growth rate of 533.9 percent compared to 10,771 in 2014 – indicating that there is a high demand for cheaper aircraft.

Aircraft, Spacecraft, and related parts (HS Code 88)

Unit: USD millions

	2013	2014	2015
Total Imports	23,183	28,503	26,592
Imports from the U.S.	13,580	15,517	16,937
U.S. Share of Total Imports	59%	54%	64%
YoY Growth Rate	5.33%	7.52%	-5.06%

Source: General Administration of Customs of the People's Republic of China

China's newly released 13th Five-Year Plan (2016-2020) includes a focus on development of the aviation industry, primarily in terms of airport construction, aviation equipment manufacturing, and the general aviation industry. As stated in the Plan, China is looking to build over 50 new civil aviation airports in the next five years.

Sub-Sector Best Prospects

Aircraft Parts: Manufacture and Repair

Aircraft parts (HS Code 8803)

Unit: USD millions

	2013	2014	2015
Total Imports	2,081	2,338	2,150
Imports from the U.S.	620	714	
U.S. share of total imports	30%	31%	
YoY Growth Rate	5.33%	7.52%	-5.06%

Source: General Administration of Customs of the People's Republic of China

The 2008 establishment of China's first aircraft manufacturing company, Commercial Aircraft Cooperation of China (COMAC), marked a turning point in an industry long dominated by American aircraft manufacturing company, Boeing, and its European counterpart, Airbus. According to Marwan Lahoud, the head of Airbus's strategy and marketing, COMAC is expected to become a major competitor for both Boeing and Airbus by 2020. COMAC's development of the C919, a 156-174 seat commercial airliner, is predicted to stand as a competitive commercial aircraft alternative to the Boeing 737 and Airbus A320. The C919 is not only 15 percent more fuel efficient than its American and European counterparts, but is also less expensive than a $78-113 million Boeing 737 or $88-97 million Airbus A320.

The existence of a domestic aircraft manufacturing company in China has produced a multitude of new opportunities for foreign companies looking to sell to the Chinese aviation market. Though COMAC is owned and controlled by the Chinese government, the PRC has explicitly promoted the use of foreign parts in

its manufacturing process. Foreign companies such as General Electric, Honeywell, Kidde, and Rockwell Collins have already provided COMAC with engines, auxiliary power units, flight simulator tests, and fire and heat protective systems.

General Aviation (GA)

China is experiencing a massive expansion of its general aviation (GA) industry. While China's total civil aviation turnover has been ranked the world's second largest since 2005, the development of its GA industry is still lagging behind. By the end of January 2016, China had 1,905 general aviation aircraft – more than three times that of 2010 – yet only 0.7 percent of that in the U.S. Meanwhile, the GA sector's total revenue contributes a mere one percent to the country's civil aviation industry. As such, the GA industry presents huge growth potential in terms of GA aircraft numbers, GA professionals, and GA facilities.

Light Aircraft

Light aircraft, which form the largest part of the global GA fleet, are poised to be the next mainstream in China. For years, the country's demand for light aircraft has mainly been powered by GA flight schools, where small planes are used for training purposes. Today, foreign aircraft makers are seeing new opportunities in the country's short trip market. Light aircraft will largely facilitate trips in China's massive mountainous and lake areas. According to Pan Linwu, vice-chairman of Continental Motors Group, compared to building railways or highways, paving a simple runway will be able to save a significant amount of cost and investment. The company is a supplier of the Civil Aviation University of China, a university that has over 60 light aircraft for training students.

Paul McGartoll, vice president of Strategy and Business Development for Textron Aviation, stated that the sale of light aircraft in China increased by 25 percent in 2015. It is estimated that China will need over 10,000 light aircraft in order to meet the general aviation sector's rapid expansion.

Helicopters

Despite the slowdown in the Chinese economy, the sale of helicopters in the country maintained an 18 percent growth rate in 2015, according to Chris Jaran, Bell Helicopter's vice president in China. China's fleet of privately owned helicopters grew by 16 percent in 2015 to reach 760 aircraft in total. The market is estimated to be worth more than US$84 billion by 2020.

China's helicopter market is currently dominated by three foreign helicopter manufacturers: Robinson (32 percent), Airbus Helicopters (23 percent), and Bell Helicopter (14 percent). The most popular categories in the Chinese market are the light single engine and single to double engine intermediate weight helicopters. The country is planning to increase its fleet of helicopters by 10 percent in 2016 and will further loosen its control over low altitude airspace, allowing private owned helicopters to use the airspace below 1,000 meters.

Private Jets

Another promising yet slowly growing market is the country's private jets industry. China's business jet fleet grew by six percent in 2015, the slowest growth rate in the past 10 years. The country's underdeveloped infrastructure and restrictions on private jets are seen as major reasons behind the sales drop. Despite this, it is widely believed that China's demand for business jets will increase considerably as barriers to business jet ownership and operation are gradually removed. It is also predicted that a total of 800 business jets will be delivered to China in the next 10 years and China's private jet fleet will exceed 2,600 aircraft by 2032.

Government Cooperation

The U.S. is home to many major players in the aviation industry and large manufacturers of aircraft engines, and has been working closely with China's aviation sector. The U.S. Federal Aviation Administration and the Civil Aviation Administration of China have endorsed a program known as the U.S.-China Aviation Cooperation Program, which was created to promote technical, political and commercial cooperation between the two countries. The city of Wichita, Kansas, known as "The Air Capital of the World," and the headquarters of American Textron group, has also signed trade agreements with China's aviation hub, Shenyang, on aircraft supply.

Chapter 1: Industry Report

Clean Coal Technology

Overview

China is both the world's largest coal producer and consumer. In 2015, China produced 3.75 billion tons of coal and consumed roughly four billion tons at a declining growth rate of 3.3 percent and 3.7 percent, respectively. The Chinese market for coal and coal products is shrinking. Declining coal prices and the country's rising costs of production have left more than 70 percent of Chinese local miners losing money. In order to relieve pressure on the country's jittery coal market, the Chinese government has released a slew of policies to ban or limit coal imports in recent years. These include rebooting its levy of import tariffs on coal and raising resource tax rates.

2013-2015 China Coal Consumption

Unit: USD millions

	2013	2014	2015
Coal Consumption in China (bn tons)	3.61	3.51	3.97
Share of China's total energy consumption	65.7%	66%	64%

Source: China Statistics Bureau

In 2015, China imported 200 million tons of coal, a 30 percent drop from 2014 and the lowest amount since 2011. Australia remains the largest exporter of coal to China, followed by Indonesia, South Korea, Mongolia, Russia, and Canada. These six countries together constituted 98.1 percent of China's coal imports in 2015. Besides RMB depreciation and other market factors, the sharp decrease in China's coal imports is largely due to pressures stemming from air pollution and the country's preferential policies towards domestic coal companies. However, while China's

coal industry is currently over capacity, the need for clean coal technology and equipment is growing at an unprecedented rate.

Growing Need for Clean Coal Technology

Coal is the main source of China's CO2 emissions, which reached 10 billion tons in 2013. Faced with massive air pollution, the country promised to peak its carbon dioxide emissions by 2030 during 2015's international conference on climate change in Paris. Efforts have been made by the Chinese government to promote cleaner use of coal and boost emission-cutting technologies for coal-fired power stations. China's 13th five-year energy plan sets out ambitious standards for capped energy consumption for the period 2016-2020, aiming to cut coal power pollution by 60 percent by upgrading its current power stations with "ultra-low emission" technologies.

In order to achieve this goal, China will invest an estimated RMB 150 billion during the next five years in upgrading and building new clean coal power stations. According to the Institute for Energy Research, the country is building new coal-fired power plants every seven to 10 days. However, a Greenpeace investigation conducted in 2015 suggests that nearly half of China's new clean coal power plants are violating emission standards, as the technology isn't switched on.

Having realized the importance of advanced coal technology, the Chinese government has been reaching out to developed economies and actively encouraging clean coal equipment imports. In 2015, the U.S. Department of Energy (DOE) and China's National Energy Administration reached a clean coal agreement, which allows the two nations to jointly advance carbon capture, utilization and storage (CCUS), and other clean coal technologies for commercial use. Clean coal is the process of chemically washing coal of its minerals and impurities, removing sulfur dioxide, and making the carbon dioxide in the flue gas economically recoverable. Currently, China has four top priorities relative to development of CCTs for power generation: IGCC, supercritical coal-fired power plant, atmospheric fluidized bed combustion, and pressurized fluidized bed combustion.

Trade Opportunities

CCT Equipment

The U.S., together with Japan and Germany, is one of the major CCT equipment exporters to China, making up approximately 20 percent of the country's CCT imports.

As China is looking to equip all coal-fired facilities with clean coal technology and emissions abatement equipment, its demand for advanced waste treatment and purifying machinery presents huge trade opportunities to U.S. exporters. In 2014, the U.S. exported US$ 329.4 million of purifying machine parts to China, around 30 percent of China's total imports of such parts. Best-selling CCT equipment in China include filtering machinery for gases, steam & vapor generating boiler auxiliary plant parts, and furnace burners for solid, gas or combination fuel.

2013-2014 China's Import of CCT Equipment (Based on HS Code 840490, 841620, 842139, 842199)

Unit: USD millions

	2013	2014
Total Import	2356.8	2495.2
Imports from the U.S.	538	490.1
U.S. share of the total import	22.3%	19.6%

Source: UN Comtrade, U.S. International Trade Administration

Carbon Capture, Utilization and Storage (CCUS) Technology

CCUS is able to capture carbon dioxide emissions from large sources and store the captured carbon underground. China is emerging as a major influence on CCUS deployment, with several planned and operational demonstration projects. These projects have resulted in the capture of around 270,000 tons of CO2 per year, with utilization of more than 120,000 tons per year and storage of another 100,000 tons per year. In 2014, the U.S. and China signed four partnership agreements on CCUS, including a large demonstration project to capture 1 million tons of CO2 per year between China Sinopec and the University of Kentucky.

Advanced Coal Gasification Technology

Instead of burning fossil fuel, coal gasification chemically transforms coal into synthetic natural gas (SNG). While China has just recently started the construction of 50 coal gasification plants in northwestern parts of the country , the U.S. has been producing SNG since the 1980s, indicating the country's mature coal gasification technology and expertise. Moreover, there are two major problems with coal gasification in China. Coal gasification produces more CO2 than a traditional coal plant, and it is one of the more water-intensive forms of energy production. As such, U.S. exporters can find opportunities in licensing new technology and selling wastewater treatment equipment that can be used to tackle these two problems in China's Western regions.

Chapter 1: Industry Report

Construction and Green Building

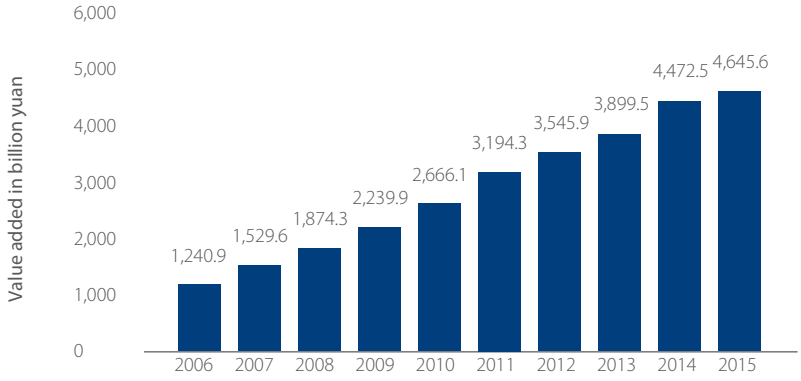
Overview

China is the world's largest construction market. In 2015, the country's construction industry output totaled RMB 18 trillion, up 2.3 percent from the previous year (compared to 10.2 percent growth in 2014 from 2013). Though experiencing a structural slowdown due to recent troubles in the broader economy, China's construction industry is expected to significantly increase in the long-term – the sector's growth is forecast to reach 4.8 percent in 2020 to 2025, and 5.2 percent in 2025 to 2030.

The culmination of a growing middle class, rising wages, and rapid urbanization has created an immensely profitable construction sector in China. Each year, 1.8 billion square meters of construction is erected in China and the country is responsible for

Value added in the Chinese Construction Industry from 2006 to 2015

Unit: RMB Billion



Source: Statista

more than half of global cement consumption. According to a report released by consulting firm McKinsey & Company, 8.5 million new homes will be built annually between 2014 and 2030.

At the same time, in order to combat China's heightening pollution crisis, the government is continuously looking for measures to build a more sustainable economy, and these initiatives will have an impact on the construction sector. China became the world's largest energy consumer in 2009, and buildings currently account for approximately 25 percent of all energy usage in the country. The CCP's 13th Five Year Plan aims to implement a comprehensive set of seventeen standards governing land, energy, water, materials savings, ambient and indoor environment requirements, and other functional requirements nationwide. By 2030, China's government projects that at least 30 percent of new buildings will be constructed and maintained according to green standards, using renewable energy sources and environmentally sustainable construction materials.

Green Construction Materials

China's construction and construction materials sectors are dominated by Chinese firms. China's rapid urbanization has led to a surge in demand for resources, carrying a variety of economies around the world through a multi-year boom period. The production of construction materials and components from these imports has been largely dominated by local companies.

Meanwhile, in line with increasing concerns over energy efficiency and pollution, demand has surged for a number of related product categories (i.e., green construction materials). However, most of China's local production companies are still unfamiliar with green materials and are unable to supply green materials that are eligible for use under international certification schemes. As such, imports of green construction materials, including energy efficient building materials, wastewater treatment equipment and technologies, and wood and steel replacements are expected to create extensive new opportunities for U.S. green building material exporters. The U.S. is China's second largest source of imports for construction materials, with a 13 percent import market share.

Best Prospects

Below are China's five major imports of green materials and fastest growing building component sectors:

Glass

In 2015, China imported US $6.60 billion of glass and glassware (HS Code 70), with US $885 million of this amount imported from the U.S. America's exporters enjoyed a healthy 13.4 percent share of China's glass import market last year, ranking fourth as the source of imports. Japan (US$1,572 million), Taiwan (US$ 1,422 million), and the European Union (US$925 million) out-competed U.S. exporters, with 23.8 percent, 21.5 percent, and 14 percent of the import market respectively. U.S. glass exporters must obtain China Compulsory Certification (CCC) for safety glass products to certify their compliance with Chinese product standards.

Waterproof materials

This category can be divided into five sections: high-polymer modified asphalt coiled materials, high polymer waterproof sheets, waterproof paints, sealing materials, and rigid waterproof bridging materials. In China, asphalt materials are still the main product, accounting for about 80 percent of all waterproof materials, while the proportion of high polymer waterproof sheets and others accounted for about 20 percent. U.S. waterproof material exporters have ample room to grow their share in the Chinese market, which currently stands at just 4.6 percent.

2013-2015 China's Import of Plastic Floor, Wall or Ceiling Covering (waterproof)

Unit: USD millions

	2013	2014	2015
Total Imports	155.2	159.2	N/A
Imports from the US	7.2	7.3	6.6
U.S. Share of the Total Imports	4.6%	4.6%	N/A

Source: UN Comtrade (HS Code 3918)

- Indoor decorations and fixtures (gypsum plaster boards, wallpaper and suspended ceilings)

China's domestic demand for wallpaper has been decreasing over the past few years. In 2014, China imported 12,100 tons of finished wallpaper – a 27 percent drop compared to 2013. Last year, U.S. wallpaper exporters sold US $21 million of wall coverings to China (HS Code 4814).

- Advanced ceramics (Divided into electronic, micro-crystalline and Nano-ceramics,- advanced ceramic matrix composites being the best-selling advanced ceramics product)

China is one of the world's largest markets for advanced ceramics, accounting for approximately 40 percent of the global market share. The country is also the fastest-growing market for advanced ceramics in the Asia-Pacific region, mostly owing to government initiatives to promote industrial growth. In 2015, China imported US $283,784 of ceramic building bricks (HS Code 6904) from the U.S., increasing by 70.8 percent from the previous year.

Wood

The U.S. currently claims over 11 percent of China's wood import market, making it the second largest source of subsector imports after Russia (16.8 percent). The year 2015 saw a slight decrease in wood product imports into China, but overall demand for wood and wood products has shown steady growth, and this trend is set to continue through 2017. While Chinese importers have shown strong interest in importing logs or least-processed wood and undertaking value-added production in China, U.S. exporters have tremendous opportunities in higher value-added wood product sales.

2013-2015 China's Import of Wood and Articles of Wood, Wood Charcoal

Unit: USD millions

	2013	2014	2015
Total Imports	18,769	22,791	18,643
Imports from the US	2,347	2,664	2,073
U.S. Share of the Total Imports	12.5%	11.2%	11.1%

Source: UN Comtrade, China Customs (HS Code 44)

Additionally, imports of new wall materials, including isolative materials and recycled construction waste, are on the rise in China and present solid opportunities for U.S. suppliers.

Chapter 1: Industry Report

Education Industry

Overview

Fueled by a rising middle class and the demands of an increasingly competitive economy, China's appetite for foreign education continues to grow. China is the largest source of international students in the U.S., supplying 304,040 students during the 2014-2015 academic year. China provides over 30 percent of all international students in the U.S., twice the number coming from the second largest contributor, India, with 132,888 students in the same year. Accordingly, China accounts for roughly a third of money spent by international students on tuition, fees, and living expenses, dwarfing that from other countries. While the first Chinese students studying in the U.S. after the country opened up in the late 1970s were largely funded by government scholarships, 97 percent of Chinese studying abroad in 2015 were self-funded, demonstrating the country's robust spending power.

With a long cultural history stressing the importance of education, many middle and upper middle class Chinese families are keen to have their kids receive a high quality American education. Though the number of higher education institutions in China has more than doubled since 2000, reaching 2,529 in 2014 , U.S. universities are still considered more prestigious. While Chinese students have also been flocking to countries such as Australia, Britain, and Canada for education, they have been entering the U.S. at a comparatively higher rate. In fact, the influx of foreign students has shifted the average age of Chinese immigrants to the U.S. downwards, as the 15-19 and 20-24 age brackets have witnessed the biggest growth in recent years.

A popular sentiment among Chinese parents is that a U.S. education allows Chinese students greater opportunities to develop their creativity and critical thinking faculties while gaining invaluable linguistic skills at the same time. China's education system, though rapidly gaining prestige, is often criticized for its emphasis on rote memorization and overly intense competition among students. In addition to the quality of education, many Chinese families see overseas education in the U.S. as

a means to gain a foothold in the country for future employment and emigration; however, some simply see a foreign education as a luxury product.

Opportunities

Higher Education

In 2015, Chinese students studying at U.S. universities and colleges contributed US$9.8 billion to the economy, effectively subsidizing the costs for domestic students in many cases. Over the next four years, the number of Chinese students studying in the U.S. is projected to grow by another 11 percent. It is therefore essential for universities and colleges to understand the educational needs and expectations of Chinese students.

As more Chinese attend university than ever before, young graduates must differentiate themselves from one another to compete in the job market. In 1999, only 6.5 percent of 18-22 year olds attended higher education institutions, compared to 37.5 percent in 2014. Summer 2014 witnessed 7.5 million new Chinese graduates – nearly double the 3.8 million who graduated in the U.S. Due to the abundant supply of young graduates, competition in the job market is fierce. The average monthly salary for graduates from Chinese universities in 2014 was a meager RMB 2,443, which in some cases is less than what a migrant worker makes. However, about half of graduates with foreign bachelor's degrees earn over RMB 5,000 upon returning to China, which, while still modest, reflects the higher earning power of foreign degrees.

The higher value of a U.S. higher education degree is increasingly important as China becomes a globalized service-driven economy. About 70 to 80 percent of students studying abroad return to China after graduating, largely driven by the allure of the domestic job market. Studies have shown that compared to other developing countries, the families of Chinese students are less concerned about the costs of attending university and principally concerned about the job prospects a degree provides. Forty-two percent of Chinese students study science, technology, engineering, and mathematics (STEM), followed by 28 percent in business, and 8 percent in social sciences. However, among Chinese students who return to China, the plurality (30 percent) expects to work in the financial sector. While there used to be far more graduate students than undergraduate, the two populations are now essentially even, comprising 39.6 percent and 41 percent of total students, respectively.

K12 Education

The number of Chinese students participating in K-12 education in the U.S. is also rapidly increasing. Chinese secondary students account for nearly 50 percent of international high school students in the U.S., growing from only 632 students in 2005 to 38,089 in 2014 – a rate of 5,927 percent. Families who can afford to send their children to U.S. K-12 schools generally do so to escape the intense pressure and competition of Chinese compulsory education, and to develop language skills, build an international network, and have their children grow up in an environment with cleaner air and a generally healthier standard of living.

Additionally, studying at American high schools makes it easier to get accepted into American universities, which are increasingly recruiting Chinese students already in the U.S. While the majority of international high school students from Europe and Latin America go to the U.S. for cultural exchange, Chinese students generally do so to be admitted to a U.S. college or university. Many universities face challenges determining the preparedness of Chinese students and differentiating them from one another based on Chinese high school grades, and most do not recognize performance in the standardized gaokao exam. Furthermore, many Chinese students employ educational consultants or agents to access foreign universities, many of which are unlicensed and sometimes plagiarize and forge documents to get students admitted.

Attending a K-12 educational institution is a considerable investment for Chinese families. Since those with F-1 student visas cannot spend more than one year at a U.S. public school, 95 percent of international high school students attend private schools. With the costs of tuition, room and board, and other living expenses, attending private schools generally costs over US$45,000 per academic year.

Training

Skilled labor shortages in many industries have led the Chinese government to promote vocational training in an effort to improve the country's work force. Training and vocational education institutions are the only form of education encouraged for foreign investment in China, highlighting the government's interest in exposing its citizens to such education. However, the majority of teachers at vocational schools in China are unqualified, and many schools lack adequate facilities and curricula to effectively prepare students for the workforce. For instance, a report from Business

Insider on computing schools determined that only 10 percent of teachers had worked in the sector. As such, students seeking advanced technical knowledge can benefit from U.S. expertise and resources that are not readily available in China. In this vein, online distance education, though still nascent in China, represents a potential growth sector for those who cannot afford to study overseas.

Chapter 1: Industry Report

Environmental Technology

Overview

China's dire environmental situation has galvanized the government to initiate political objectives to invest in new technology to combat water, air, and soil contamination. Under the 13th Five Year Plan (2016-2020), investment in environmental protection is estimated to reach US$1.37 trillion. Of that amount, about US$291 billion will be dedicated to water pollution control, about US$248 billion will be dedicated to air, and about US$831 billion will be dedicated to soil. Investments are to focus mostly on monitoring of pollution, as well as control action plans to decrease contamination amounts. Since the environmental market has been identified by the government as a strategic industry, it is expected to continue its growth over the next few years, and likely even beyond given the scope of the work to be done. From 2011 to 2015, the industry grew at an average annual growth rate of over 15 percent. It is expected to maintain its growth at an annual average rate of 30 percent.

With the 13th Five Year Plan, China has stepped up its efforts on environmental protection from previous five-year plans. To meet these new standards, China's energy policy is heavily focused on energy efficiency and the increased use of non-fossil energy. In particular, the Plan stipulates that local municipal governments have to reach hard targets for overall ambient air quality. According to Premier Li Keqiang in his Work Report to the National People's Congress, those that violate environmental regulations or fail to report violations will face severe punishments.

Moreover, the Plan sets a cap on total energy consumption at five billion tons coal equivalent (TCE) by 2020. Technologies that upgrade the currency heavy industry and power sectors will be highly sought after, as there still remains large space for efficiency gains. However, greater efficiency is only one part of China's shift in the next few years. The long-term focus is on switching fuel sources. The 13th Five Year Plan also details plans to foster the development of non-fossil fuel sources. At the

moment, hydropower outstrips any other renewable power source in China, with nuclear energy growing rapidly. By 2020, the government hopes that non-fossil energy will make up 15 percent of its total energy mix. This number will increase to 20 percent by 2030.

Sub-Sector Best Prospects

Air Pollution Control

China is making visible progress in controlling air pollution. During the first quarter of 2016, 338 prefecture-level and above cities' average PM2.5 (tiny harmful particulate matter) levels fell by 7.6 percent compared to the same period in 2015. Earlier this year, Chinese premier Li Keqiang stated that the factory emissions of PM2.5 will be cut down by 25 percent by 2020. Beijing municipal government has determined to lower the city's PM2.5 levels by five percent within 2016. In order to realize the target, China has been actively encouraging imports of clean coal products & technology, air purifying machines, as well as air quality monitoring equipment.

Water Pollution Control

In June 2016, China's Ministry of Environment Protection released a list of regions where the water quality needs to be improved during the country's 13th Five-Year Plan period. The list includes 29 provinces (out of the 34 provincial-level administrative units in China), 197 prefecture-level and above cities, and 956 county level cities. China's northern province of Hebei has the highest level of water pollution, and is suffering from a shortage of water resources. The Hebei government has recently announced its plan to invest around RMB 240 billion to improve its water quality by 2030, aiming to upgrade sewage treatment facilities and limit industrial and agricultural water pollution. The country's ambitious scheme offers vast opportunities to U.S. exporters specializing in sewage treatment, water recycling, and water efficiency solutions.

Soil Contamination

According to the nationwide soil pollution survey published in April, 2016, 16.1 percent of China's soil, 19.4 percent of its arable land, and 21.3 percent of its land for solid waste treatment are polluted. Furthermore, 36.6 percent of the land used by the heavy-pollution enterprises in China is polluted. Soil contamination is one of the three key pollution areas that the Chinese government wants to target over the next five years. Outlined in the 13th Five Year Plan are goals to set up six "Soil Remediation Demonstration Zones"; and to conduct a pilot pollution control scheme on 100 agricultural lands and 1000 industrial lands across the country.

Best-selling Products and Trade Opportunities

Still at an early stage of development, China's environmental market presents U.S. exporters with significant trade opportunities. In China, equipment produced for environmental protection is mainly for the purpose of prevention and treatment of water and air pollution. The environmental services offered in China are largely in the areas of the design and construction of environmental engineering projects, and the operation of treatment facilities. If China is to meet its target of controlling pollution and saving energy in the coming decades, it will need to acquire a number of key technologies in the sectors of sewage treatment (in particular solid waste recycling), environmental monitoring, and integrated utilization of waste resources. However, China has yet to master these core technologies and is still relying on high-tech equipment/technologies imported from foreign countries such as the U.S.

2013-2015 China's Import of Purifying/Filtering Machinery (HS Code 842129)

Unit: USD millions

	2013	2014	2015
Total Imports	865.8	975.7	816.3
Imports from the US	121.3	158	95.1
U.S. Share of the Total Imports	14%	16%	12%

Source: UN Comtrade

In 2015, the U.S. exported US$738.4 million of liquid and gas filtering machines (HS Code 8421) to China, accounting for 18.9 percent of China's total import of these products. Among this, US$369.7 million came from the import of parts for filter/purifying machines, followed by water purifying machinery and apparatus at US$46.4 million, and US$95.1 million generated from filtering machinery for liquid not elsewhere specified (NES) imports. There is still plenty of room for U.S. exporters engaged in the manufacturing of soil/water/air quality monitoring equipment, composting equipment, and those who have expertise in technologies such as electrocoagulation (EC) water treatment systems, recycling processes, and brownfield site remediation designs. In addition, exporters are also encouraged to provide energy saving and environmental protection consultancy services to Chinese domestic companies.

Chapter 1: Industry Report

Franchising

Overview

As China transitions from manufacturing-driven growth to a consumption- and service-based economy, opportunities for franchising are abundant. According to the China Chainstore & Franchise Association (CCFA), China has over 4,500 franchise and chain store companies, which collectively employ around 10 million people. The top 100 of these franchises had a combined 124,086 stores and generated RMB 428 billion (US$66 billion) in sales in 2015. These numbers are poised to increase as China's economic transition matures, and the country's second and third tier cities gain more spending power.

In 2015, the annual disposable income of urban households in China grew by 6.6 percent in real terms to reach RMB 31,195 (US$4,670). As well, the total retail sales of consumer goods reached RMB 30.09 trillion (US$4.57 trillion), further solidifying China's status as a highly coveted consumption market. Consumer spending is projected to outpace GDP growth in the coming years, growing by US$2.3 trillion from 2015 levels to reach US$6.5 trillion by 2020. Daxue Consulting projects that a sizeable 76 percent of Chinese families will be part of the middle class by 2022.

A member survey conducted by the International Franchise Association found that 84 percent of franchisers plan to start or accelerate international operations, and 25 percent of them receive 25-50 percent of their revenue internationally. China is a key location for international franchisers, thanks to its huge population and growing spending power. Another CCFA survey of "100 Strong China Franchises" found that 90 percent of them predicted sales and store openings to grow in 2016, and 44 percent estimated 2016's rate of sales growth to be higher than that of 2015. Only seven percent planned to reduce their number of franchise locations.

Franchising in China

Exporting franchises from the U.S. to China works in much the same way as franchising domestically, as the Chinese franchisee pays a percentage of revenue to the American franchiser as a royalty fee for using the brand, while the franchiser provides support and expertise. Since joining the World Trade Organization in 2001, China committed to immediately permitting international franchising services. In the ensuing years, the Chinese government gradually updated its regulations to loosen restrictions on franchising. One of the key regulations governing franchising is the "2+1 Requirement", which stipulates that a franchiser must have at least two directly-run international locations that have operated under a franchised brand for at least one year, though this requirement has been relaxed in recent years.

Franchising in China can present several challenges, however. Difficulties in finding qualified franchisee candidates, rising land and labor costs, a somewhat nontransparent legal system, and gaps in supply chains and intellectual property protection are common issues that franchisers encounter when establishing operations in China. According to a 2015 CCFA survey, 45 percent of franchisers in China considered rising costs their biggest challenge; 19 percent reported retaining top talent; and 24 percent stated that both rising costs and retaining top talent was the leading hurdle.

To overcome these issues, many franchisers take a careful approach when entering China for the first time, often establishing a wholly foreign owned enterprise (WFOE) in a first tier city to gain more oversight over the business. Doing so allows them to directly control their brand and product while learning about the local business culture and customer preferences, thereby protecting the brand's reputation before expanding throughout the rest of the country. Franchisers often find that brand logos and associated images – as well as the products themselves – need to be tailored to the unique tastes of Chinese consumers, while preserving the core product and brand. While this method allows franchisers to ease into the Chinese market before setting up multiple franchises in a new, unproven environment, it generally results in higher costs and slower expansion in the short term.

Opportunities

Food and Beverage

About 40 percent of all franchisers in China are engaged in the retail or food and beverage industries, making these the largest franchised sectors in the country. American companies are highly capable in these sectors: of the ten leading American franchise firms, six of them are in the food and beverage industry and two are in retail. Managing supply chains is particularly important in the food and beverage industry, as Chinese consumers are increasingly attentive to health concerns in response to several high profile food safety scandals, including one involving McDonald's in 2014 that greatly damaged the company's brand. Western fast food is also becoming less of a novelty, as a survey reported that 51 percent of respondents consumed Western fast food in 2015, a stark drop from 67 percent in 2012. Additionally, China's fast food market growth rate is projected to slow to 4 percent by 2019 as the market becomes more mature.

Despite these challenges, many American food and beverage franchisers are planning to expand their presence in China to capture a portion of its vast market. McDonald's, the largest American franchiser in terms of sales, already has a significant presence in China and ambitious plans to expand further as the company seeks to make China its second biggest market. Although McDonald's closed 90 locations in China in 2015, it plans to add 1,300 new locations over the next five years to its current 2,200. This rapid expansion is enabled by increased franchising. Since establishing operations in mainland China in 1990, McDonald's has run most locations itself. However, as China reformed its franchising policies, McDonald's began franchising to Chinese partners in the mid to late 2000s; currently about 20 percent of its Chinese locations are franchised. By 2020, McDonald's aims to have over 30 percent of its restaurants in China franchised, gradually getting closer to the 90 percent level of its American operations.

Other franchised food and beverage chains are adopting similar strategies. Yum Brands, which operates KFC, Pizza Hut, and Taco Bell, franchises 91 percent of its stores outside of China, but only seven percent of its 6,900 Chinese locations. Yum Brands aimed to reach a 10 percent franchised rate by end 2015, and established a

separate unit to manage the Chinese market independently. It plans to eventually increase its total number of restaurants to 20,000. The strategies of McDonald's and Yum Brands suggests increased confidence in China's franchising industry, greater access to a reliable supply chain and qualified managers, and awareness of the need for more nuanced and localized market knowledge.

Non-Food and Beverage Franchises

While food and beverage chains dominate China's franchising landscape, there are many other rapidly expanding franchising prospects. Children's retail products and services are growing swiftly: from 2009 to 2014, China's baby care industry grew 55 percent per year. Gymboree, an American children's clothes franchise, has been highly successful in China, posting sales revenue of US$149 million in 2015 across 240 locations, 235 of which are franchised. Similarly, franchising education services, including language training and university preparation schools, offers excellent prospects.

American budget hotel chain Super 8 Worldwide, which had 675 franchises out of 688 locations in China and US$570 million in sales revenue in 2015, is demonstrative of growing franchising in the lodging and hospitality industry, capitalizing on China's high domestic tourism numbers. Chinese are also increasingly purchasing property through real estate franchises, as evidenced by Century 21's sales revenue of US$187 million across 745 franchised locations and 857 total locations. Other sectors primed for franchising in China are health and fitness products and services, car rentals and services, and elderly care. The success of these companies not only reflects the strength of their respective industries, but an increasing willingness among Chinese consumers to pay for services.

Chapter 1: Industry Report

Information and Communications Technology Equipment and Software

Overview

China is on its way to becoming the world's second largest market for information technology (IT) products and services. In 2015, China's IT market size reached US $750 billion and is predicted to grow 30 percent in 2016, according to China's IT Research and Development Center. The business revenue of the Chinese electronic information manufacturing sector reached RMB 11.3 trillion last year, RMB 6.7 trillion of which came from foreign IT companies.

China publicly announced its "Internet Plus" plan and implemented the "Made in China 2025" strategy last year, aiming to seek innovation-driven development, apply smart technologies, and integrate the mobile Internet with modern manufacturing. The Chinese government's expenditure on information and communication is expected to reach US $224 billion in 2016, of which 16 percent will go to business development – a 25 percent increase compared to 2015.

Software Market

According to statistics released by China's Ministry of Industry and Information Technology (MIIT), by the end of 2015, a total of 38,222 software companies were established in China, generating a combined RMB 4.3 trillion (15.7 percent increase) in sales during the year. Morgan Stanley predicted that China's software industry would maintain 15 to 18 percent annual revenue growth for the next few years, expanding the market to US $886 billion by the end of 2017. Currently, domestic software firms make up 34 percent of the country's software market share, with most small and medium-sized companies engaged in developing application software.

While China leads the world in the assembly and manufacture of Information and Communications Technology (ICT) and other electronic products, the lack of core technology and advanced operating systems has greatly impaired the development of its domestic IT and software industry, leaving lucrative opportunities for foreign high-tech IT companies and exporters.

Trade Opportunities

In 2015, China imported US $527.7 billion of ICT products, a slight decrease of 1.2 percent from the previous year. Even so, imports of communication equipment (i.e., Industrial Communication Devices) maintained robust growth. In 2015, the U.S. exported US $16.3 million of apparatuses for communication in a wired/wireless network (HS Code 851761) to China, which accounted for over 30 percent of China's total imports of this product category. Additionally, the software, semiconductor, and cloud computing sectors in China still rely heavily on imports of high-tech foreign products. China is a member of the Information Technology Agreement (ITA), and eliminated tariffs on IT products covered by the Agreement in 2005. In 2014, the United States and China reached a bilateral agreement to expand the scope of the ITA to cover every electronic device ever invented.

China's major imports of ICT products and their growth rates in 2015 are listed in the table below:

China's major imports of ICT products and their growth rates in 2015

Unit: USD millions

	Export		Import	
Total	781.1	-1.1%	527.7	-1.2%
Communication Equipment	214.8	8.7%	50.5	9.8%
TV & Radio Equipment	7.6	-10.2%	4.1	-11.7%
Computer	194	-14.4%	53.3	-12.6%
Household Appliances	105.7	-0.6%	19.8	-5%
Electronic Components	139.9	6.2%	299.4	2.2%
Electronic Materials	6.6	-6.1%	7.3	-9.6%
Electronic Devices Equipment	31.6	-4.9%	45.3	-6.8%

Source: China's Ministry of Industry and Information Technology

Semiconductors and Semiconductor Manufacturing Equipment

Driven by increasing consumer demand for electronic products, China became the world's largest consumer of semiconductors with a market value US $168 billion in 2014 – half the global total. The International Trade Administration (ITA) forecasts China's semiconductor consumption to grow 10 percent annually and to reach US $203 billion in 2016. However, China's domestic industry is not yet developed enough to satisfy demand, as 91 percent of semiconductors used are imported from abroad. The country accounted for only four percent of global semiconductor sales in 2014, compared to 51 percent for the United States. China spends more money importing semiconductors than it does on oil. China is the third largest international market for U.S. semiconductor manufacturing equipment and the fastest growing market for this type of equipment.

2013-2015 China Photosensitive Semiconductor Devices (HS Code 854140)

Unit: USD millions

	2013	2014	2015
Total Imports	8,994	10,404	11,853.6
Imports from the US	134.8	434.5	603.3
U.S. Share of the Total Imports	1.5%	4.2%	5.1%

Source: UN Comtrade

The Chinese government is investing up to US $161 billion and actively encouraging mergers and acquisitions to reduce its reliance on foreign semiconductors and allow it to compete with manufacturing powerhouses such as the United States, Taiwan, South Korea, and Japan. China is therefore seeing rising demand for advanced semiconductor manufacturing equipment. The United States exported US $1.42 billion of semiconductor manufacturing equipment to China in 2014, up 133 percent compared to 2013.

2013-2015 Chinese Imports of Semiconductor Manufacturing Equipment (HS Code 848620)

Unit: USD millions

	2013	2014	2015
Total Imports	2,607.6	4,441	4,495.5
Imports from the US	612.5	1,426	1,560
U.S. Share of the Total Imports	23.5%	32.1%	34.7%

Source: UN Comtrade

Fabrication Equipment

China has introduced several tax benefits to create a conducive environment for the construction of fabrication (fab) facilities in recent years. Many large semiconductor manufacturing companies, such as TSMC (TSM), Intel (INTC), and GlobalFoundries, have announced plans to build fabs in China. As a result, China's spending on fab equipment is estimated to rise by 9.1 percent this year to US $5.3 billion. This presents new opportunities for U.S. manufacturers of major fab equipment, including photolithography equipment, electron beam lithography, and transmission electron microscopes.

2013-2015 China's Import of Electron Beam Machine (HS Code 845690)

Unit: USD millions

	2013	2014	2015
Total Imports	60	62.7	53
Imports from the US	27.2	31.9	25.3
U.S. Share of the Total Imports	45.3%	51%	47.7%

Source: UN Comtrade

Software Products

China offers lucrative incentives for the production and sale of software products domestically. Companies that sell software products developed in-house with a tax burden surpassing three percent of value-added tax are eligible for a tax refund. Many Chinese companies have thus been purchasing the software development technologies from foreign countries, producing the software locally, and utilizing these tax incentives to reduce their overall tax burden. Sales of software products in China exceeded RMB 136 billion in 2015, marking an 11.9 percent increase rate. However, U.S. software owners and developers seeking to export software products to China must register with the MIIT prior to licensing their products with Chinese companies. Software products (including imported and locally-produced versions of imported software) must be accompanied by complete documentation, including instructions in Chinese and user manuals. Exporters also require a China Compulsory Certification (CCC) safety mark when exporting and selling most IT products and components in China.

Chapter 1: Industry Report

Marine-related Industries

Overview

The marine industry has fueled China's economic growth over the past few years, enjoying 8.1 percent annual growth from 2011-2015. China's marine economy generated US$989 billion in 2015, an annual increase of seven percent, accounting for 9.6 percent of the nation's GDP. According to Xinhua news agency, 36.2 percent of the industry's total gross output was generated in the Bohai Sea region in north China, while the Yangtze River Delta contributed 28.5 percent. An estimated 35.9 million people are employed in China's marine sector. While the country's coastal tourism and recreational marine industry saw significant growth in 2015, the shipping industry remained sluggish.

Qingdao, a vital hub in China's Bohai Economic Rim, is the heart of the country's "blue economy" (i.e., the sum of ocean-related industries). By the end of the 12th Five-Year Plan (2015), Qingdao's marine industry output reached RMB 209.34 billion (US$32.14 billion), accounting for 22 percent of its total GDP. The rapid development of China's marine industry is largely due to the abundance of its marine resources – the country's marine energy resources alone are estimated to be 540 million kw. However, China's lack of supporting technology and professional personnel has greatly impaired the development of its blue economy. Chinese maritime authorities have thus pledged to facilitate cooperation with their overseas counterparts and have encouraged imports of advanced marine engineering equipment.

Sub-Sector Best Prospects

The marine industry includes transportation, travel/tourism, fisheries, oil and gas development, and engineering equipment manufacturing. While China encourages imports in all sub-sectors, the greatest trade opportunities lie in the export of ship parts, fishing vessels/equipment, yachts and marine bio-pharmaceuticals.

Ship Design Equipment and Spare Parts

Though long-established in China, the shipbuilding industry remains poorly equipped and inefficient. Firms operating within China's shipbuilding industry primarily manufacture ships, ship bodies and boats constructed from steel and aluminum. These are mainly intended for civil and military use rather than for entertainment or leisure purposes. In 2015, the U.S. exported US$23.8 million worth of ships (HS Code 89) to China, which was 2.5 percent of the country's total ship imports.

The greatest opportunities for U.S. exports to China's shipbuilding market include: raw materials, coating equipment and coating materials, computer aided design (CAD) software and associated technologies for ship design and construction, equipment maintenance, Global Positioning Systems (GPS), navigation and on-board computer systems, and cutting and welding technology.

2013-2015 China's Imports of CAD Equipment (Drafting tables and machines)

Unit: USD millions

	2013	2014	2015
Total imports	6,097,283	2,937,754	N/A
Imports from the U.S.	129,077	106,181	157,668
U.S. exports Y-o-Y growth rate	-8.7%	-17.7%	48.5%

Source: UN Comtrade, HS Code 901710

Following a decline in exports of CAD equipment to China, the U.S. exported US$157,668 of drafting and drawing machines to China in 2015, up approximately 50 percent compared to the previous year.

2013-2015 China's Imports of GPS (Radio navigational aid apparatus)

Unit: USD millions

	2013	2014	2015
Total imports	363.6	414.5	N/A
Imports from the U.S.	30.8	55.5	50.8
U.S. share of the total imports	8.4%	13.4%	N/A

Source: UN Comtrade, HS Code 852691

China only levies a two percent tariff rate on imported GPS devices originating from the U.S. This presents lucrative opportunities for U.S. GPS equipment manufacturers and exporters. Currently, U.S. made GPS equipment accounts for about 15 percent of China's total imports. This percentage is expected to increase based on the Information Technology Agreement (ITA) signed between the two countries, which will progressively reduce the tariff rates on GPS devices to zero from the original eight percent.

Recreational Fishing and Marine Industry

- Advanced fishing equipment

As China's traditional fishery sector suffers from overcapacity and coastal resources depletion, the Chinese government now views recreational fishing as the future of its fishing industry and an important means of providing alternative employment and income to fishermen. As a result, there is now an increasing demand for advanced fishing equipment. In 2015, US$4 million worth of fishing and hunting equipment (HS 9507) was exported from the U.S. to China, an increase of over 40 percent from 2014.

- Yachts, sports vessels and pleasure boats

China's yacht and pleasure boat industry is projected to have an annual growth of 30 percent to reach US$2.4 billion in 2018. The U.S. is ranked the world's third largest exporter of yachts and pleasure boats to China, with its export value totaling US$21.5 million in 2015.

2013-2015 China's Imports of Yachts and Pleasure Boats

Unit: USD millions

	2013	2014	2015
Total imports	269.9	151.1	N/A
Imports from the U.S.	29.4	23	21.4
U.S. share of the total imports	11%	15.2%	N/A

Source: UN Comtrade, HS Code 8903

Marine Biotechnology

Among China's 12 main marine industries, marine biotechnology is the fastest growing sector with a growth rate of 15.18 percent in 2014. Tianjin, one of the five national central cities of China, has developed a plan to promote marine economic development, and in particular marine bio-pharmaceuticals. According to the plan, the size of Tianjin's marine biopharmaceutical industry will reach RMB 20 billion (US$3.22 billion) by 2020. China's marine biopharmaceutical industry relies on its general biopharmaceutical industry to use marine resources to produce medicine. However, China lags far behind other countries in general biopharmaceutical technology development and also lacks advanced production equipment, which limits growth in this sector.

In 2014, the U.S. and China held a symposium for marine biopharmaceutical research and industry development, seeking to strengthen cooperation between the two countries in marine technology and pharmaceutical R&D. U.S. marine pharmaceutical producers have been quick to take advantage of the opportunities in the biopharmaceutical industry. Today, many American manufacturers of nutritional supplements, including NBTY (Nature's Bounty), Carlson Labs and GNC, are selling deep sea fish oil and spirulina products to Chinese consumers.

Chapter 1: Industry Report

Medical Devices

Overview

China is currently the world's second largest market for medical devices. In 2014, sales of medical devices grew 20.6 percent, totaling RMB 256 billion. Fueled by an increase in disposable income and a large, ageing population, the Chinese medical devices industry has experienced 20 percent annual growth since 2009.

The Chinese medical industry relies heavily on foreign medical supplies. The U.S., Germany and Japan are the primary sources of high-tech, high-priced medical equipment. Although there are several thousand local manufacturers of medical devices in China, most of the Chinese companies are small. Approximately 90 percent produce low-tech products such as syringes and thermometers. The majority of high-tech equipment, such as CT scanners, ultrasound and MRI equipment is imported.

Medical Devices vs Medical Equipment

The U.S. is home to two-thirds of the world's top 30 largest medical device manufacturers and is the top exporter of medical devices to China. In 2015, more than 12,000 enterprises were actively exporting medical devices to China, including Johnson & Johnson Medical, Medtronic Shanghai, Olympus Shanghai, and Roche Diagnostics China. According to the China Medical Pharmaceutical Material Association, imported medical devices typically sell for prices which are 50-100 percent higher than they would be in their origin countries, making China an attractive market for foreign producers of medical devices.

Foreign companies can, however, face significant barriers to the Chinese medical devices market. This is due in part to China's strict regulatory environment regarding foreign investment into its medical device industry. According to China's Guidance Catalogue for Foreign Investment, foreign investors are not allowed to set up wholly

foreign-owned medical institutions. Also, the classification system for medical devices in China differs significantly from that in the U.S. However, companies which export high-tech medical equipment to China may face fewer barriers and greater business opportunities than those who export medical devices.

The table below shows China's import of medical devices during the past three years:

China's Import of Medical Device (2013-2015)

Unit: USD millions

	2013	2014	2015
Total Imports	14,975	15,771	17,319
YoY Growth Rate	20.07%	5.32%	9.81%
Imports from the U.S.	3,972	4,291	4,715
U.S. Share of the Total Imports	26.5%	27.2%	27.2%

Source: China Customs, TradeStats Express (HS Code 9021 9018 3822 9019 9020 9022 902780 902750 902730 902700)

Shanghai remains the largest importer of medical device in China, with imports totaling RMB 22.57 billion (US$3,481 million) last year. The U.S. is Shanghai's top trading partner of medical devices, exporting US$1,087 million to the city in 2015. Major imports in the medical devices sector include endoscopes (number one), x-ray machines (over 70 percent growth compared to 2014), and kidney dialysis equipment (164 percent increase).

Selling to Chinese Hospitals

With 80 percent of the market share, hospitals are currently the largest distribution channel for medical devices in the Chinese market. By November 2016, China had established 28,751 hospitals, which are classed into three levels (tier-3, tier-2, and tier-1) based on hospital size and capability. Nearly 100 percent of medical devices are imported for use in tier-3 hospitals, and 66 percent for use in tier-2 hospitals.

Best-selling Prospects

In 2015, 43 categories of medical devices imported into China exceeded the value of US$100 million, including :

- General diagnostic equipment
- Ultrasound diagnostic equipment
- Rehabilitation appliances
- X-ray tomography instruments
- Endoscopes and artificial joints
- Orthopedic equipment
- Fracture equipment
- Medical accelerators
- Medical catheters and Magnetic Resonance Imaging (MRI) equipment.

China became the world's top importer of X-ray equipment in 2015. The U.S. exported US$ 677 million of goods under HS Code 9022 (i.e., X-ray Etc Apparatus, Tubes, Panels, and Screens) to China in 2015 – a one-year increase of 34.9 percent. Major companies engaged in exporting medical equipment include Philips Medical Systems, Siemens Healthcare, Siemens Ag Healthcare Sector, and Sirona Dental Systems Gmbh. Additionally, in 2013, diagnostic imaging equipment accounted for 40 percent of China's medical devices market and has been growing at a rate of over 30 percent per annum for the past three years.

Chapter 1: Industry Report

Nuclear Power Industry

Overview

China is the world's largest nuclear power market. As of July 2016, China has 34 operational nuclear power reactors with 20 under construction. More than 30 of the country's existing reactors were built with reliance on foreign design and technology. In November 2014, the State Council published the "Energy Development Strategy Action Plan (2014-2020)", which confirmed China's installed nuclear power capacity will reach 58 gigawatts (GW) compared to 28.3 GW at the end of 2015, and capacity under construction will exceed 30 GW by 2020. The plan calls for the launch of new nuclear power projects on China's east coast and for feasibility studies on inland nuclear plants. China is also aiming to build over 100 new reactors by 2030 in an effort to ease dependence on fossil fuels and become a major competitor in the global nuclear industry. Over the next three years, six to eight nuclear reactors are to be approved annually.

The country's nuclear power market is dominated by three state-owned nuclear operators: China General Nuclear Power Group (CGN), China National Nuclear Corporation (CNNC), and State Power Investment Corporation (SPI). CGN is currently the largest producer of nuclear power in China, with a 44 percent market share. This is followed by CNNC with 18 percent and CPI with 10 percent. The remaining 28 percent is held by foreign firms including U.S.-based Westinghouse Electric and French firm Areva SA. In a recent move to compete with global nuclear power companies, CNNC and CGN jointly designed and launched the Hualong One reactor (HPR1000), marking a turnaround for China and its domestic nuclear-power industry. The domestic Chinese reactor has similar specifications to other so-called "Third Generation Reactors" such as Westinghouse's AP1000, and is equipped with automatic, passive safety systems.

USA-China Nuclear Cooperation Agreement

The U.S. approved the renewal of its bilateral nuclear cooperation agreement (known as the "123 agreement") with China in 2015. The 1985 agreement provides a comprehensive framework for peaceful nuclear cooperation between the two countries, permitting the transfer of material, equipment (including reactors), components, information, and technology for nuclear research and power production. The direct economic benefit to the U.S. from the renewed agreement could reach up to US $204 billion. It is also expected to boost the U.S. presence in the Chinese nuclear energy market as well as increase China's adoption of advanced U.S. technology.

Trade Opportunities

Nuclear Fuel/Uranium

China is stepping up efforts to become self-sufficient in nuclear fuel. However, the country still relies heavily on foreign suppliers to feed its reactors. In order to meet increased demand, the CNNC set up a subsidiary, China Nuclear International Uranium Corporation (SinoU), to more effectively acquire equity in uranium resources internationally. According to statistics released by the World Nuclear Association, around 95 percent of China's natural uranium imports come from six countries: Kazakhstan, Uzbekistan, Canada, Namibia, Niger, and Australia. Ux Consulting, a nuclear fuel price reporter, has said that between 2009 and 2014, China imported over 115,000 tU (tonnes of uranium), and imported a total of 25,000 tU in 2014 alone. Annual consumption is currently about 8000 tU, indicating that most uranium imports are stockpiled. Furthermore, the Shanghai Nuclear Power Office estimated that, assuming a total of 58 operating reactors, China's uranium demand would reach 11,000 tU in 2020, about 18,500 tU for 100 reactors in 2025, and 24,000 tU for 130 reactors in 2030.

Although not a large exporter of natural uranium resources, the United States still exported US $112 million of uranium (enriched U235) to China in 2015, accounting for around 30 percent of China's total imports of enriched uranium. This presents an opportunity for U.S. companies specializing in uranium concentration and processing technology, diffusion techniques, and centrifuge techniques.

Nuclear Reactors and Components

Since China's self-developed third generation Hualong One nuclear reactor has yet to pass final international safety review, nuclear reactors originating from the U.S. and

other mature Western markets are still considered more reliable in the mainstream Chinese market. In addition, about 14 percent of the manufacturing equipment and parts used to build the Hualong One reactor are purchased from foreign suppliers. Last year, China imported US $15.2 million of nuclear reactor parts from the United States – approximately 15 percent of its total imports of these parts worldwide. The demand for small modular reactors (50 or 100MW in output) designed for alternative nuclear applications is also on the rise.

2013-2015 China's Import of Nuclear Reactors, Boilers, and Machinery (HS Code 84)

Unit: USD millions

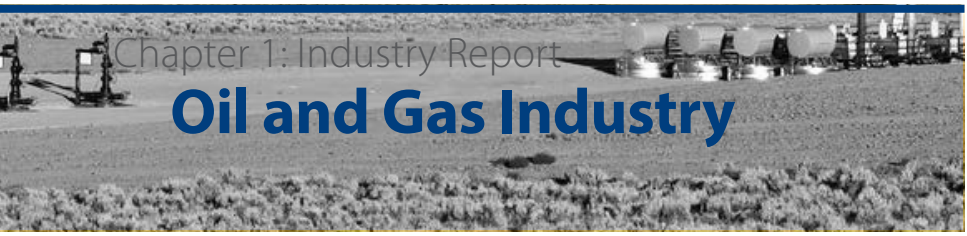
	2013	2014	2015
Total Import	170.6	179.4	157.2
Import from the U.S.	15.5	16.8	15.9
U.S. Share of the Total Import	9.09%	9.4%	10.1%

Source: UN Comtrade

Reactor technology

The Chinese government has emphasized the development of technology used in large pressurized water reactors (including the AP1000 and CAP1400 designs), high temperature gas-cooled reactors (HTRs), and fast reactors. Looking ahead, China will start up 20 floating nuclear plants next year, as well as initiate several other advanced-reactor projects, such as a molten-salt reactor fueled by thorium rather than uranium, turning China into a test bed for innovative nuclear power technologies. These reactor initiatives are launched in an attempt to eliminate nuclear waste, a problem which none of the existing or to-be-built reactors in China have yet addressed. This attempt offers lucrative opportunities for U.S. technology firms that have expertise in graphite coating materials, water reactor technology, and spent fuel recycling technology.

Nuclear-related products and technology are included in the U.S. export control regime, meaning that exporters must apply to several U.S. government agencies (including the Department of Energy and Nuclear Regulatory Commission) prior to selling to China's nuclear industry. A complete guide to the export of civil nuclear technology and services can be found here.



Chapter 1: Industry Report

Oil and Gas Industry

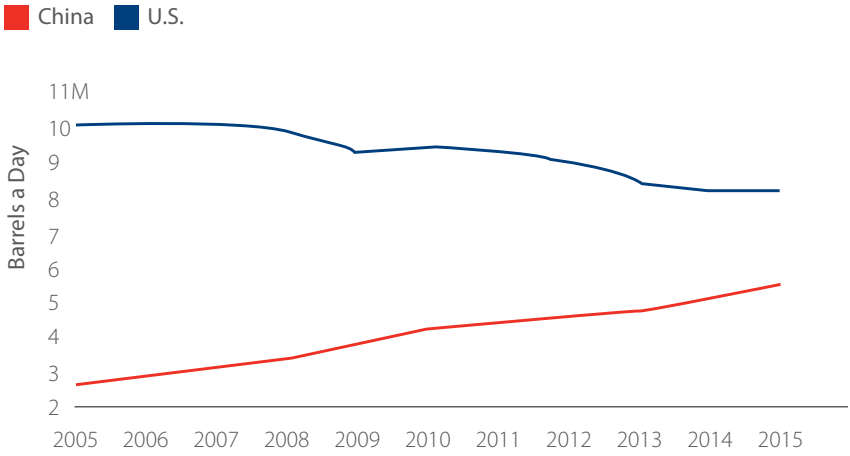
Overview

Oil

China is predicted to surpass the United States to become the world's largest oil consumer and importer in 2016, according to China International United Petroleum & Chemicals Co., Ltd. (Unipec) – a subsidiary of China Petroleum & Chemical (Sinopec) and China's largest international trade company. This largely owes to the decline in China's domestic crude oil production and, simultaneously, the country's rising oil demand. Though still the world's fourth-largest oil producer, China's domestic crude oil production fell 4.6 percent during the first half of 2016 – its lowest level since 2010. Net oil-product exports fell by almost one-third from April to 810,000 tons.

China's Oil Binge

Aisan nation seen becoming top crude importer as U.S. relies more on domestic output



Source: U.S. Energy Information Administration, China Customs General Administration
Note: China data through Feb. 2016, U.S. through Dec. 2015

Meanwhile, the International Energy Agency (IEA) expects China's oil demand to grow at 1.2 percent annually over the next 25 years. Unipec also predicted China's crude oil imports to reach 7.5 million barrels in 2016. China will therefore have to rely heavily on imports to bridge the gap between domestic demand and domestic production.

Gas Industry

Natural gas is China's fastest growing major fuel. In 2015, China's consumption of natural gas grew by 3.7 percent, reaching 191 billion cubic meters – the smallest growth in the past decade. Out of this, 62.4 billion cubic meters were imported from foreign countries, accounting for 32.7 percent of total consumption. During the first half of this year, China's natural gas output reached 69 billion cubic meters – a 4.1 percent growth rate increase from the previous year. It is predicted that Chinese domestic demand for natural gas will exceed 200 billion cubic meters by the end of 2016, accounting for 6.4 percent of the country's total energy consumption. The Chinese government expects natural gas to provide 10 percent of the country's energy by the end of the 13th Five-year Plan (2016-2020).

China's oil and gas markets are dominated by four major oil companies: PetroChina, Sinopec, China National Offshore Oil Corporation (CNOOC), and Yanchang Petroleum (a Shaanxi Provincial-level state-owned company). In 2014, PetroChina controlled 54 percent of China's total crude refining capacity and 73 percent of the country's natural gas production market, while Sinopec accounted for 20 percent of the crude refining market and 16 percent of the natural gas market. However, these large state-owned oil companies are now struggling with low oil prices and are facing fierce competition from smaller private refineries.

Trade Opportunities

Oil: Loosened Import Regulations on Independent Refineries

In February 2015, the Chinese government relaxed import restrictions on its independent oil refineries and processors (known as "teapots"), allowing them to import their supplies from overseas rather than from state-owned oil and gas companies. Since then, China's crude imports have been largely driven by these small refining companies, who only obtained their import licenses from the government last year. This policy was implemented as part of the Chinese government's plan to overhaul its domestic energy industry, presenting huge trade opportunities for U.S. crude exporters. In 2015, China imported US $20.6 million of oil from bituminous minerals and crude (HS Code 2709) from the United States.

2013-2015 China's Import of Oils Petroleum, Bituminous, Distillates, Except Crude (HS Code 2710)

Unit: USD millions

	2013	2014	2015
Total Imports	32,025.7	23,450	14,368
Imports from the U.S.	403.8	413.4	447.9
U.S. Share of the Total Imports	1.3%	1.76%	3.1%

Source: UN Comtrade

Increased purchases by these teapot refineries caused a backup of tankers at the port of Qingdao, one of the largest cities in eastern Shandong Province and home to many independent processors. Imports through Qingdao climbed to a record high in March of this year, accounting for approximately 30 percent of China's total imports. Consequently, the production output of these teapots has been continuously increasing, potentially ending the era of China's oil and gas market being 100 percent state-owned.

Natural Gas and Petroleum Gas

China's need for imported gas is rising. According to a report released by PetroChina, China's imports of natural gas are forecast to grow 10.6 percent in 2016 to 69 billion cubic meters. In 2015, the United States exported US $20 million of liquefied natural

2013-2015 China's Import of Petroleum Gases (HS Code 2711)

Unit: USD millions

	2013	2014	2015
Total Imports	24,726.9	30,182	24,980
Imports from the U.S.	91	688.7	1,597.3
U.S. Share of the Total Imports	0.4%	2.3%	6.4%

Source: UN Comtrade

gas (HS Code 271111) and US $13,012 of natural gas in gaseous states (HS Code 271121) to China.

Oil and Gas Equipment

China's oil and gas equipment manufacturing market is monopolized by Chinese domestic companies, in particular the lower end market. China's state-owned enterprises control approximately 66 percent of the market for well-drilling equipment. However, China's oil and shale gas producers face challenges presented by China's complex topography and a lack of advanced technology in exploitation equipment. Thus, U.S. companies that specialize in drilling, extraction equipment, pipeline monitoring systems, and oil and gas separators may find lucrative opportunities. U.S. firms are also encouraged to provide operational services to Chinese shale gas developers. Notably, the U.S. is China's biggest supplier of casing and high-tech oil and gas drilling equipment.

2013-2015 China's Import of Oil & Gas Drilling Casing > 406mm (HS Code 730520)

Unit: USD millions

	2013	2014	2015
Total Imports	6.6	5.0	2.6
Imports from the U.S.	N/A	1.6	1.7
U.S. Share of the Total Imports	N/A	32%	65.4%

Source: UN Comtrade

Additionally, demand for petroleum products, materials derived from crude oil (including transportation fuels), fuel oils for heating and electricity generation, as well as other feedstocks used to make chemicals and synthetic materials are on the rise in China, offering new sales opportunities to U.S. oil refineries.

Chapter 1: Industry Report

Rail and Urban Rail

Overview

The rail and urban rail industries in China have grown quickly within the last decade. However, both central and local governments have great ambitions for further expansion of the existing system. Within the next five years railways and urban rail transit systems will reach smaller cities, linking more and more areas together. Furthermore, existing rails in larger cities, like Beijing and Shanghai, expect to expand further out into the neighboring regions.

The years from 2016 to 2020 may see even faster development. That development, nonetheless, will require more advanced technologies and knowledge, creating opportunities for U.S. companies that possess one or both.

Rail Industry

As part of China's strategic development, the railway industry has benefited from government support and received billions of investment dollars within the past few years. The growth of the industry continues to be fast-paced. In 2015, RMB 823.8 billion (US$125.6 billion) was spent on railway construction, with 9,531 kilometers opening for the transport of goods and passengers. Of this amount, roughly one-third of new lines were for high-speed trains. At the end of 2015, total railway length reached 121,000 kilometers; total high-speed railway length reached 19,000 kilometers, equivalent to 60 percent of the world total.

	2013	2014	2015
Total Fixed-Asset Investment (RMB billions)	665.7	808.8	823.8
New lines put into operation (kilometers)	5,586	6,623	9,531
Number of Passengers (billions)	2.11	2.30	2.53
Amount of freight transports (tons billions)	3.97	3.81	3.36

The growth of the industry in 2015 is a continuation of preferential government policies that focused on railway expansion. During the 12th Five-Year Plan (2011-2015), total fixed-asset investment was RMB 3.58 trillion, and 30,500 kilometers of railways was created.

The industry is expected to continue its upward trajectory from 2016 to 2020 during the 13th Five-Year Plan. In 2016, the government plans to invest RMB 800 billion in railways, particularly in lesser developed regions in central and western China. Over the course of the 13th Five-Year Plan, China plans to increase the length of high-speed railways to 30,000 kilometers and link together more than 80 percent of large cities.

Additionally, China is looking to expand its high-speed train operations and technology outside of its borders. The China-Laos railway, China-Thailand railway, and the Serbian section of the Serbia-Hungary railway have already started. Another project to link Jakarta and Bandung in Indonesia is set to start as well. China is focused on improving technology in train manufacturing. Newer models of the high-speed trains reach operating speeds of 350 kilometers per hour, and are likely to be used in international projects.

Urban Rail Industry

Mirroring the growth of railways in China, the urban rail industry has also grown substantially. From 2002 to 2014, the number of urban rail lines in China rose from five to 22. Within the past decade, the number of cities with urban rail transit grew from 17 to 83, the length of lines grew at an annual average of 245.4 kilometers to reach over 2,500 kilometers in total, and there are now approximately 1,770 stations.

However, the development of urban rail lines is unbalanced across the country. Some cities have higher levels of operations, whereas others have very little in place. For example, Shanghai has the biggest urban rail system with 588 kilometers, 14 lines and 364 stops. On the other hand, Zhengzhou and Harbin have less than 30 kilometers.

The industry still has large space to grow. By the first half of 2015, 39 cities had received approval from the central government for urban rail construction. By 2020, it is estimated that urban rail transit will enter about 50 new cities, and total operating length will reach 6,000 to 7,000 kilometers. Larger cities with lines already in place are also looking to expand.

Trade Prospects

By 2020, China will need to have built 30,000 kilometers of railway and 7,000 kilometers of urban rail. For U.S. exporters, there are opportunities in various areas of the industry, including manufacturing, design, construction and operations. The U.S., a country with a rail network of 225,000 kilometers and a history of freight rail operations, has the industry know-how and expertise to share. The main areas of need in China is high-quality materials for train and rail parts, as well as technologies for communications, information technology (IT) and train maintenance. Chinese urban rail demands are also quickly scaling up. Many cities are either implementing their first lines or switching from a single line to multiple lines. Management of network-level rail systems will require comprehensive operations management technologies. This includes models that can estimate passenger flows and network operations conditions.

Other areas for cooperation include:

Vulcanized Rubber

China is the world's biggest user of rubber. Vulcanized, unhardened rubber can be made into a rubber pad, suspension, pumps, air-filled tires and more. Vulcanized rubber has various uses for trains, and will become increasingly necessary as China expands its train systems.

2013-2015 China's Import of Articles of Vulcanized Rubber, Except Hard Rubber (HS Code 401699)

Unit: USD millions

	2013	2014	2015
Total Import	755.5	828.1	731.2
Import from the U.S.	77.7	94.6	102.1
Share of the U.S. Export	10.3%	11.4%	13.9%

Source: UN Comtrade

Needle roller bearings

Bearings are used for many different purposes in railway vehicles. They can be used as main parts of axleboxes and drive systems, including traction motors and suspension units. They may also be used for gearboxes, shock absorbers, tilting mechanisms, doors and more. Needle roller bearings are the smallest and lightest type of bearing. As such, they can be used for projects which require lighter weight and space. They are also generally more affordable than other types of bearings. These will be necessary for future development of high-speed train projects in China.

2013-2015 China's Import of Needle Roller Bearings (HS Code 848291)

Unit: USD millions

	2013	2014	2015
Total Import	139.8	166.2	162.1
Import from the U.S.	9.1	12.5	18.9
Share of the U.S. Export	6.5%	7.5%	11.7%

Source: UN Comtrade

Electronic Display Indicator Panels

The high-speed trains and urban railways of China all require electronic display panels with station name, destination, departure and arrival times, etc. As technology

requirements increase, trains will also require high-quality indicator panels for the control car and the system management. In 2015, U.S. exports to China of this product grew 10.7 percent, and market share grew 52 percent.

2013-2015 China's Import of Indicator panels incorporating electronic displays (HS Code 853120)

Unit: USD millions

	2013	2014	2015
Total Import	213.9	297.5	218.8
Import from the U.S.	6.6	7.5	8.3
Share of the U.S. Export	3.1%	2.5%	3.8%

Source: UN Comtrade

Other products in the Chinese market include, but are not limited to, brake systems, compressors, radiators and other parts; wheel and rail optimization; wheel and rail friction control and lubrication; new track design and components; track maintenance and monitoring technologies; communication, signaling and IT systems; energy conservation and environmental protection; security technology and equipment; and noise control.

American Rail Working Group (ARWG)

The American Rail Working Group (ARWG) was launched by the U.S. Commercial Section in Beijing (USFCS Beijing) in 2009 to facilitate and support public-private cooperation in the rail and urban rail industries. 20 U.S. companies are members of the ARWG, and have partnerships with railway and urban rail organizations in China. ARWG has regular meetings in Beijing, as well as industry road shows and seminars for members. New members are welcome. For enquiries, please contact the U.S. Embassy Commercial Section in Beijing. Email: aiqun.peng@trade.gov.

Chapter 1: Industry Report

Safety and Security Equipment Industry

Overview

In 2014, China overtook the U.S. as the world's largest safety and security products market, worth more than RMB 430 billion. This is an annual increase of 10.8 percent. The estimated market scale of China's safety and security industry in 2015 was RMB 500 billion. Driven by internal security challenges, by the end of 2014, about 27,000 enterprises had been established to engage in China's HLS & Public Safety industry, specifically 14,300 in security projects and management, 9,400 in product manufacturing and distribution, and 3,300 in alarms and warning system management.

In China, safety and security products are primarily used in safe city construction (17 percent), in the financial industry (12 percent), in smart traffic design (11 percent), and for civilian purposes (11 percent).

Multinational corporations such as IBM, FLIR, GE Security Asia, Honeywell Security Group, and Bosch Security account for roughly 35 percent of the total Chinese market for HLS & Public Safety products and services.

2012-2020 Projected Growth of China's Safety and Security Market

Unit: RMB 100 Million

	2012	2013	2014	2015*	2016*	2017*	2018*	2019*	2020*
Total Market Size	3,235	3,882	4,300	4,945	5,687	6,540	7,521	8,649	9,946
Growth Rate	20%	20%	10.8%	15%	15%	15%	15%	15%	15%

Source: Qianzhan.com

**Estimated*

Aviation and Railway Security

The Chinese aviation safety market is booming – two thirds of the world's newest airports are in China. China's 13th Five Year Plan (2016-2020) aims to construct more than 50 civil airports and additional small airports in every county-level city, providing RMB 56 billion in business opportunities for security products companies. From the government investment perspective, video monitoring systems (including warning systems) make up 56 percent of total investment, followed by security checkpoints (20 percent), entrance guard systems (five percent), and others including inspection control and fire protection (10 percent).

Airport security screening technology, particularly terahertz (THz) technology, presents the most lucrative opportunities for foreign exporters. THz radiation is able to penetrate fabrics and plastics and therefore can be used to remotely detect concealed weapons and explosives. However, THz imaging has long been a technology only acquired by Western countries, and it was not until 2014 that China introduced the nation's first THz scanner. Until this technology market becomes more mature in China, foreign companies will remain the most common source for THz scanners used in China.

Additionally, prior to the 2008 Olympic Games in Beijing, China began subway station security checks and has continued to install metal detectors and X-ray scanners in subway stations across the country ever since. The Chinese government now intends to implement airport-style security throughout China's subway system, which consists of nearly 200 stations, providing a market for security checkpoint equipment.

Best-selling Products

China's safety and security market consists of five major products, namely, physical security products (33 percent), surveillance camera and video monitoring (58 percent), building intercom systems (13 percent), and burglar alarm systems (15 percent). As the majority of the low-end safety products manufacturing market is occupied by small Chinese companies, much of the safety and security demand will be for high-tech equipment, such as digital technology, entrance guard communication systems, network technology for inspection control and monitoring systems and warning systems.

X-ray Security Scanners

X-ray security scanners are widely used in various types of security checks and customs inspections and are one of the best-selling security products in China. In particular, low-energy X-ray security scanners are in high demand. In 2011, China imposed anti-dumping duties on the import of X-ray scanners originating from the EU, ranging from 33.5 percent to 71.8 percent. This effectively closed the Chinese market to European security scanner manufacturers and created significant export opportunities for U.S. manufacturers. Although China removed the additional EU import duties in 2014, the import market remains dominated by U.S. products. For example, in 2015, X-ray scanners imported from the U.S. made up 35 percent of all X-ray scanners imported into China.

2013-2015 China's Import of X-ray Scanners (HS Code 902212 Computed tomography appa)

Unit: USD millions

	2013	2014	2015
Total Import	800.9	629.5	596.9
Import from the U.S.	321.5	159	197.4
Share of the U.S. Export	40.1%	25.3%	33.1%

Source: UN Comtrade

Surveillance Cameras and Video Monitoring Systems

Surveillance cameras and smart video monitoring systems are the most developed and the fastest growing sector of the safety and security industry in China (growing 26 percent in 2014), accounting for more than 50 percent of the total consumer market. The market is currently dominated by foreign-based companies and is projected to grow 12 percent annually to US$23.6 billion in the next five years. This increase is largely due to the Chinese government's plan to create "Safe Cities" and enhance civilian security. In 2015, the U.S. exported US$67.7 million worth of surveillance cameras to China, an increase of 3.8 percent from 2014.

Fire Protection Equipment and Fire Alarms

Despite strong domestic competition in fire alarms and fire protection equipment manufacturing, the U.S. exported US$11.9 million of burglar and fire alarms to China in 2015, accounting for 17 percent of China's total imports of fire equipment. However, exporters should note that all imported fire protection equipment must receive safety certification from China's Fire Bureau prior to importation.

2013-2015 China's Import of Fire Alarms (HS Code 853220 Burglar or fire alarms and similar apparatus)

Unit: USD millions

	2013	2014	2015
Total Import	74.7	77.4	70.1
Import from the U.S.	8.2	9.5	11.9
Share of the U.S. Export	11%	12.3%	17%

Source: UN Comtrade

Other top-selling products in the Chinese market include intelligent warning systems, advanced detection equipment and inspection control systems, the latter of which is monopolized by Japanese products made by Panasonic, Sony, JVC and Sanyo. Exporters may also find trade opportunities in entrance guard communications, which grew 15 percent in 2014 to a market size of RMB 25 billion. U.S. companies BII and HID, together with UK company TDSI and Israeli company DDS, make up the majority share of the Chinese communication systems market.

Chapter 1: Industry Report

Travel and Tourism

Overview

In 2012, China became the world's largest source of international tourists and tourism-related spending. Chinese tourism continues to grow at an impressive rate. In 2015, more than 120 million trips were made by Chinese tourists, up 12 percent from 2014. Chinese tourists made 10 percent of all international trips worldwide, spending US$215 billion on their travels. The market is rapidly growing and is projected to become a US$422 billion industry by 2020.

Chinese travelers are increasingly venturing beyond their neighboring Asian countries to more distant destinations. The U.S. welcomed a record 2.19 million Chinese visitors in 2014 and an estimated 2.6 million in 2015. While this represents less than two percent of Chinese tourists worldwide, it is over five times more than the 397,000 who visited in 2007. Although China ranked just sixth for visitors to the U.S. in 2014, Chinese tourists spent more than those from any other country (excluding Canada), totalling US$24 billion. Chinese spending on tourism continues to grow rapidly, as Chinese travelers accounted for 13 percent of all tourism-related expenditures in the U.S. in 2015 – over four times more than a decade before.

In 2015, 57 percent of the U.S. service industry's exports to China were tourism related, representing 15 percent of total exports to the U.S. By 2020, the National Travel and Tourism Office projects that Chinese visitors to the U.S. will outnumber those of all other countries besides Canada and Mexico, growing at a rate of 129 percent, compared to 47 percent for India, 39 percent for Taiwan, and 36 percent for South Korea, reflecting significant projected growth in an already robust market.

Top International Arrivals to U.S. in 2014

2014 Rank	Area/Country of Residence	Annual 2014	% change 2013-2014
--	Total Arrivals	75,011,080	7.2%
--	Overseas *	34,938,207	9.0%
1	Canada	23,003,055	-1.6%
2	Mexico	17,069,818	17.3%
3	United Kingdom	4,149,129	8.2%
4	Japan	3,620,224	-3.0%
5	Brazil	2,263,996	9.9%
6	China (PRC)	2,189,781	21.2%

Source: U.S. Department of Commerce, National Travel and Tourism Office

** Overseas is all countries excluding Canada and Mexico*

Government Promotion

Keenly aware of the economic opportunities presented by the lucrative Chinese market, the U.S. government implemented a series of programs to facilitate Chinese travel to the U.S. In 2014, the U.S. and China both agreed to offer tourist and business visas lasting one to 10 years and student visas of one to five years, simplifying travel between the two countries. Previously, Chinese travelers needed to apply for tourist visas annually, adding additional inconvenience and expense, as a single

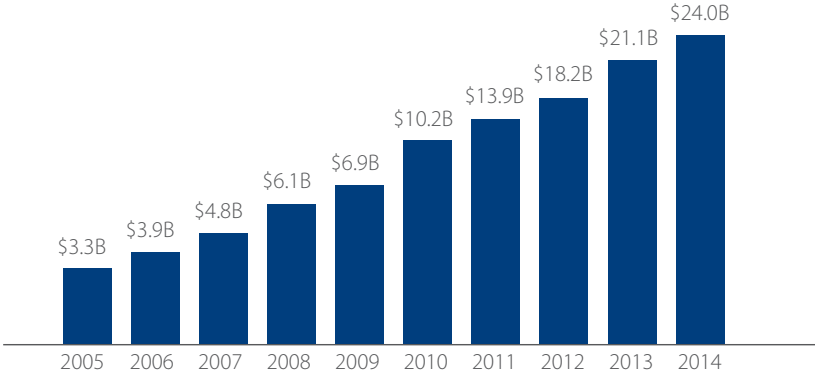
Top International Markets for U.S. Travel and Tourism Exports in 2014

2014 Rank	Area/Country of Residence	Annual 2014, in Millions of USD	% change 2013-2014
--	Total Tourism-Related Exports	$220,757	2.9%
--	Overseas *	34,938,207	4.0%
1	Canada	$26,282	-3.8%
2	China (PRC)	$24,019	13.6%
3	Mexico	$18,665	3.0%
4	Japan	$17,676	0.3%
5	United Kingdom	$13,496	2.3%
6	Brazil	$13,429	8.1%
7	India	$9,842	9.7%
8	South Korea	$7,799	10.8%
9	Germany	$7,360	1.7%
10	Australia	$6,180	-9.3%

Source: U.S. Department of Commerce, National Travel and Tourism Office

** Overseas is all countries excluding Canada and Mexico*

Chinese Visitor Spending in the United States (2005-2014)



Source: U.S. Department of Commerce, National Travel and Tourism Office

visa could cost up to US$160. The easing of visa requirements has contributed to the rise of Chinese tourists in recent years, as is also the case with several other countries, including Japan, South Korea, and France. Following this agreement, the two countries announced that 2016 would be the U.S.-China Tourism Year, featuring a series of efforts by the U.S. Department of Commerce, Brand USA, the U.S. Travel Association, the China National Tourism Administration, and other organizations to promote tourism between the two countries.

Annual 2014 U.S. Travel and Tourism Balance of Trade

Travel & Passenger Air Transport Receipts (Exports)1

[Millions, USD]

Country/Region	Receipts (Exports)			
	Travel (all purposes)2,3	Passenger Air Transport2	Total Travel and Tourism	% Change, 2013-2014
Total (All Countries)	$177,241	$43,516	$220,757	3%
Asia and Pacific	$66,27	$11,135	$77,412	7%
China	$21,499	$2,520	$24,019	14%
Japan	$12,116	$5,560	$17,676	0%
India	$8,131	$1,711	$9,842	10%
Korea, Republic of	$7,633	$166	$7,799	11%
Australia	$5,367	$813	$6,180	-9%
Taiwan	$2,098	$9	$2,107	0%
Philippines	$1,018	$81	$1,099	6%
New Zealand	$1,036	-	$1,036	6%
Singapore	$922	$8	$930	-5%
Hong Kong	$781	$122	$903	0%
Indonesia	$876	-	$876	9%
Thailand	$729	$9	$738	6%
Malaysia	$697	-	$697	4%

Source: U.S. Department of Commerce, National Travel and Tourism Office from the Bureau of Economic Analysis, October 2015.

Demographics

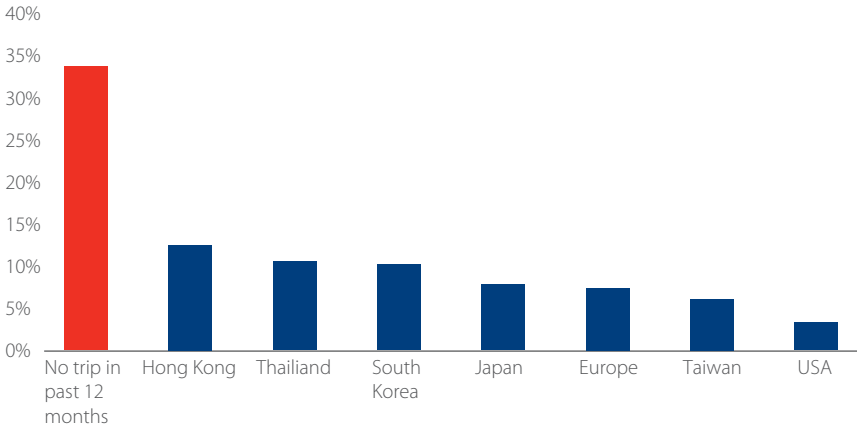
The typical Chinese visitor to the U.S. is far wealthier than the average Chinese citizen, and young wealthy Chinese make up a significant percentage of total visitors. Half of international Chinese travelers are 15-29 years old, while 37 percent are aged 30-44, and 10 percent are aged 45-59. There is a sizeable gender gap in outbound tourists, as 64 percent of Chinese traveling abroad are women. Travelers visiting the U.S. are fairly affluent, as the median household income of Chinese visitors to the U.S. in 2014 was nearly US$50,000 and the average income approached US$80,000. In contrast, the average household income of all international Chinese tourists just one year earlier was US$21,000. The wealthy cities of Beijing, Shanghai, and Guangzhou account for over 75 percent of all Chinese visitors to the U.S. However, the rising incomes and deepening global connectivity of China's lower tier cities are increasing the number of tourists hailing from the country's other regions. Currently only four percent of Chinese citizens have passports, a number sure to grow as more areas benefit from the country's economic growth.

Travel Preferences

China's Asian neighbors are the most popular foreign destinations for Chinese tourists, led by South Korea, Thailand, Hong Kong, Japan, and Taiwan. Europe is the most popular region outside of Asia, followed by the U.S. However, a survey by

Chinese Travelers' Top Destinations

Percent of travelers polled in survey of 1,019 people



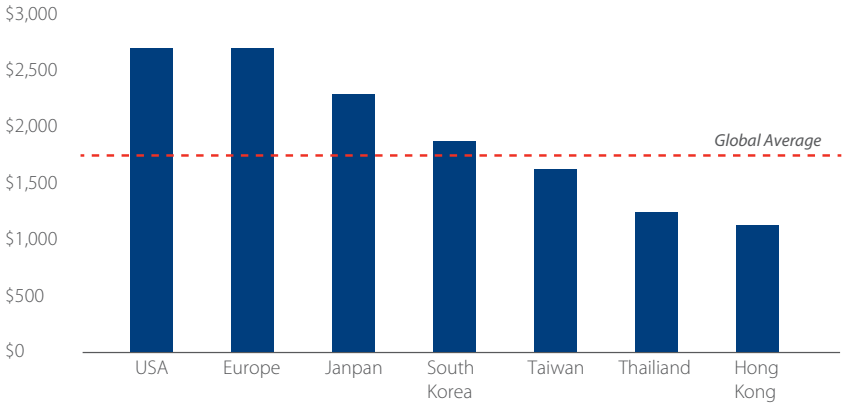
Travelzoo found that the U.S. is second only to Japan as the location Chinese tourists would most like to visit, indicating greater potential for expansion.

Roughly one-third of Chinese tourists choose their destination based shopping opportunities, giving nearby locations an advantage for attracting those who are traveling primarily to purchase foreign products. As such, promoting luxury travel incorporating shopping, fine dining, and related leisure activities is an effective way to attract upscale tourists. On average, Chinese tourists spend over US$2,500 on retail goods during each trip to the U.S., nearly US$1,000 more than the global average. The most sought-after products for Chinese tourists are clothing, footwear, cosmetics, and electronics.

Although shopping is an important aspect of Chinese tourists' experience, it is not their only travel purpose. Popular leisure activities include sightseeing, fine dining, visiting national parks and monuments, and touring small towns and the countryside. They also visit friends or relatives, attend school, and travel for business purposes such as attending conventions, conferences, and trade shows.
Forty percent of Chinese tourists report visiting a national park during their stay in the U.S. The West Coast is the most frequented region, capturing 50 percent of Chinese tourist spending in 2014, while the Mid-Atlantic collected 33 percent. Chinese tourists – particularly young ones – are increasingly interested in traveling off the beaten path and exploring less frequented locations, demonstrating a growing interest in visiting unique destinations and experiences.

Chinese Travelers' Retail Spending by Destination

Per capita spending each trip, in U.S dollars



Chapter 2

City Reports

Chapter 2: City Report

Beijing

Beijing is the capital of the People's Republic of China and the country's political and cultural center. Home to more than 21 million inhabitants and occupying an area of 6,500 square miles, Beijing is classified as a separate municipality, accorded the same status and responsibilities as a province.

All of China looks to Beijing as model city for economic development. Economic change in the past 20 years has transformed Beijing from an ancient political and cultural capital to a robust economic and financial marketplace. These changes offer a multitude of opportunities for foreign exporters. Beijing's political emphasis on transitioning from a manufacturing and industrial-based economy to an entrepreneurial, technology-based economy is also fueling the entire Chinese economy.

Rapid economic changes and development have also created certain disadvantages such as increased traffic congestion and greater air pollution, issues the central government is working to address. Beijing is serviced principally by the Beijing Capital International Airport but also has numerous rail and highway links in and out of the city. High speed rail is Beijing's predominant mode of transportation into and out of the city, with a trip to Shanghai, for example, taking only 5 hours.

Economy and Industry

Beijing's economy is dominated by the services industry, which accounts for 76.7% of its GDP. The three biggest service sectors are financial services (14.5%), wholesale trade and retail sales (12.2%) and information technology services (9%). Beijing is encouraging the development of its modern services sectors, including outsourcing and creative industries. In an effort to better compete with world suppliers, Beijing aims to expand its high-tech industries in the areas of electronics, IT, biological engineering, pharmaceuticals, and telecommunications. Efforts are paying off. Beijing now ranks first in the world for growth in the technological sector. For

example, in Zhongguancun District, 49 new startups are established every day. In 2014, over 660,000 patents were established.

Other industries in Beijing include tourism, textiles/garments and household appliances. Industrial production remains an important part of the economy and is dominated by the transportation, chemical, machinery, and metallurgy industries.

Export Opportunities

High Tech Industry

As Chinese companies strive to be more competitive on the world stage and improve their quality image, Chinese companies may start to choose foreign suppliers over cheaper, lower quality Chinese parts. According to the U.S. Department of Commerce's International Trade Administration, China is the largest and fastest growing import market for U.S. semiconductors and the third largest and fastest growing market for U.S. semiconductor equipment.

U.S. companies may find opportunities beyond the traditional information technology industries and may wish to consider other subsectors such as smart governance, intelligent transportation and smart cites. In April 2015, Chinese and U.S. Government leaders launched a Smart Cities-Smart Growth trade mission to Beijing, Shanghai, and Guangzhou to expand opportunities for U.S. companies in these fast growing sub-sectors.

Wholesale Trade and Retail Industries

Wholesale trade and retail industries accounted for 12.2% of the service economy and benefitted greatly from Beijing's rising middle class. This newfound confidence is changing Chinese shopping habits, and Chinese consumers are increasingly seeking out foreign goods.

Cross-border online trading is skyrocketing. According to the China E-Commerce Research Center, in 2014 cross-border trading reached 4.2 trillion yuan (USD $657 billion), and will reach 5.5 trillion (USD $861 billion) by the end of 2015. Foreign companies are taking advantage of this trend with websites such as Amazon, Alibaba's Tmall Global, Walmart's Yihoudian, and JD Worldwide, the largest platform in Beijing and northern China. U.S. companies no longer need to set up physical operations in-country. They can now easily reach Chinese customers online. Chinese

government e-commerce pilot zones facilitate the importation/customs process, making it easier for U.S. goods to reach Chinese consumers. Although e-commerce in China is rapidly expanding, it remains a highly competitive market with many platforms to choose from and numerous pitfalls. New entrants should carefully research Chinese government rules and requirements, including participation costs of various platforms to evaluate the most appropriate business model.

Food and Beverage Industry

According to a study conducted by The Economist, China is the second-fastest growing food and beverage market in Asia, with an average annual growth rate of 30% in 2009-2014. As a result, Beijing's food industry wages have increased.

Food scandals and distrust continue to plague China's domestic food industry, making foreign food products particularly appealing. Rising incomes in Beijing are giving consumers the opportunity to be more selective in what they purchase. In particular, demand for infant formula, dairy products, and organic food has increased dramatically.

Many companies are taking advantage of the increasing demand for foreign food products, so much so that food imports to China more than quadrupled in the past ten years. According to the USDA, China is currently the largest international market for U.S. food and agricultural products, totaling 16% of U.S. farm exports, reaching USD $25.9 billion in 2015.

Geography and Development Zones

Beijing city is comprised of six districts: Dongcheng and Xicheng, located within the ancient walled city, Haidian, Chaoyang, Fengtai and Shijingshan.

Beijing Central Business District, located in Chaoyang, is home to more than 80 percent of Beijing's international organizations and foreign chambers of commerce. This includes more than 35,000 businesses, 1,500 financial institutions and several media organizations, making it Beijing's largest and fastest growing economic area. Also one of the most affluent areas of Beijing, the district boasts convenient transportation and advanced telecommunication systems. The district is poised to develop its sales, business and luxury goods industries.

The Beijing Economic-Technological Development Area is an 18-square mile economic zone located in northeastern Daxing District. Known as "Beijing E-Town," the area boasts intensive, innovative and environmentally-friendly development.

Zhongguancun Science and Technology Park, also known as Z-Park, is spread over an area of 83.8 square miles and is home to more than 40 universities, including the prestigious Tsinghua and Peking Universities. Z-Park is divided into multiple research development zones, such as Zhongguancun Software Park (situated in the north-eastern part of Haidian District), which is China's largest state-level software research and development center.

Chapter 2: City Report

Chengdu

Chengdu is the capital of Sichuan Province and a major city in western China. A thriving economic, transportation and communications center in southwestern China, Chengdu is also one of China's primary manufacturing and agricultural bases. The city is part of the West Triangle Economic Zone along with Xi'an and Chongqing. Chengdu is mainland China's top performing economy in job growth, foreign investment and high-value-added industries. The city has a land area of 4787 mi^2 (12,400 km^2) and a population of more than 14 million. Accorded sub-provincial administrative status by the Chinese government, it has direct jurisdiction of more than 10 districts, five counties and four major cities.

In the past 10 years, Chengdu rapidly developed its sophisticated transportation system. It hosts one of China's busiest airports – Chengdu Shuangliu International Airport – and four trunk railway systems that start or run through the city. Chengdu is also an important center for education and R&D in China. Several prestigious universities are located in Chengdu, including Sichuan University, the University of Electronic Science and Technology of China, Southwestern University of Finance and Economics, and Southwest Jiaotong University.

Chengdu has a rich cultural heritage originating from the Shu Kingdom and the Three Kingdoms Period at the end of the Han Dynasty. The city's unique architecture, scenic beauty, Sichuan cuisine and Sichuan opera attract tourists to the region. Chengdu is also the birthplace of the country's tea culture and a major tea base in China.

Key Industries

The economic growth of Chengdu's service industry recently surpassed manufacturing. In 2013, services contributed to 50.2 percent of the city's GDP, while the manufacturing industry contributed 45.9 percent. Chengdu has eight primary industries – electronic information, food processing (including tobacco), machinery,

petrochemicals, metallurgy, automobiles, building materials and light industry. Collectively, their value added output in 2013 was U.S.$32.8 billion (RMB 251.8 billion) – a rise of 14.4 percent over 2012 and 86.3 percent of total industrial output.

Tourism is a pillar of Chengdu's service sector. In 2013, Chengdu welcomed more than 153.39 million visitors, providing revenues of US $19.5 billion (RMB 128.54 billion) (27.2 percent annual growth). Foreign exchange earnings amounted to U.S. $730 million during the same year, an increase of 16.5 percent over 2012. Chengdu is one of the top 14 service outsourcing cities in China and is among the world's top 50 emerging outsourcing cities.

In 2014, total foreign trade grew 9.3 percent reaching U.S.$55.32 billion (RMB 342.98 billion). Imports rose 16.7 percent and totaled U.S. $21.83 billion (RMB 135.32 billion). Key sectors of Chengdu's economy which are easily accessible to U.S. exporters include the following:

Food and Agricultural Products

Fueled by Chengdu's rapidly growing middle class, the demand for imported products has skyrocketed. Within the vibrant tourism sector, hotels in particular are avid consumers of imported food and beverage products. As an interior emerging city market, Chengdu has experienced less import penetration than other Chinese port cities, despite China's burgeoning demand for imported goods. This provides attractive advantages to U.S. exporters.

Currently, U.S. exporters may find strong markets for the following agricultural/food products in Chengdu: Soybeans, poultry (especially chicken feet and wing tips), nuts, fresh fruits (oranges, California table grapes, apples, cherries), dried fruits (prunes and raisins), wheat, breakfast cereal, dairy products, seafood, spaghetti sauce/tomato products, candy and chocolate, baby food, premium ice cream, coffee and potato products.

During the past decade, U.S. agricultural exports to China have risen sharply, transforming the country into the fastest-growing and highest-value export destination for U.S. food and agricultural products. In 2011, China surpassed Canada to become the top U.S. export market. Approximately 16 percent of all U.S. agricultural exports are now to China. In 2015, food and agricultural exports totaled U.S.$25.9 billion.

Automobiles

With its growing upper class population and strategic location, Chengdu provides immense opportunity for U.S. auto exporters. China's State Council recently designated Chengdu's railway port as an automobile import port – the first in Sichuan Province. American automobile manufacturers and auto parts exporters could find tremendous business opportunity just as European automakers have found. Hybrid cars and environmentally friendly automobiles are particularly in demand. In 2014, China's vehicle market continued to be among the top five performing export segments for the U.S., worth U.S. $136 billion (8.4 percent annual growth), but still showed a trade deficit of U.S.$125.1 billion.

Machines, Engines and Pumps

Manufacturing provides more than 45 percent of Chengdu's GDP. The city implemented a "1-3-13" development strategy, whereby the establishment of one modern industry system is enhanced by three levels of development, in turn promoting 13 industries such as electric information, automobiles, petrochemicals, and energy conversation. Consequently, there is a market for U.S. machines, engines and pumps, particularly for Chengdu's aviation, aerospace and automobile industries. This segment is the top performer among U.S. exports, reaching U.S. $219.8 billion (13.6 percent of total exports) in 2014.

Development Zones

The city of Chengdu has two state-level development zones. Each of these zones cater to the specific requirements of their investors.

Chengdu Hi-Tech Industrial Development Zone

Ranking fourth among national hi-tech zones, the Chengdu Hi-Tech Industrial Development Zone was established in 1988 as part of the first group of national hi-tech development zones. Membership was extended to Asia-Pacific Economic Cooperation (APEC) members in 2000.

Chengdu Economic & Technological Development Zone

The Chengdu Economic and Technological Development Zone was established in 2000 and ranks 25th among national development zones for comprehensive strength in China and 2nd in western China. The zone is hailed as the gateway connecting Chengdu with the Chongqing-Shaanxi-Guangxi sea-bound channel. The leading industry is automobiles (engineering machinery).

Chapter 2: City Report

Chongqing

Chongqing is the world's fastest growing city and is the most economically important city in western China. Chongqing is one of four municipalities directly controlled by the central government. Surrounded by rich water reserves, mineral resources, dense forests and abundant fauna and flora, Chongqing is the main berth for sightseeing boats en route to the Three Gorges Dam, which serves as a major source of hydroelectric power in the region.

Once part of Sichuan Province, Chongqing became a municipality in 1997 and consists of 21 districts, 13 counties and four autonomous counties. Chongqing covers an area of 82,400 square kilometers and is an important manufacturing and industrial base. It is also a prominent modern port city on the upper Yangtze River.

Chongqing's GDP grew 10.9 percent in 2014, and in just the first quarter of 2015 it grew 10.7 percent, 3.7 percent higher than the national average. Listed as one of China's 13 emerging megacities by the Economist Intelligence Unit, the municipality boasts an impressive infrastructure to support export/import activities.

Key Industries

Industry accounted for 45.8 percent of Chongqing's GDP in 2015, while services contributed 46.8 percent. The city emerged from industrial origins and now serves as the country's center for automobiles, military, iron, steel and aluminum production. Heavy industry accounted for 73 percent of the municipality's gross industrial output in 2013, and the electronics and related industries grew from 11.4 percent in 2012 to 13.5 percent in 2013. Chongqing is also a bustling retail and wholesale goods center and hosts a growing number of local and foreign retailers.

The Chongqing municipal government issued a national strategy called the 'One Belt, One Road' plan. This development project promotes Chongqing as the western hub of the Yangtze River Economic Belt for shipping and logistics.

Key industries in Chongqing for U.S. exporters include:

Automobiles

Motor vehicles, trailers, bicycles, motorcycles and other similar vehicles were among the top imports for Chongqing in 2014. With its rapidly growing middle class and rising disposable income (up 9.1 percent in 2014), Chongqing demand for automobiles is growing. The city serves as a gateway to the southwestern, eastern and southern China auto markets. It imports approximately 60,000 vehicles each year and ranks third in China for Chinese luxury cars sales, making it a vital market for U.S. auto industry exporters.

Chongqing is also China's third largest automotive manufacturing city and has begun to invest in automotive research and development (i.e., importing new energy vehicles).

Overall, China is both the largest manufacturer and consumer of vehicles in the world. Automobile imports in 2013 totaled 1.17 million and rose to 1.42 million in 2014. In 2014, vehicles were also among the top ten exports to the U.S., an industry worth more than US $136 billion and 8.4 percent of total exports to the U.S.

Medical and Technical Equipment

Optical, medical, photographic, scientific and technical instruments are all important imports for Chongqing. Medical & technical equipment account for 5.2 percent of total U.S. exports worldwide (US $85 billion), and American companies are the main source of China's imported medical devices. Until recently, the majority of China's healthcare expenditures were for basic care and equipment. Now there is growing demand for technologically advanced medical devices.

China has an aging population, and over 44 percent of its 28,751 hospitals (as of November 2016) are state-owned. These hospitals specifically seek out U.S. manufactured, high quality medical equipment. Thus, while domestic manufacturers can supply low to mid-range products, high-end, technologically advanced products are sought out. Additionally, the Chinese government is investing in a technological education center in Chongqing which could provide attractive opportunities for American exporters.

Machinery and Electronics

Machinery and electronics are top imports for Chongqing. Mirroring this, machines, engines, and pumps also top the list of U.S. exports (US $219.8 billion and 13.6 percent of total exports), followed closely by electronic equipment (US $172.4 billion and 10.6 percent of total exports). Chongqing provides a market ready for American machinery and electronics.

Chapter 2: City Report

Dalian

As Northern China's largest free trade port, Dalian is a modern, international shipping metropolis that serves as a gateway to Beijing and Tianjin. Dalian is the primary city in Liaoning's coastal economic belt and is a sister city to Oakland, California.

In 2014, Dalian's GDP totaled RMB 765.56 billion – the highest in Liaoning province and had 5.8 percent annual growth. The city's primary industry contributed RMB 44.76 billion (2.9 percent growth) and its secondary industry RMB 351.72 billion (five percent growth). The services sector added the remaining RMB 351.72 billion, seven percent growth.

In 2014 the city's imports grew 12 percent, totaling RMB 218.4 billion (US$35.5 billion). Primary imports from the U.S. include agricultural products (soybeans, edible oil and corns), dairy products, automobiles and parts, steel, medical devices, consumer products, as well as LED screens and integrated circuits. While most Dalian-based companies have a preference for U.S. corn due to its competitive pricing, China has recently rejected more than one million tons of U.S. corn after detecting an unapproved, genetically-modified strain in shipments, which has complicated the corn importation process. The importation process of advanced manufacturing equipment, however, is still stable.

Key Industries

As an industrial base of China, a wide variety of industries are found in Dalian, including:

- Shipbuilding
- Machinery manufacturing
- Petroleum refining
- Biological engineering
- Digitalized technology

Dalian is in the midst of a transformation from a traditional Chinese fishing village into a national software export base. However, the city still lacks advanced machine tool technology and related support services. This could be a lucrative market for U.S. exporters.

Fishing and Aquaculture Industry

As a port city, Dalian possesses abundant ocean resources and is one of China's leading cities for the marine industry. In 2014, the fishing sector accounted for more than 50 percent of the city's total agricultural output. However, Dalian is now struggling with dwindling coastal resources and is shifting its fishery production structure from catch dominance to aquaculture.

Last year, the city established a fund to encourage the development and importation of marine technology used to locate and navigate fishing grounds, which, by comparison, is a mature industry in the U.S. In order to support commercial and recreational marine fisheries, the city is also experiencing growing demand for watersports equipment, fishing vessels and fishing tackle.

IT and Software Industry

Since the 1990s, with Beijing's strong support, Dalian promotes itself as a leading city for IT and software development. Although its goal is to become China's strongest IT outsourcing hub, Dalian still relies heavily on foreign technology as a foundation for its domestic software sector.

In 1998, the government created a software park in western Dalian, designated exclusively for the development of the IT and software industry. To encourage growth, imports of advanced instruments and equipment to the software park are exempt from import duty, as long as such equipment cannot be produced in China. Nearly half of the enterprises established in the software park are foreign-owned, making it easier for U.S. software providers to do business with China.

Development Zones

Dalian's main development zones include:

Dalian Economic and Technological Development Area

The Dalian Development Area (DDA), located in Jinzhou District, is a state-level economic and technological development area founded by the government in 1984. With a solid industrial foundation and a comprehensive supply chain, the

DDA has attracted more than 2,300 FIEs. Major industries include petro chemistry, automobile & components, equipment manufacturing and light industry.

The Dalian Bonded Area

The largest boned zone in China, the Dalian bonded zone, with an area of 251 square kilometers, was established in 1992. The zone is located alongside the Yellow Sea Coast and consists of the Dayao Bay Bonded Port Area, Bonded Zone, Dalian Export Processing A Zone, Shipping Center, and the Dalian Automotive Logistics Park. Major industrial clusters in the DFTZ include processing, trade, related logistics and warehousing.

Preferential tax and bonding policies exist in the Dalian Bonded Zone. Goods imported into the DFTZ are exempt from import tariffs and import linkage tax if the goods consist of one of the following:

Machinery, equipment and other construction materials used in productive infrastructure construction;
Production and management equipment for the enterprises are established within the zone; or,
A reasonable quantity of office supplies and maintenance parts to be used by the enterprise.

Eligible goods, such as raw materials, spare parts and other materials for processing export products, will be bonded within the DFTZ. Further, transit goods and goods stored in the DFTZ will be treated as bonded goods.

Conclusion

Dalian is undergoing an industrial transformation from a traditional fishing village to a modern, hi-tech city of industry. The city is hungry for mature technology and foreign-made manufacturing equipment. Dalian's strategic geographic location (adjacent to Korea, Japan and Russia), along with its attractive tax exemption policies, make it one of China's most desirable markets for U.S. exports.

Chapter 2: City Report

Guangzhou

Guangzhou is China's third-largest city and the provincial capital of Guangdong Province. As the key port of the Pearl River Delta, it is one of China's primary import/export locations and within close range of Hong Kong Special Administrative Region, with which its economy is closely tied.

The American Consulate in Guangzhou is the U.S.'s oldest diplomatic post in China, dating back to the presidency of George Washington. It was the first city in China to benefit from the economic reforms initiated by Deng Xiaoping in the late 1970s and, largely because of this, now serves as a global hub for business in China.

Guangzhou's total GDP in 2014 was RMB1.67 trillion (US$271.84 billion), while the city's per capita GDP stood at RMB111.333 (US$18,123). In H1 2015, foreign trade in Guangzhou was valued at RMB624.17 billion (US$97.69 billion), with exports of RMB378.57 billion (US$59.27 billion) and imports of RMB245.6 billion (US$38.42 billion).

Key Industries

Automobiles

Automobiles are Guangzhou's fastest-growing industry, accounting for one-quarter of its GDP. The city has specialized auto parks for domestic and foreign auto part manufacturers in Nansha, Huadu, Baiyun, and Huangpu districts. In 2013, Guangzhou's automobile production grew to 1.81 million units, which accounted for 8.2 percent of China's total automobile production. In 2014, production of automobiles rose by 9.3 percent compared to the previous year.

Guangzhou's expanding automobile industry also encourages the local development of auxiliary industries like molds, chemical engineering, electronics, instruments, and tires. These industries are currently highly fragmented across China, consisting primarily of small companies that produce either a single part, or

component of a part, while more complex parts are often imported. U.S. companies can take advantage of this industry to export both expertise and complex auto parts to Guangzhou.

Analysts predict that China's relaxation of the one child policy will lead to increased consumer demand for larger passenger vehicles. While such vehicles currently only account for 10 percent of passenger car sales in China, sales are growing at a faster pace than the auto market as a whole. U.S. companies that manufacture large vehicles, such as mini-vans, may find opportunities in this area.

Petrochemicals

Guangzhou's petrochemical industry has reached an oil refining capacity of 13.2 million tons. According to 2013 data, the total output of the petrochemical industry was valued at RMB254.163 billion (approx. US $39.5 billion) and accounted for 14.68 percent of Guangzhou's total industrial output.

In 2013, the export and import volume of chemical products in Guangzhou grew by US$4.24 billion and US$8.398 billion respectively, which shows a growing demand for foreign imports. The city's most prominent trade partners are the U.S., Japan, South Korea, Hong Kong, Taiwan, and Thailand. Analysts predict that cooperation in the areas of crude trade and clean energy technologies is likely to grow, especially amid mounting pressure against air pollution in China. U.S.-based companies with technical expertise in the crude trade and clean energy may therefore find a growing market for their products in the Guangzhou area as the local industry grows and diversifies.

The local petrochemical industry is experiencing growth partly as a result of incentive schemes from the Chinese government such as spot transaction, forward transaction, and several flexible trading patterns, and partly due to the availability of chain services like warehousing, logistics, trading, and information technology. As this local industry continues to grow as a result of government incentives and private initiatives, U.S.-based businesses will find a stable market for their products.

Electronics

Electronics is the third pillar of industry in Guangzhou, with the Guangzhou Science City acting as its core base. Huadu District, Nansha District, Panyu District, Conghua City and Zengcheng City are the supporting areas. Guangzhou has been identified as the National Electronic Information Industry Base and National Innovation Pilot City by the state authorities.

The electronics industry in Guangzhou consists of flat panel displays, digital home appliances, computers and computer peripherals, photo-electronic devices, communication terminal equipment, mobile telecommunication terminal equipment, home audio-visual equipment, and integrated circuits. Many of these products require components that are not readily produced in China, creating an opportunity for U.S.-based electronics and semiconductor producers that would like to sell into the market.

Guangzhou's Growing Consumer Market

Although more widely known as a manufacturing base, Guangzhou is increasingly being recognized for its growing amount of domestic consumption. From 2012, total retail sales in the city increased by 28.8 percent and reached RMB 769.785 billion (approx. US$ 119 billion) in 2014. Growth in retail sales is largely being fueled by Guangzhou's large population and high wages, as well as its efficient infrastructure. As the city's affluent middle class continues to grow, more opportunities will arise for U.S. companies to export high-quality consumer goods to the city.

Guangdong Free Trade Zone- Nansha New Area

Guangzhou Nansha New Area, Shenzhen Qianhai Development Zone, and Zhuhai Hengqin New Area together form the Guangdong Free Trade Zone (FTZ). Nansha New Area is poised to be Guangzhou's main sea-based trade hub, linking it to many locations around the Pearl River Delta. It comprises 60 square kilometers and contains seven clusters.

Shipping and cargo are expedited in Nansha New Area, with all incoming cargo inspected in a specific area. This reduces time by at least 50 percent over non-FTZ areas by enabling formalities to commence before the ship docks at the port, rather than starting once docked, as is required outside the FTZ. Twenty-four-hour service is provided and automated to ensure all processing is done swiftly.

GDP of Nansha surpassed RMB100 billion in 2014, and its industrial output reached RMB270.6 billion in the same year. Restrictions are lifted for setting up operations in the area, and there is no minimum set for registered capital.

Chapter 2: City Report

Hangzhou

Located less than an hour south of Shanghai, Hangzhou is the capital city of Zhejiang province and hosts one of the country's economic and technological development zones.

In 2014, Hangzhou's GDP exceeded RMB 920 billion, up 8.2 percent compared to the previous year. The city's primary industry contributed RMB 27.4 billion and its secondary industry RMB 385.9 billion (8.1 percent growth). The remaining RMB 506.8 billion came from the services sector, which grew 8.5 percent year-on-year, accounting for over 55 percent of the city's GDP in 2014.

The city's import and export volume totaled RMB 300 billion (US$45.9 billion) during the first 10 months of 2015. Hangzhou exported RMB 46.2 billion of goods to the U.S., an increase of 10.4 percent compared to 2014. The growth of cross-border e-commerce has become a bright spot for the city; in the first three quarters of 2015, exports via cross-border e-commerce grew 247 times to RMB 1.15 billion. During the same period, Hangzhou imported RMB 6.38 billion of pharmaceutical and medicinal products- a growth rate of 30.2 percent.

Industry Opportunities

Retail

Driven by the fast-developing e-commerce industry, Hangzhou's retail sector is experiencing strong growth. In 2014, the total volume of retail sales in Hangzhou was RMB 383.87 billion, an increase of 8.7 percent- higher than the city's overall GDP growth. Food sales reached RMB 26.14 billion, up 14.6 percent from the previous year.

Given recent food scandals and resulting wide-scale distrust towards domestic food products, many middle class Chinese consumers are willing to pay a premium

for foreign imports in order to quell anxieties about domestic food safety. This has opened up a huge market for the U.S., the largest exporter of food products worldwide.

Processing

Processing trade is one of the biggest industries in Hangzhou. Under China's bonded system of processing trade, the amount of materials and components imported for the purpose of processing trade is exempt from tariffs. Currently, Hangzhou's processing industry still largely relies on imported parts and components from abroad. Most domestic companies are only involved in the manufacturing process, with foreign companies providing design and engineering services.

Development Zones

Major development zones in Hangzhou include the Hangzhou Economic & Technological Development Zone, Xiaoshan Economic & Technological Development Zone and its newly established e-commerce zone.

Hangzhou's E-Commerce Zone

Hangzhou's e-commerce industrial park was established in July 2013 as China's first experimental test point for the export of packaged goods. Hangzhou's e-commerce zone currently follows a "one zone, three parks" model, consisting of the following three areas:

- Oriental E-Commerce Park
- Hangzhou E-Commerce Industrial Park
- China (Hangzhou) Cross-Border Trade E-Commerce Industrial Park

According to the proposal, the government plans to integrate these e-commerce zones and to spread e-commerce business to other areas in Hangzhou and Zhejiang province. Foreign exporters that are filed with the committee of the e-commerce zone are allowed to sell goods directly to Chinese consumers. Such imported goods are subject to lower import duties and may go through a "paperless customs clearance" system, which exempts exporters from submitting hardcopy documents. Enterprises, as well as individuals, are permitted to open an overseas account for settling payment and will no longer be subjected to a US$50,000 yearly limitation.

Today, domestic e-commerce giants such as Tmall Global and Xian life and a number of large importers have established operations in the zone. Backed by state policies, exporters cooperating with distributors and e-commerce enterprises located in Hangzhou may enjoy lower tax rates and sell to China's lucrative market directly, without a physical presence.

Sister City of Boston and Indianapolis

Both popular tourism destinations, Boston and Hangzhou share a lot in common. The two cities first established their relationship in 1982, and have been involved in a number of joint-initiatives in the field of manufacturing, education, arts, and the silk industry. In 2008, Hangzhou became Indianapolis' fifth sister city. As both Indianapolis and Hangzhou share a reputation for tourism, education, and high-technology, special attention should be paid to exchanging expertise and knowledge in these fields.

Chapter 2: City Report

Harbin

Located in Northeastern China, Harbin is the capital and largest city of Heilongjiang province with a population of almost 10 million. The city is the political, economic, and cultural center of Heilongjiang province and one of China's most important industrial bases. The pillar industries in Harbin are equipment manufacturing, pharmaceuticals, food processing, and petrochemicals. The city also has a natural abundance of nutrient rich black soil, which makes it ideal for agricultural businesses.

Harbin is known as the "Ice City" for its long and cold winter, and the famous ice festival that it holds each year. Harbin harbor is one of China's eight inland ports and the largest in the country's northeast. Equipped with a strong infrastructure, the city is a major transportation gateway with an international land bridge and around 138 trains terminating or passing through.

Foreign Trade Landscape

In 2013, Harbin's GDP was U.S. $117.99 billion, and its GDP per capita was U.S. $11,671. In terms of sector-wise contribution to the city's GDP, industry accounted for 34.8 percent while services contributed 53.4 percent. Recently, the service industry has seen steady growth, in part due to retail and tourism.

The same year saw total foreign trade in Harbin reach U.S. $6.54 billion – an increase of 40.3 percent over 2012. Harbin's imports and exports registered a significant increase, up 31.4 percent and 53.4 percent respectively. Harbin's exports stood at U.S. $2.9 billion while imports were U.S. $3.6 billion. The U.S., Russia, India, and Brazil constitute major trading partners.

Key Industries

Electrical Machinery

Heilongjiang province has identified heavy industry – namely machinery and transportation equipment manufacturing – as a key area in need of development because manufacturing produces the bulk of Harbin's industrial output. The modernization and mechanization of Harbin's sizeable agricultural industry also remains a government priority. This scenario presents important opportunities for American exporters, particularly as machines, engines, and pumps topped U.S. exports in 2014, amounting to U.S. $219.8 billion (13.5 percent of total exports).

Fertilizer and Paper Pulp

Harbin is a major base for the production of commodity grains, and textile-related and other cash crops, due to the region's nutrient rich 'black earth' soil. The city has established a complete agricultural process chain, with the agricultural sector accounting for 11.8 percent of the city's GDP.

Fertilizers and paper pulp are key commodities imported by Harbin. Both are old and established industries in the U.S. – American fertilizer, while experiencing difficulty in recent years, is still a $28 billion-strong industry, while paper pulp exports rose to U.S. $5.4 billion in 2014 (up by 8.2 percent). Harbin's need for these products offers U.S. exporters viable commercial opportunities in Northeast China.

Retail Industry

Retail and tourism are key industries of Harbin's services sector. In 2013, the sale of consumer goods rose by 13.9 percent, to over US $42 billion (RMB 272.83 billion). In the same year, more than 55.48 million tourists visited the city, contributing to revenue of about US $10.3 billion (RMB 66.85 billion).

The retail and tourism industries are driven by China's rising disposable incomes, which have led to changes in consumer shopping habits. As younger generations become more exposed to global trends through social media and increasing economic stability, U.S. exporters can use niche market opportunities such as toys, convenience foods, personal care, and baby products. With its excellent infrastructure, Harbin is an ideal location to access this new consumer group.

U.S. – China Sister Cities

Harbin has had a sister-city relationship with Minneapolis since 1992. Several official delegations from Minneapolis have visited Harbin to explore various business opportunities and promote cultural dialogue. Most recently, Minneapolis Mayor Betsy Hodges led a delegation to Harbin in early 2015; and several future exchanges have been proposed, which include the establishment of a China Garden in Minneapolis and coordination between the two cities to promote winter-related commercial activity.

Chapter 2: City Report

Kunming

Kunming is the capital of Yunnan, a province in China's southwest that borders Tibet, Myanmar, Laos, and Vietnam. Traditionally a low economic performer in China, the city made rapid advancements following the launch of the government's "Go West" policy in 2000 and the ASEAN-China Free Trade Area (ACFTA) agreement in 2005.

Positioned near the border with several Southeast Asian countries, Kunming was and remains a major beneficiary of these two initiatives; it provides transportation and trade links to Vietnam, Burma, and Laos. It is also a regional transportation hub, with a network of highways and railways that connect to other major cities in China. The Kunming Changshui International Airport was ranked seventh in China for passenger traffic and ninth for freight traffic in 2014.

Kunming has a population of more than 6.4 million and holds jurisdiction over six districts, one county-level city, four rural counties, and three autonomous counties. It is now one of four major cities in southwest China alongside Chengdu, Chongqing and Guiyang.

In 2014, Kunming's GDP was US $56.99 billion (RMB 372.3 billion) with a per capita income of US $8609 (RMB 56,236). For the same year, imports amounted to US $6.17 billion and exports to US $11.6 billion.

Key Industries

With rich natural resources, Kunming is a key player in China's agricultural and mineral production industries. The city's economy is dominated by the services sector, which contributed 53.7 percent to GDP in 2014 and within which tourism is most prominent. Industry comes in a strong second, contributing 41.4 percent to the economy in 2014.

Other key industries in Kunming include tobacco, metallurgy, mechanical and electronic integration, and pharmaceuticals. The following sectors are of particular interest to U.S. exporters.

Agricultural Equipment

Yunnan province is part of an important agricultural belt in China; and Kunming is a significant horticultural center, providing products as varied as grain, wheat, horse beans, corn, potato, and fruits. The city is also famous for its floriculture and flower-growing exports. Thus, the region offers U.S. exporters an important market for agricultural equipment and equipment parts.

Currently, U.S. manufacturers hold a 43.5 percent share in China's import market for agricultural equipment; and in 2014, the Chinese market was the sixth-largest export market for U.S. agricultural equipment (US$376.1 million). There is a significant opportunity for further U.S. imports, as the farming sector in China is transitioning from being a traditional, labor-intensive industry to one that is mechanized and dependent on high-technology. Demand for imports of broad parts and highly specialized equipment, such as milking machinery, seeders and planters, and certain tractor components, has remained strong.

Food Products

Top U.S. food exports to Kunming include nuts and dried fruits (almonds, pistachios, raisins, prunes, dried blueberries, and cranberries), beverages (coffee, coke, and juices), milk powder, jam, non-dairy cream, and mustard. These are sold widely in supermarkets and upscale retail outlets. Certain products, like California almonds and U.S. pistachios, have name recognition and are widely distributed.

Kunming imports U.S. beef, frozen seafood, and chicken. Chicken's feet, which is typically not consumed domestically in the U.S., is the cheapest and most large-scale export to the region. The biggest competitor to the U.S. comes from North China, which has abundant poultry farmland, although inland logistical costs are high. Guangzhou is a popular import point for U.S. poultry, from where it can be distributed to cities such as Kunming cost-effectively.

Automobiles

U.S. auto exports hit a record for the third consecutive year in 2014, with strong demand coming out of China, Canada, South Korea, Mexico, Germany, and the Middle East. In 2014, U.S. auto exports to China were over ten times higher than in 2009. Today, the Chinese market is diversified and includes light vehicles, luxury models, and SUVs.

Within China, second tier cities like Kunming have been growing at a much faster rate than first-tier cities such as Shanghai, Beijing, and Guangzhou, presenting dynamic opportunities for U.S. exporters. Rapid economic growth translates into higher per capita disposable income, and Kunming offers an attractive consumer base given its large population and high-performing industrial and service sectors. Kunming is a particularly interesting market for automobiles due to its well-developed transport links with major Chinese cities and neighboring Southeast Asian countries.

Development Zones

Kunming Economic and Technological Development Zone

This is a state level zone with target industries including tobacco processing, machinery manufacturing, electronic information, and biotechnology.

Kunming National High-tech Industrial Development Zone

The High-tech Industrial Development Zone targets new materials, biotechnology, mechanical and electrical integration, environmental protection, information technology, and agricultural high-tech industries. Key investors are Pepsi, Gargee International Group, Microsoft, Walltech Group, BASF Group, Wilmar International Group, Air Products and Chemicals, Yunnan Baiyao Group, and Yunnan Copper.

Chapter 2: City Report

Nanjing

Nanjing, the capital of Jiangsu province, has emerged as eastern China's second largest commercial center and a leader for education, research, transportation and tourism in the country. With its large consumer market the city boasts a strong purchasing power.

Located on the Yangtze River Delta, the city has five state-level development zones, eight provincial-level development zones and multiple industrial parks.

With a total GDP in 2014 was US $141.7 billion, the city's per capita GDP stood at RMB 114,795 (US $17,943). In 2013, Nanjing's foreign trade was valued at US $26.85 billion, with exports amounting to US $32.27 billion and imports to US $23.49 billion. Nanjing's major imports include chemicals, electronics and minerals.

Key Industries

The services and industry sectors made up approximately 54.4 and 43.3 percent of Nanjing's 2013 GDP, respectively, the largest services industries in the city are research, transport, IT, telecommunications, logistics, tourism and retail.

Considered to be the educational hub of Jiangsu province, the city hosts 54 universities with over 711,600 students. Among these, Nanjing University, Hohai University, Nanjing University of Aeronautics & Astronautics, and Southeast University are all well-known in China.

While the services sector contributes more to the city's GDP, Nanjing has a growing industrial sector that has benefited from an abundance of resources and the city's proximity to Shanghai. Major industries in Nanjing include electronics, software, petrochemicals, automobiles, and steel, which the government has supported with key development zones and financial incentives. Aside from its historically strong industries, the city is witnessing the growth of biopharmaceuticals, new energy, new

materials, environmental services, electro-optical products, aviation equipment, ship equipment, automation and transportation.

Many industries in Nanjing rely on imports from the U.S. Below, we explore import-export demands and investment opportunities in Nanjing's automobile, petrochemical, retail, IT-BPO, and biopharmaceutical industries.

Automobiles

Nanjing's automotive industry imports and exports a range of both light and heavy duty trucks, mini vans, buses, cars and other commercial vehicles. Imports and exports for auto parts and other equipment are also prominent and include power train products, cooling systems, chassis parts, and forging, casting and stamping parts.

Automotive parts being a highly fragmented sector in China, there is a clear opportunity in this industry for U.S. companies that can manufacture advanced car parts for export. During 2009, only six enterprises in Nanjing produced complete vehicles, 16 produced specialty vehicles, over 200 produced auto components and two produced motorcycles.

Petrochemicals

Nanjing is a central petrochemical industry base in China, with a comprehensive strength that ranks second only to Shanghai. While the petrochemical industry is a pillar industry in China, it is also heavily reliant on imports, particularly from the Arab Gulf countries (US$ 15.2 billion). This is one reason why the development of this industry holds an important place in the 12th Five Year Plan.

As China intends to transform its petrochemical industry through changes in engineering construction, U.S. businesses can seek to find partners for exporting industrial goods (machines, engines, pumps, electrical machinery, etc.) and providing technology to build safe, green and smart new plants. Further, with shale gas powering a U.S. petrochemical revival, China's market size becomes highly attractive with respect to the potential for exports.

IT-BPO

The Nanjing service outsourcing business sector is made up of the software industry and information technology (IT), bio-medicines, industrial design, animation and other fields.

The number of Nanjing software industrial enterprises reached 1,900 in 2012. Software business income reached US$ 32.45 billion during the same year, up 37 percent from 2011. Software product income was US$ 11.19 billion, up 32 percent from the previous year, while information system integration service income was 8.11 billion, indicating a year-on-year growth rate of 30 percent.

Conjointly, Nanjing serves as a regional headquarter, R&D center and service center for various Western and Asian MNCs, including Oracle, Pactera Technology International Ltd, iSoftStone, Neusoft, CapGemini, Ascendas, Microsoft, BearingPoint and Satyam. In 2012, there were 461 newly approved foreign-invested enterprises in Nanjing, up 37.2 percent on the previous year.

As IT-BPO continues to grow in Nanjing, U.S. based companies will find increased opportunities to sell information technology and management consulting solutions to the emerging Nanjing-based industry and the companies that operate within it.

Biopharmaceuticals

The Chinese pharmaceutical industry is fragmented and inefficient, even as China accounts for 20 percent of the world's population and has come to host a significant ageing population. Nanjing's growing biopharmaceuticals industry can help meet growing demand – over 100 enterprises develop and produce bio-medicine, and 60 enterprises had obtained good manufacturing practices (GMP) Certificates in 2009.

Chinese pharmaceutical imports were US$ 17.7 billion in 2014, up by 145.2 percent from the previous year. Imports for the biopharmaceutical industry in Nanjing account for a significant portion of these imports. U.S. based pharmaceutical companies are well-positioned to export to these Nanjing-based companies as the pharmaceutical industry develops in China.

Retail/Consumer Market

In 2013, Nanjing's retail sales of consumer goods amounted to US $2.1 billion, an increase of 16 percent over the previous year. Nanjing's retail market includes an estimated 1.5 million square meters of organized retail space – shopping centers constitute 1 million square meters of this total. Xinjiekou, the central business district in Nanjing, is the main retail market. The city's luxury shopping mall Deji Plaza is also located here.

Another area that is developing is the city's Hexi New Town, which is expected to become the city's second largest retail market. Several international retail giants are already present, including Wal-Mart from the U.S., B&Q Supermarket and Tesco from the UK, Auchan and Carrefour from France, and Metro from Germany. The increase in sales of consumer goods fits in with China's overall strategy of rebalancing its economy towards a consumer driven growth model. U.S. companies can take advantage of this opportunity by exporting more goods to meet the needs of Nanjing's growing middle class.

Nanjing Development Zones

Nanjing has four established state level development zones: Nanjing Baixia Hi-Tech Industrial Zone, Nanjing Economic and Technological Development Zone, Nanjing Export Processing Zone, and Nanjing New and High-Tech Industry Development Zone.

These development zones offer financial incentives and tax subsidies to companies operating within them. They present U.S. exporters with a great opportunity to access the Nanjing market and China as a whole.

Nanjing Baixia Hi-Tech Industrial Zone

Nanjing Baixia Hi-Tech Industrial Zone is a national hi-tech industrial zone covering 6.4 square miles of planned area. The zone is 8.4 miles from downtown Nanjing and 31 miles from Nanjing Lukou Airport. It is equipped with key infrastructural facilities, and encourages investments into high-tech industries such as electronics, automobile, chemical, machinery, instruments and building materials.

Nanjing Economic and Technological Development Zone

Established in 1992, Nanjing Economic and Technological Development Zone is a national level zone that benefits from an established transportation network. The zone is 12 miles from Nanjing Port and 25 miles from Nanjing Lukou Airport. It hosts four specialized industries, which include the electronic information, bio-pharmaceutical, machinery and new materials industries.

Nanjing Export Processing Zone

In 2003, the State Council approved this Export Processing Zone (EPZ) in Nanjing's Southern District over a planned area of 1.2 square miles. The zone is 12 miles from Nanjing Port and several expressways intersect there. The EPZ is also free from import/export duties and provides 24-hour customs-bonded conditions. The Central Government has given the special economic region preferential policies to attract more enterprises engaged in trade investments.

Nanjing New and High-Tech Industry Development Zone

Nanjing New and High-Tech Industry Development Zone was jointly founded by the Jiangsu Provincial People's Government and the Nanjing Municipal People's Government, and was established as a national new and high-tech industry development zone by the State Council in 1991. The zone is situated close to National Highway 104 and 312 and its pillar industries include the electronic information, bio-engineering and pharmaceutical industries.

Chapter 2: City Report

Ningbo

Ningbo is a harbor city in Zhejiang province and one of China's most prominent ports. The Ningbo-Zhoushan port is the fifth-largest in the world and the third-busiest in China after Shanghai, Shenzhen and Hong Kong. It is bound by the East China Sea and Zhoushan Archipelago in the east, by Hangzhou Bay in the north, by Shaoxing in the west, and by Taizhou in the south. In 2007, the Hangzhou bay bridge was built, connecting Ningbo with its neighbors. Ningbo has established intermodal rail services that connect it to 13 inland ports. It also has the largest specialized dock for storing liquefied chemical products in China.

Ningbo serves as the economic center for the southern Yangtze River Delta and has been ranked among the most competitive cities in China. The municipal government of Ningbo encourages foreign investment and various multinational corporations (MNCs) have established operations in and around Ningbo. In 2013, Ningbo's GDP reached US $108.3 billion (RMB 712.89 billion), up 8.1 percent year on year with an annual growth rate of 9.26 percent. Ningbo's exports totaled US $65.7 billion while imports amounted to US $34.6 billion. The city ranked second in economic performance for Zhejiang province in 2014, trailing only Hangzhou.

Ningbo has a sister city relationship with four cities in the U.S. – Wilmington, Delaware (1988), Houston, Texas (2000), Milwaukee, Wisconsin (2006) and Norfolk, Virginia (2013).

Key Industries

Industry dominates Ningbo's economic activity, contributing to 52.5 percent of its GDP in 2013, while services accounted for 43.6 percent. The industrial sector also registered a growth rate of 8.4 percent year on year to reach a value-added output of US $51.3 billion (RMB 337.8 billion).

Pillar industries in Ningbo are wide-ranging and include textiles, auto parts, iron & steel, power generation, paper-making, plastics, petrochemicals, chemicals, electrical machinery, telecom equipment manufacturing, IT, and port-related industries. The city's economic activity benefits immensely from its port. According to the Economist Intelligence Unit, this port is one of China's main entry ports for the import of raw materials such as coal, iron ore and petroleum.

Ningbo is also one of China's oldest cities – its origins date back to the Hemudu culture in 4800 B.C. In 2013, its cultural and historical sites attracted 62.26 million domestic tourists and 1.27 million foreign tourists. This trend has continued to grow and the city received a total of 2.98 million tourists during the one-week Spring Festival holiday in 2015 alone, showing a 5.4 percent increase over the same period in 2014.

As per 2013-2014 estimates, Ningbo was among the fastest growing Chinese metropolitan economies, registering employment and GDP per capita growth rates above the rest of China.

Below are key sectors of interest to U.S. exporters:

Scrap Materials

Scrap materials include a wide range of commodities such as metals, paper, and plastics. U.S. companies exported US $9.5 billion of scrap in 2012, the two biggest of which were copper materials (US $3 billion) and aluminum materials (US $2.4 billion). According to the Institute of Scrap Recycling Industries in Washington DC, China has become the destination for about 40 percent of U.S. scrap exports in recent years.

Scrap material is used by Chinese firms to assemble and manufacture finished goods. As an established and diversified manufacturing base in northeast China, Ningbo offers an important market for U.S. exporters of recycled scrap materials.

Retail

China is currently focused on rebalancing its economy towards a consumer driven growth model. This opens up greater opportunities for U.S. companies to export goods and services to meet the needs of China's growing middle class. According to the 2014 Global Metro Monitor Map released by Brookings last year, Ningbo's

GDP per capita in 2014 was US $23,153. A high disposable income translates into higher per capita consumption expenditure, which reached US $4,240 (RMB 27,893) among urban residents of Ningbo in 2014.

Ningbo's retail sales of consumer goods grew 13.5 percent in 2014 to US $45.4 billion (RMB 299.2 billion), accounting for 18 percent of Zhejiang's total retail sales. Daily average retail sales reached US $124 million (RMB 820 million). The retail sales of petrol and related products grew 14.9 percent; clothing, footwear, headgear and textiles grew 22.5 percent; cars grew 7.6 percent; while food, beverages, tobacco and alcohol grew 8.1 percent. There has also been a marked rise in the ownership of home consumer durables, such as washing machines, refrigerators, TVs, air-conditioners, microwave ovens and mobile phones, among others.

Agricultural Products

About one-fifth of U.S. exports to China consist of agricultural products. China is the largest export market for U.S. soybeans, with a market share of 63 percent. In 2015, U.S. soybean exports were valued at US $12.7 billion. Soybeans are used in a range of products, including cooking oil, milk and animal feed. Other top U.S. exports include cotton (US $3.4 billion), corn (US $1.3 billion), and animal hides and skins (US $827 million). American agricultural exporters should target Ningbo's textile, food-processing and hospitality industries.

Ningbo figures among the top 25 second-tier cities attractive for food imports. Its rising middle and high income classes, proximity to port facilities and flourishing tourism and related industries provide key advantages to American food exporters (fresh fruits, seafood, wine, liquor and other farm and food products).

Development Zones

Ningbo Economic & Technological Development Zone (NETD)

Located in the north-east of Ningbo, NETD is 17 miles away from the city center. It is situated behind the Beilun Port, and is close to the Ningbo Port and Ningbo Lishe International Airport. Major investors include Exxon Mobile, Dupont and Dow Chemical. It is focused on chemicals, stainless steel, shipbuilding, automobiles, modern paper making, electric machinery and textiles.

Ningbo Daxie Development Zone

The Daxie Development Zone was approved in 1993 and has the infrastructure, industrial and logistical foundations for the transshipment of energy, port-related petrochemicals and containers.

Ningbo National Hi-Tech Industrial Development Zone

Founded in 1999, the National Hi-Tech Industrial Development Zone is only 6.2 miles from the Ningbo International Airport and 11 miles from Ningbo Port. The zone is focused on chemical production and processing, biotechnology, pharmaceuticals, raw material processing, R&D, photovoltaic and communications, software and micro-electronics.

Chapter 2: City Report

Qingdao

Qingdao, the largest city in China's eastern Shandong province, is a major seaport best known for its Tsingtao Beer. Qingdao hosts one of the world's busiest seaports –handling 480 million tons of cargo in 2014.

In 2014, Qingdao's GDP exceeded RMB 869.21 billion, up eight percent compared to the previous year. The city's primary industry contributed RMB 36.26 billion and its secondary industry RMB 388.24 billion (8.4 percent growth). The remaining RMB 444.71 billion came from the service sector, which grew 7.9 percent year-on-year. Notably, Qingdao's gross ocean product (GOP) in 2014 totaled RMB 175.11 billion, contributing more than 20 percent of the city's GDP.

According to Qingdao Customs, the city's total import and export volume amassed US$79.9 billion in 2014. The U.S. is one of Qingdao's major trade partners. In 2014, Qingdao exported US$8.34 billion of goods to the U.S., accounting for 18.2 percent of the city's total exports, while U.S. exports to Qingdao totaled US$2.42 billion. Qingdao's top four imports are textiles (US$790 million), agricultural products (US$5.78 billion), electro-mechanical products (US$7.61 billion) and high-tech products (US$3.92 billion).

Business Opportunities

Ocean-related industries

The sum of ocean-relation industries, or the so-called "blue economy" in Qingdao, is widely seen as the economic future of the city. Qingdao has a 730.64 kilometers zigzagged coastline that possesses an invaluable stock of sea resources. At present, 30 percent of China's marine research institutions are located in the city. However, despite the abundance of marine resources, Qingdao's lack of supporting technology and professional equipment has greatly impaired the development of its blue economy. As such, there is a significant opportunity for U.S. exporters able to manufacture such products.

Aviation

In December 2015, China set up Qingdao's first general aviation airport in Qingdao West Coast New Area, indicating the government's intention to develop the city's general aviation industry. According to research, by the end of 2013, the number of China's general aviation airports was only 0.37 percent of that of the U.S. Since China's civil aviation needs are increasing, the industry has been growing at a fast pace to keep up with strong demand. It is estimated that China will need over 10,000 light aircraft within the next five years in order to meet the general aviation sector's rapid expansion.

The U.S. Federal Aviation Administration and the Civil Aviation Administration of China have both endorsed the U.S.-China Aviation Cooperation Program, which was created to promote technical, political and commercial cooperation between the two countries. The U.S. is home to many major players in the aviation industry and large manufacturers of aircraft engines. While direct investment into China's aircraft industry is still restricted, exporting engines, auxiliary power units and air navigation instruments is strongly encouraged by the Chinese government.

Development Zones/Areas

Qingdao West Coast New Area

In 2014, China's State Council approved the establishment of the Qingdao West Coast New Area, which is located on the west coast of Jiaozhuo Bay between the Beijing-Tianjin-Hebei and Yangtze Delta regions. Serving as a strategic base for deep-sea and offshore exploration, the New Area is expected to become the leading economic hub of Shandong Province, equivalent to Pudong in Shanghai.

Apart from the current six pillar industries within the zone, such as shipping and petrochemistry, the area is now promoting the development of 10 emerging industries, namely:

- Marine bio-pharmacy
- Yachts and cruises
- General aviation
- Maritime finance
- Film and culture
- Leisure

- Information technology
- Seawater desalination
- Ocean new energy

To date, nine national-level industrial parks have been established in the New Area, including the Qingdao Tax-free Port, the Modern Agriculture Base and a high-tech zone exclusively for ocean-related industries. The New Area aims to be an international port and testing ground for various ocean-related economic initiatives.

Qingdao National High-tech Industrial Development Zone

Established in 1992, the Qingdao National High-tech Industrial Development Zone is China's software industry base. Prominent industries include science services, software & IT, high-end equipment manufacturing, marine bio-pharmaceuticals, marine equipment manufacturing and energy saving & new materials. The zone offers import duty reductions for imported marine bio-pharmaceutical products and marine equipment on a case-by-case basis.

In 2014, the zone's total trade volume increased by approximately seven percent to US$2.3 billion. The zone also includes the "blue silicon valley" – a world-class research and development center for marine science and technology. Over 35 percent of the zone's total population is involved in research, with more than 200 marine scientists from China and overseas conducting on-site research. In obvious reference to its U.S. namesake, Blue Silicon Valley is expected to be a driving force in the development of the city's blue economy.

Sister City of Long Beach, California

The year 2015 marks the 30th anniversary of the establishment of a sister city relationship between Qingdao and Long Beach, California. The two are both port cities and have close trade relations. It is reported that nearly two-thirds of Long Beach's trade is with China, and the value of trade with the Port of Qingdao alone is worth US$7 billion a year. Qingdao has expressed an eagerness to learn clean technology techniques and cutting-edge elder care services from Long Beach and the U.S. in general.

Chapter 2: City Report

Shanghai

Shanghai, a municipality of over 24 million people, serves as a global hub for commerce and finance. The city received its first formal trade mission of U.S. companies in 1905, welcomed the establishment of the American Chamber of Commerce Shanghai in 1915, and has been the beneficiary of significant foreign direct investment since the 1920s. While ultra-competitive, Shanghai is a welcoming environment for international business, with consumers and industrial customers well-versed in the value proposition of foreign goods and services. It is worthwhile to note that in the American Chamber of Commerce's 2015 annual survey of its U.S. members, competition from domestic companies was again listed as a top challenge that U.S. companies face in eastern China.

Shanghai is a sprawling city comprised of 15 districts and an additional county. For most business travelers, Shanghai can be divided into three main areas: Pudong, Nanjing Road, and the western suburbs. Pudong, is a rapidly developing business, financial and residential district that lies across the Huangpu River from the main city. Pudong is home to many of Shanghai's most famous buildings, including: the Jin Mao Tower, Oriental Pearl TV Tower, the Shanghai World Financial Center, China's newly constructed tallest-building the Shanghai Tower, the Pudong International Airportthe Shanghai Free Trade Zone (FTZ or SFTZ), and several business parks. Shanghai's second airport, Hongqiao, is located in the western suburbs and operates the majority of the domestic flights as well as selected international flights. The Hongqiao Railway Station is next to the airport.

Shanghai's total GDP in 2014 was RMB 2.36 trillion (US$383.55 billion), while the city's per capita GDP stood at RMB 97,555 (US$15,880). Foreign trade in Shanghai was valued at RMB 2.87 trillion (US$466 billion), with exports valued at RMB 1.29 trillion (US $210 billion) and imports valued at RMB 1.58 trillion (US $256 billion).

Key Industries

The division of Shanghai's 2014 GDP between the goods and services was approximately 37 and 62 percent, respectively,. The city's largest service industries include financial, real estate, and retail. The major goods industries in the city include electronic information, automobiles, petrochemicals, steel, equipment manufacturing, and biopharmaceuticals. Although the goods industries contribute less than services to the city's overall GDP , they do contribute to China's industrial mix, acting as host to the world's busiest and voluminous container port in the world.

Many industries in Shanghai rely on imports from the U.S. Shanghai is a national distribution center for imported consumption commodities, with nearly 30 percent of China's imported consumption commodities being imported through the city in 2014. In terms of export commodities, Shanghai primarily exports electronics and biomedicines. Below, we explore import demands from Shanghai's automobile and aviation industries, as well as the strong supply of electronics and biopharmaceuticals from Shanghai.

Export & Import Data of Shanghai (2014)		
Products	Export Value (USD)	Import Value (USD)
Electronics	54 billion	5.6 billion
Aviation	481 million	1.3 billion
Pharmaceuticals	2.3 billion	620 million
Automobile	911 million	1.7 billion

Data source: Shanghai Custom Bureau

Automobiles

Despite experiencing a slowdown in sales, China remains the largest automobile market in the world. The 23 million automobiles sold in China during 2014 compares favorably to the 16.5 million sold in the U.S. during the same year. Shanghai is importing nearly twice the value of exports in the automobile sector. This gap, highlights the opportunities that exist in the market for foreign sellers. Many experts expect the market to continue to grow, although not at the same breakneck speed as in recent years.

Beginning in 2015, authorities in Shanghai implemented a parallel-import pilot to allow a select number of auto dealers in the Shanghai Free Trade Zone to import vehicles at rates of 15 to 20 percent lower than others. Although purchasing automobiles at free trade zones has become maligned by some locals due to poor post-sales services, authorities are aware of the issues and currently seeking solutions.

The industry that underpins automobiles, automotive parts, is highly fragmented in China and oftentimes consists of small companies producing just one part, or a component of a part. These companies mostly produce simple parts, with the more advanced parts being imported. This has created an opportunity for U.S. companies to manufacture advanced car parts for sale in China through the Shanghai market.

Aviation

The aviation market in China is the second fastest-growing in the world, second only to India. Industry experts forecast a 7.9 percent annual growth rate for the industry in China. Although growth for the industry has primarily focused on the domestic market, experts now expect the demand for international services to take a more prominent role as the industry diversifies

Recently, Chinese state-owned aerospace manufacturer Commercial Aircraft Corporation of China, Ltd (Comac) unveiled the C919 passenger jet that is expected to compete with Boeing and Airbus. Major U.S. suppliers have already begun capitalized on these developments by selling engines, auxiliary power units, flight simulator tests, and fire and heat protective systems to Comac.

Electronics

Although the electronics industry in Shanghai is primarily export-oriented, Shanghai and the country as a whole still imports important components for many of its electronics products. For example, China imports at least 80 percent of the semiconductors it uses in electronics manufacturing. Many of these semiconductors are imported from the U.S. Manufacturers in China are continuously seeking partners that are willing to engage in trade and technology transfers.

U.S. companies may want to look beyond traditional information communications technology industries and evaluate burgeoning subsectors such as smart governance, intelligent transportation, and smart cites. In April 2015, in accordance with an agreement between Presidents Obama and Xi, the U.S. Secretary of Commerce and Deputy Secretary of Energy co-led a Smart Cities-Smart Growth trade mission to Beijing, Shanghai, and Guangzhou that should prove to be just the tipping point for expanding opportunities for U.S. companies in these fast growing sub-sectors.

Biopharmaceuticals

Imports for this industry in Shanghai have remained low as a result of intellectual property right laws in China. However, some industry experts express hope that intellectual property rights compliance will soon improve in the country, allowing U.S. companies to fill a market gap for high-quality products in China.

The Shanghai FTZ

At the beginning of 2015, the Shanghai Free Trade Zone consisted of four zones across 46.61 square miles in the Pudong area of Shanghai. These four zones included Waigaoqiao Free Trade Zone, Waigaoqiao Free Trade Logistics Park, Yangshan Free Trade Port Area and Pudong Airport Comprehensive Free Trade Zone.

In April 2015, the entire zone was expanded to include the Lujiazui Financial and Trade Zone, Shanghai Jinqiao Economic and Technological Development Zone (former Jinqiao Export Processing Zone), and Zhangjiang Hi-Tech Park. The Shanghai FTZ now stretches across 74.7 miles. In particular, the inclusion of the Lujiazui financial district was designed to open up the service industries and spur financial liberalization.

The Shanghai FTZ offers exemptions on import tariffs as long as goods remain within the zone. This also extends to air shipments through Pudong Airport, where goods are unimpeded by customs procedures or import duties. The Shanghai FTZ was designed to offer greater efficiencies for foreign enterprises while easing the time to market and lowering the cost to enter the market. Issues with implementation have thus far prevented the FTZ from reaching its founding promises, but efforts are still on-going and the zone has garnered national level attention. China has a vested interest in the success of the Shanghai FTZ, and foreign companies continue to find good business opportunities.

Chapter 2: City Report

Shenyang

The capital of Liaoning Province, Shenyang is the industrial center and aviation hub of Northeast China. The city is only 500 kilometers away from the North Korean border, and serves as a transportation and trade center with countries such as Japan, Russia, and Korea. Shenyang is known as one of China's original "heavy industry bases," featuring prominent manufacturing sectors for automotive components, building materials, agricultural product processing, chemical product manufacturing, and steel and non-ferrous metal smelting. Today, the city's economy also relies on electronics, textiles, and pharmaceuticals, as well as other light manufacturing industries.

In 2014, Shenyang's GDP reached RMB 709.87 billion, up six percent from the previous year. Primary industry contributed RMB 32.53 billion of total GDP, and secondary industry contributed RMB 354.1 billion. The service sector grew 6.9 percent to RMB 323.2 billion the same year. According to the most recent statistics released by Shenyang Customs, total import and export volume reached US$15.8 billion in 2014, with a growth rate of 10.6 percent. Imports to the city increased 18.7 percent compared to the previous year. The United States has become Shenyang's number one export destination and main trading partner in recent years. Major imports to Shenyang include automobile parts (particularly components of internal combustion engines), medicine and health products, steel, and pumps and liquid elevators.

Key Industries

Electric Vehicles

Shenyang's automobile market has been undergoing changes in recent years and offers exciting opportunities for U.S. companies engaged in the industry, particularly in electric car production. Heavy pollution in Northeast China has led to calls for more environmentally-friendly vehicles. In 2011, Shenyang was chosen by the central government as a model city for new energy vehicle promotion and

the city has since established a special R&D fund for electric cars and components such as batteries, electric motors, and control systems. Individuals and companies purchasing new energy cars will also be entitled to additional subsidies, which have led to increased domestic demand.

Industry in Shenyang still faces challenges, including the high cost of developing clean energy automobiles and a lack of "charging" infrastructure. In order to reach its industrial output target of RMB 750 billion by 2020, the city encourages domestic automakers to cooperate with overseas companies to build charging facilities and introduce foreign technology and high-end car manufacturing equipment.

Aviation Industry

Shenyang is one of China's primary aviation hubs and imports an array of advanced aircraft and parts such as aircraft motors and bearings. Driven by increasing demand, Shenyang recently signed new trade agreements with Wichita, Kansas with the aim of building future trade. Wichita is known as the "Air Capital of the World". Its economy is dominated by aircraft manufacturing and is home to many of the world's biggest airplane manufacturers, including Cessna Aircraft Co. and Beechcraft (merged into Textron Aviation).

While foreign investment in complete aircraft production and aircraft ownership remains restricted in China, exports of certain environmentally conscious and high-tech aircraft parts to local Chinese manufacturers can receive reduced import tariffs.

Biomedical Technology

Shenyang is currently looking to develop seven "strategic emerging industries," including new energy and biomedical technology. The city has recently set up a bio-medical industrial zone, which is located close to its airport and train station and specializes in developing chemical products, bio-medicine, modern Chinese traditional medicine, and medical devices.

As Shenyang's bio-medical sector is still at an early stage of development, the city has not yet acquired the capability to carry out independent research of new medicines and consequently relies on importing foreign medicine and medical devices to maintain growth. For the past several years, medicine and health products have featured in Shenyang's top 10 major imports. This trend looks set to continue as the local government introduces new incentives for foreign medical exporters.

Shenyang and Chicago Sister City Relationship

Shenyang maintains strong business connections with the United States. Shenyang became an international sister city of Chicago in early 1985 and has since worked closely with Chicago in certain sectors, including pharmaceuticals and education. Chicago has signed the Gateway Cities Agreement with Shenyang and seven other Chinese cities to fortify Chicago's position as a gateway for Chinese investment into the U.S.

Development Zones

Shenyang's main development zones include:

Shenyang Economic and Technological Development Zone
Approved by the State Council as a national-level development zone in 1993, the Shenyang Economic and Technological Development Zone features industries such as equipment manufacturing, automobiles, auto parts, chemicals, medicine, new materials, and bioengineering. Over 100 foreign companies have been established in the zone together with local companies such as Northern Heavy Industries and Shenyang Chemicals. The zone provides financial incentives and stipends for companies engaged in modern construction and software.

Shenyang-European Union Economic and Technological Development Zone
The Shenyang-EU Economic Development Zone is a new project launched by the Shenyang Municipal Government and is located in the central area of the Shenyang automobile industry zone. Though mainly focused on promoting investment from the European Union, the zone has also been making efforts to increase imports of high quality auto parts from all over the world, with an aim of building high quality automobile electronic parts and an advanced equipment manufacturing base in northern China.

Large European manufacturers such as Michelin and BMW have already set up factories and warehouses in the zone in order to facilitate trade and investment. Special tax benefits will be granted to car exporters or manufacturers seeking to start businesses with local carmakers in the zone.

Chapter 2: City Report

Shenzhen

Located in Guangdong province directly across the border from Hong Kong, Shenzhen is a major commercial and industrial center of the Pearl River Delta region. Until 1980, the city was a small fishing town, but was chosen as the site of China's first Special Economic Zone (SEZ) due to its proximity to Hong Kong. The Shenzhen SEZ was a forerunner for then-President Deng Xiaoping's experiments in market reforms, and today the city is one of South China's most dynamic and developed economies.

Shenzhen holds direct jurisdiction over six administrative districts and manages four new districts, covering a total area of 770 square miles. The sub-provincial city of Shenzhen is divided into six zones: Luohu, Futian, Nanshan, Yantian, Bao'an and Longgang. Until 2010, only Luohu, Futian, Nanshan and Yantian were included in the SEZ, but the SEZ has since expanded to include Bao'an and Longgang.

Shenzhen is one of China's fastest growing cities, and has the country's fourth-highest GDP, which grew by 8.8 percent in 2014 to US $250 billion. Shenzhen is heavily engaged in global trade, with one of the busiest container ports in the world. Foreign trade value grew by 15.1 percent in 2013, totaling US $537.36 billion. That same year, imports from the U.S. to Shenzhen totaled US $11.7 billion, while the city's exports to the U.S. totaled US $29.6 billion, ranking just behind Hong Kong and Japan.

Key Industries and City-City Relationships

Shenzhen and Houston, Texas became sister cities in 1989. Shenzhen has also maintained a sister city relationship with Reno, Nevada since 2008.

Energy

Shenzhen's energy industry is highly fragmented and inefficient. The city is trying to develop its energy sector and is currently experiencing high demand for oil and other energy products. As a result, firms may find opportunities in the city's growing energy sector.

Imported Food

Shenzhen's average monthly salary reached RMB 6,935 (USD $1,134) in 2015 – the third highest in China after Beijing and Shanghai. Rising incomes have brought changes to tastes and patterns of food and beverage consumption in the city.

China is the largest international market for U.S. foodstuffs, having imported US $25.9 billion in 2015. Shenzhen's proximity to Hong Kong, logistics capabilities, and SEZs make it an ideal location to serve as a port of entry for food imports into the Chinese market, an industry expected to be worth US $422 billion by 2018.

Computers and Internet

The Shenzhen government actively promotes the city's IT industries. Shenzhen's IT sector relies heavily on imports, particularly from the U.S. In 2013, Shenzhen imported over US $72.3 billion of integrated circuits to support the sector's development.

Shenzhen also plays a vital role in servicing U.S. demand for electronic equipment. The export value of data-processing equipment totaled US $33.7 billion in 2013, indicating the city's strong supply of certain electronics goods.

Qianhai Shekou New District

Officially approved by China's State Council on August 26, 2010, the Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone (Qianhai) was established with the aim of serving as an experimental business zone for better interaction between Mainland China and Hong Kong in the financial, logistics, and IT services sectors. The zone, which is still under construction, covers a 15 square kilometer area and provides various industry incentives and preferential financial policies. Once construction is completed, Qianhai will be within a 30-minute commuting radius of Hong Kong. Major industries in the zone include financial and information services, modern logistics, technology, cultural and creative industries, and professional services.

The Qianhai Bay Bonded Port Area, set up inside the zone to liberalize services trade between Hong Kong and Guangdong, includes seven warehouses and provides services such as international procurement, sales and distribution, international transit, R&D, and processing and manufacturing.

Earlier this year, Shekou area (a part of the Qianhai zone) was chosen for inclusion in the Guangdong Free Trade Zone (FTZ), one of China's four FTZs, which offer the lowest tariff rates and other preferential policies. This means that the Shekou area is able to enjoy incentives launched in both the Qianhai Zone and the Guangdong FTZ. Imported goods stored in the zone are exempt from import tariffs, and simplified customs clearance procedures implemented exclusively in the zone enable imported goods to be shipped into China within a shorter period of time.

Chapter 2: City Report

Tianjin

Tianjin is one of the largest industrial port cities on China's eastern seaboard and serves as a major national growth center. One of the five National Central Cities in the country, it is the largest coastal city in northern China and a hub for advanced industries and financial firms.

Tianjin is located in the Bohai Economic Rim, which is popular for heavy industries and manufacturing. The city has six urban districts. The central Heping district is one of the major business and commercial centers of the city, while most of Tianjin's popular hotels, restaurants, and shops are located on the south side. Tianjin's main international airport, Binhai International Airport, is around 8 miles (13km) east of the city center.

Tianjin's total GDP in 2014 was RMB 1.572 trillion (US $24 billion), while the city's per capita GDP stood at RMB 110,259 (US $17,126).

Key Industries

Tianjin's manufacturing sector makes up the largest part of its economy. Major industries include aviation, petrochemicals, textiles, automobiles, and metalworking. In addition, the rapid growth of the electronic and information technology industries contributed to a 19.6 percent increase in gross output value in 2013.

Aviation

The global aviation industry will have a turnover of US $2.5 trillion in the next two decades, according to a report by the Oxford Economic Research Institute and Airbus in June 2009. Much of this growth is likely to be from the Asia-Pacific region, with China expected to be the world's second largest aviation market by 2025.

The aerospace and aviation industry has grown at a rapid pace in Tianjin, particularly with Airbus' decision to build its first final assembly line in the city in 2006. The

government has built an 'Aviation Town' where most of the aviation industry is located. More than 50 suppliers from the U.S., Canada, France, Spain and Japan are in this zone. Chinese manufacturers and suppliers remain relatively undeveloped in comparison to the United States, creating space for U.S. companies to supply engines, avionics and other electronics to aircraft manufacturers.

Petrochemicals

The petrochemical industry contributes over 30 percent of Tianjin's economic growth. Fuel resources consist of petroleum, natural gas and coal bed methane (CBM.) While Tianjin is rich in natural resources, including oil and gas, the technology needed to develop the local industry is still comparatively undeveloped. U.S.-based companies that manufacture products catering to the offshore oil and gas industry may find a new customer base in the Tianjin-based petrochemical industry, including for parts and supplies, technological and machine equipment, and ships.

Metalworking

Tianjin is famous for its metalworking industry and is home to numerous metalworking firms. These firms supply several key industries in the area, including electronics, aviation, and machinery. While the U.S. metalworking industry receives competition from Tianjin exports, U.S. companies can identify niche and complementary products to access the market, particularly the ever-growing electronics industry.

In addition, U.S. companies that specialize in advanced systems – such as avionics and other electronic systems for the aerospace and aviation industry – find an excellent market in Tianjin. Tianjin is one of the largest manufacturing bases for vehicles in China, and the largest automotive logistical center in north China. U.S. metalworking companies can supply parts to the auto and component distributors in Tianjin to tap into the growing auto industry across China.

Free Trade Zones (FTZs)

The China (Tianjin) Pilot Free Trade Zone

The Tianjin Pilot Free Trade Zone (TJFTZ) consists of three zones across 46.3 square miles in Tianjin: the Tianjin Airport Economic Area, Dongjiang Free Trade Port Zone, and Binhai New Area Central Business District. The Tianjin Airport Economic area is home to around 12,000 businesses and over 160 investment projects. The Dongjiang Free Trade Port Zone hosts around 3,200 businesses and has extensive warehouse space, while the Binhai Central Business District area hosts around 2,900 businesses.

The State Council approved the overall plan for the TJFTZ on April 8, 2015, and the zone was founded on April 21. The TJFTZ will prioritize piloting programs to target administrative management, trade, investment, finance and the development of the Beijing-Tianjin-Hebei region. The zone offers interest rate liberalization and several other exemptions on duties. The TJFTZ is an excellent avenue for U.S. businesses to access Chinese markets at minimal costs.

Tianjin Port Free Trade Zone

The Tianjin Port Free Trade Zone was established in 1991 and covers an area of 2 square miles. The zone is linked with the Beijing-Tianjin-Tanggu Expressway and several railway lines. The central government has authorized the Tianjin Port Free Trade Zone to promote international trade, organize processing, distribute goods and services, and conduct commodity fairs.

The Tianjin Port Free Trade Zone offers a fast track for freight of any nationality, and has a number of other policies that make it advantageous for trade. The zone offers preferential customs clearances, taxation and foreign exchange, and offers good business opportunities for U.S. companies dependent on shipping either raw materials or finished commodities.

Chapter 2: City Report

Wuhan

Wuhan is the capital of Hubei province in Central China. Over the past decade, Wuhan has become the most affluent provincial capital among China's six central provinces. The city is now the economic, financial, trading, science, and information exchange hub of central China. The city is also an education center in the region with 85 higher educational institutions, including Wuhan University and Huazhong University of Science and Technology. Wuhan is a major national logistics hub in Central China – it has an established railway network, roads and expressways that connect the north-south and east-west traffic arteries (four trunk railway lines and six national expressways) and links the rivers with the sea. The Wuhan Tianhe International Airport connects Wuhan with major world cities, offering regular domestic and international flights. Historically, Wuhan has been one of China's most important inland river harbors, its role in domestic transportation lending it the title of "Chicago of China".

Located at the confluence of the Yangtze and Han rivers in the eastern Jianghan plain, it occupies an area of 3279 square miles. Wuhan is renowned in China as the "Riverside City" or "Water City" for its many lakes and pools, along with two main rivers, covering a total water area of 844.4 square miles. Its name comes from 'the three towns of Wuhan' – Wuchang, Hankou, and Hanyang. Present day Wuhan has a total population of 10.34 million people living across 13 districts.

In 2014, Wuhan had a GDP of US $153.14 billion (RMB 10006.9 billion) at a year on year growth of 9.7 percent – ranking it eighth among mainland cities based on GDP. The same year saw Wuhan's per capita income reach US $14,904 (RMB 98,000), imports US $12,638 million, and exports amount to US $13,791 million.

Key Industries

Wuhan is an old heavy industrial base in Central China. In 2014, the city's GDP was mainly divided between the established industrial sector (47.5 percent) and a booming services sector (49 percent). Pillar industries in Wuhan include automobile and auto parts, iron and steel, new pharmaceuticals, biology engineering, new materials industry, opto-electronics, environmental protection, renewable energy and energy efficient technology as well as research and development in telecommunications, laser technology, and microelectronics.

Aside from these industries, Wuhan has the second-largest concentration of metallurgical facilities in China. The city is also a center for the production of heavy machinery, glass, cement, fertilizer, textiles, cigarettes, food processing, home appliances, electronics, construction materials, packaging and printing equipment. The dominant service sector is based in the city's retail and distribution industry and the tourism and hospitality industry. As one of the most ancient and civilized metropolitan cities in China, Wuhan has several tourist attractions – Yellow Crane Tower, Baotong Zenist Temple, Guiyuan Zenist Temple and the Hubei Museum. The city's tourism industry earnings were US $28.9 billion (RMB 190 billion) in 2014.

Below are sectors of particular interest to American exporters:

Renewable Energy and Energy Efficient Technology

China has been rapidly increasing its focus on clean tech and renewable energy technologies, which is represented in Wuhan's industrial mix. This presents key business opportunities in the export of components, innovative solutions, and advanced equipment and technologies. State media reports have published the government's intent to spend US $738 billion on a ten-year energy plan that will invest in nuclear, solar, wind, and other non-fossil fuel energy sources. Further, investment and development plans project China's attempts to secure at least 15 percent of all energy from renewable sources by 2020.

China's Ministry of Environmental Protection has injected fresh impetus into the country's wastewater treatment and solid waste management. Wuhan has wastewater treatment facilities in its industrial zones and presents an important emerging market. The city is rich in fresh-water bodies and the local government has backed the improvement of wastewater and urban sewage treatment facilities, presenting additional export opportunities for U.S. suppliers.

Machines, Engines, Pumps

Wuhan is a traditional industrial base in Central China and provides ample scope for U.S. suppliers of equipment and parts directed at its diverse array of light and heavy manufacturing industries. Competition in this market is fierce, especially in Wuhan, which is expanding its infrastructural base and modernizing industries. This segment is a top performer for American exports and earned US $219.8 billion (13.6 percent of total exports) in 2014.

Retail

Retail is a pillar services industry in Wuhan (responsible for 37 percent of Hubei's retail sales in 2014). The government's latest attempts to boost consumption have meant that consumer market shares in second-tier cities such as Wuhan are growing faster relative to tier-one cities, as indicated in the data on sales across the board. Rising per capita disposable income has directly translated into rising per capita expenditure. Consumption habits of Wuhan's residents have diversified as major brands are accessible in the shopping malls and department stores.

Statistical research shows that key consumer groups with regards to brand consciousness and brand loyalty are government employees, white-collar workers, corporate elites, teachers, and university and research institute staff members in the 25-45 years age bracket . Fast fashion and affordable luxury have also become mainstream. This vibrancy in the retail market provides ample opportunities for American exporters – especially given Wuhan's positioning as a regional distribution center and gateway to the rest of central China.

Development Zones

Wuhan Donghu New Technology Development Zone

A national level high-tech development zone, the Donghu New Technology Development Zone's core industries are optical-electronics, telecommunications, and equipment manufacturing. The Wuhan Optical Valley (Guanggu) Software Park is also located in the zone, which is focused on software outsourcing. Other industries present include electronics and laser technology. Key firms include Changfei Fiber-optical Cables (the largest fiber-optical cable maker in China), Fenghuo Telecommunications, HUST Technologies and Chutian Laser.

Wuhan East Lake High-Tech Development Zone (ELHTZ)

This is a state-level zone and its target industries include photovoltaic products, environmental protection, renewable energy and energy efficient technology,

software development, bioengineering and medicine, modern equipment manufacturing, and new materials. The zone also hosts the Biolake industry base in the Optics Valley, which has six parks including the Bio-innovation Park, Bio-pharma Park, Bio-agriculture Park, Bio-manufacturing Park, Medical Device Park and Medical Health Park.

Wuhan Economic and Technological Development Zone

This is a national level industrial zone, established in 1993, that encourages the following manufacturing segments – automobile production and assembly, biotechnology, pharmaceuticals, chemicals production and processing, food and beverage processing, heavy industry, and telecommunications equipment.

Chapter 2: City Report

Xi'an

Xi'an is the capital of China's Shaanxi province and one of the country's Four Great Ancient Capitals. Home to one of China's most notable historical attractions, the renowned Terracotta Army of Emperor Qin Shi Huang, the city has a thriving tourism industry.

Xi'an is a sub-provincial city with direct jurisdiction over 10 districts and three counties, with a total population of approximately 8.59 million. Since 2000, Xi'an has benefitted extensively from the Chinese government's 'Go West' policy to develop China's western interiors. Xi'an forms part of the West Triangle Economic Zone in China, along with Chengdu and Chongqing. As the largest economy in China's northwest region, Xi'an was listed as one of the country's 13 emerging megalopolises in a 2012 report by the Economist Intelligence Unit.

The city's GDP was US $74.28 billion (RMB 488.41 billion) in 2013 – registering a growth rate of 11.1 percent year on year – and contributed 30.4 percent of Shaanxi province's total GDP.

The U.S. is Xi'an's largest trading partner. Kansas City and Xi'an became sister cities in 1989.

Key Industries

The five pillar industries in Xi'an are IT and high-technology, equipment manufacturing, tourism, modern services, and culture. The value added by these industries accounted for about 51 percent of Xi'an's GDP in 2012. Overall, industry contributed to 43.3 percent of the city's GDP in 2013 while services accounted for 52.2 percent.

Shaanxi province is rich in natural resources that feed into a range of heavy industries in Xi'an, including defense hardware, power transformers, steel production, non-ferrous metals, non-metallic minerals, fuel processing, and chemical products.

Other leading manufacturing industries include electronics, textiles, meters and instruments, aircraft, pharmaceuticals, building materials, and food products. The city has also made concerted efforts to attract multinational corporations (MNCs) such as Samsung and Bosch to strengthen its science and technology capabilities. State-owned factories in the area include the Xi'an Coal Mining Machinery Company and Xi'an Steel.

Xi'an has also seen the growth of domestic financial and professional services as well as software outsourcing, in which more than 800 firms are engaged. The city also recently completed a 'Software New Town' – an e-commerce and tech start-up hub in the city.

The tourism industry is one of the strongest growth areas of Xi'an's services sector due to the city's numerous historical sites, museums, hotels, and related tourist infrastructure. Xi'an is also China's third-largest education hub and the northwest region's retail center.

Machines, Engines, and Pumps

Xi'an is an old military industrial center. While the lead industry is equipment manufacturing, other important industries include machinery, automobile manufacturing, and metallurgy. This is helpful in understanding why mechanical goods, including those imported from the U.S. - such as machines, engines, and pumps - dominate imports bound for the city.

This is a growth opportunity for American exporters, as U.S. export data showed a negative trade balance for machines, engines, and pumps in 2014 despite the sector growing by 56.3 percent to reach US $219.8 billion.

Electrical Goods

Electrical goods continue to be a strong industry for U.S. exporters in Xi'an, as the city has a prominent defense sector, a nascent industry manufacturing LEDs and photovoltaic materials, and an expanding IT and hi-tech industry. The U.S. electrical equipment manufacturing industry has been in decline since the 2008 recession due to increasing international competition. Second-tier manufacturing cities in China such as Xi'an can become important markets for U.S. traders.

Retail

Xi'an is northwest China's primary retail center, and attracts shoppers from Shaanxi and neighboring provinces. Growth in this segment builds on the city's favorable

demographics, a large, well-educated workforce, and an expanding consumer class. Retail segments (clothing, footwear, toys and games) have thus far exhibited product trade balance deficits for the U.S. China's markets provide growth opportunities for U.S. exporters who can tap into the buying needs of a generation who are earning higher incomes and increasingly becoming brand conscious.

Development Zones

Beyond Xi'an's city center, economic activity is driven by several major specialized development zones. These may be noted by U.S. exporters looking to plug potential gaps in their supply chains.

Xi'an Hi-Tech Industries Development Zone (Hi-Tech Zone)
Xi'an's Hi-Tech Zone was established in 1991 and features electronic information, equipment manufacturing, biological pharmaceuticals, and automobile industries. MNCs present with production facilities or R&D centers include Samsung, Schneider Electric, BYD Auto, Micron, Applied Materials, Honeywell, Intel, IR Semiconductor, Infineon and NEC.

Xi'an Economic and Technological Development Zone
This zone was re-classified as a national-level economic and technological development zone in February 2000. The zone has developed facilities catering to manufacturing enterprises such as mechanical, electronic, light industrial and new materials. More than 3,600 companies are based here, including 30 'Fortune Global 500' companies such as BP and Siemens.

Xi'an Yanliang National Aviation Hi-Tech Industrial Base
(Civil Aviation Industrial Base – CAIB)
Set up in 2004 and with more than 300 enterprises, this zone is the largest aviation R&D, training and production base in Asia.

Xi-Xian New Area
The Xi-Xian New Area was approved in 2010 and is planned to comprise 10 industrial parks, including the Airport Comprehensive Bonded Zone and Jinghe Trade and Logistics Park. Located at the center of the eastern section of the "Eurasian Land Bridge," it is well-linked with other Chinese cities.

Chapter 2: City Report

Xiamen

Xiamen is a prefecture-level city in Fujian province, located on the Taiwan Strait along the southeast coast of China. It has an area of 656.14 square miles and a population of approximately 3.73 million. The city's urban area covers six constituent districts – Huli, Siming, Jimei, Tong'an, Haicang and Xiang'an – with a total urban population of 1.86 million people. Bordering the major cities of Quanzhou and Zhangzhou, it is one of China's major Hokkien-speaking regions and home to large communities of overseas Chinese.

Xiamen is part of the Fujian Free Trade Zone (FTZ) that was founded in the Mawei District of Fuzhou on April 21, 2015. Xiamen was chosen as one of four original special economic zones (SEZs) established when the country initiated economic reforms in the early 1980s. The city was ranked as the seventh best-performing city in China by the Milken Institute in September 2015, taking into account jobs and income growth, gross regional product (GRP), foreign direct investment (FDI), and the strength of its high value-added industries. The Chinese Academy of Social Sciences ranked Xiamen as the 17th most competitive Chinese city in 2014.

Since 1997, Xiamen has hosted the annual China International Fair for Investment and Trade (CIFIT) – China's only international bilateral investment promotion event. The city is well-connected by an efficient transportation network of trains and highways. The Xiamen Gaoqi International Airport offers daily flights to more than 40 domestic and international cities, and the Xiamen Port provides sea routes to Hong Kong and the Taiwanese island of Jinmen.

GDP for Xiamen in 2014 amounted to US $50.12 billion (RMB 327.36 billion), showing a per capita income of US $13,296 (RMB 86,832). Imports accounted for US $4.64 billion (RMB 30,328 million) and exports US $8.13 billion (RMB 53,161 million). In 2014, Xiamen ranked fifth in the list of the Top 100 International Trade Cities as ranked by the General Administration of Customs.

Key Industries

Services dominate Xiamen's economic output. Industry and manufacturing accounted for 44.6 percent of Xiamen's GDP in 2014, while services contributed 54.7 percent. Pillar industries in the city include electronics, machinery and equipment manufacturing, chemical materials, petrochemicals, ship and yacht building and maintenance , food processing, textiles, and tanning.

The huge services sector illustrates Xiamen's importance as a commercial and distribution hub in Fujian. Tourism is another key service industry, with Xiamen's tourism earnings ranking 24th in China in 2014. Major tourist attractions in the area include Gulangyu Island, Wanshi Botanical Garden, Nanputuo Temple, and Hulishan Fortress.

Electronic, Mechanical and Automobile Components

Since July 2014, China's Ministry of Commerce has removed 81 kinds of electronics, mechanics and automobile goods from the Automatic Import Licensing Catalogue. This has benefited importing enterprises in Xiamen, as they do not have to seek customs clearance. Each of these segments figure in the U.S.'s top four exports.

Xiamen also has well-established machinery and equipment manufacturing industries, and sales of its mechanical loaders have ranked first in the country in recent years. Exporters of electronic and machine components will find a strong market in the region, as will traders in the automobile industry. While Xiamen is a key distribution center in Fujian, the bordering city of Quanzhou is the biggest automotive market in Fujian with the highest rate of private automobile ownership. The Xiamen government is currently developing its marine industry chain and coastal industrial zone, featuring sewage waste management, petrochemicals, yacht manufacturing and maintenance businesses , which will be of interest to American manufacturers and suppliers of machinery, components and services.

Meat and Meat Products

Lamb and mutton have consistently featured in Xiamen's top imports. International trading partners are in regular demand to keep up with lamb and mutton's popularity in the city, especially during the winter months.

Meat is an important export category for U.S. agribusiness, but declined by 52.1 percent in 2014. Regional markets in China therefore provide ample scope for U.S. meat producers looking to enhance trade opportunities.

Wine

Xiamen is a major market for imported wines in Fujian province. Xiamen Customs reported that between January to February 2015 the total volume of wine imports in Fujian province reached 6.23 million liters, a 73.5 percent year on year increase,among which Xiamen's imported wine reached 4.65 million liters, an 89.4 percent year on year increase. Xiamen's wine imports accounted for more than 74.6 percent of the entire volume imported by Fujian.

Peak seasons are the Spring Festival and the Lantern Festival. The city's flourishing tourism industry also feeds into the burgeoning market for wines.

Free Trade and Development Zones

Xiamen Haicang Taiwanese Investment Zone

This 38.61 square mile-zone is the largest national Taiwanese investment zone authorized by the China State Council, and is situated close to Xiamen Port. Xiamen Haicang targets several specific industries, namely fine chemicals, electronics, electrical appliances and port logistics. Major investors are Black & Decker, Kodak, Spang, Hella, Magnetics, Jianying Technology, and Lianda Computer.

Xiamen Jimei (Xinglin) Taiwanese Investment Zone

Xiamen Jimei specializes in chemicals, machinery, textiles and electronics. Key investors include TDK Electronics, Linde Gas, Laiming Glass, Luda Industrial Group, and Zhengxin Rubber.

Xiamen Torch High-tech Industrial Development Zone

Situated close to the Xiamen Gaoqi International Airport, this zone targets industries such as IT, optical-mechanical-electronic integration, biology, and medicine. Important investors include ABB, DELL, Panasonic, Toshiba, Hitachi, Fujitsu, and Areva.

Xiamen Xiangyu Free Trade Zone

The Xiamen Xiangyu FTZ encourages industries such as electronics assembly and manufacturing, garment and textiles production, trading and distribution, R&D, shipping, warehouse and logistics. In 2008, there were 1100 enterprises operating in the zone.

Xiamen Export Processing Zone

Xiamen's Export Processing Zone is located close to the Haicang Port Area, 6.2 miles from the Gaoqi International Airport and 1.9 miles from the Haicang railway station. Target industries include biotechnology, pharmaceuticals, chemicals production, heavy industry, instruments and industrial equipment production.

Chapter 2: City Report

Zhuhai

Located in the center of the Pearl River Delta (PRD), Zhuhai is one of China's four original Special Economic Zones (SEZs) established in 1980. The city borders Macau to the south and is within an hour's drive of Guangzhou and Shenzhen. Since 1990, Zhuhai's economy has exploded, thanks in part to its proximity to Hong Kong and Macau. It is also China's only deep-water port west of the Pearl River.

In 2014, Zhuhai's GDP reached RMB 185.7 billion, an annual increase of 10.3 percent. The city's primary industry contributed RMB 4.9 billion of its total GDP, and its secondary industry RMB 93.9 billion, accounting for more than 60 per cent of the economy. Services comprised the remaining RMB 86.9 billion, of which modern services accounted for RMB 50.1 billion. According to the Zhuhai customs department, total imports and exports reached US$47.7 billion in 2015. The U.S. remains Zhuhai's third largest trading partner, and in 2014 exports totaled US$1.24 billion. Primary U.S. exports to Zhuhai include crude oil, integrated circuits, printing/publishing equipment and automatic data processing devices.

Key Industries

Zhuhai is now a major manufacturer of electronics, and the city is actively promoting hi-tech and high value-added industries such as software, petrochemicals and ocean-based industries. The city's primary industries are electronic information, bio-pharmaceuticals, petrochemicals, electrical appliances, precision machinery manufacturing and energy. The following sectors may be of particular interest to U.S. exporters:

Pharmaceuticals and Cosmetics

Zhuhai's local government is struggling to build a self-sufficient pharmaceutical and cosmetics industries, with domestic companies still largely reliant on importing foreign technology and products. Lack of manufacturing facilities and inspection equipment for drugs has greatly impaired the development of its healthcare industry.

In 2013, the Zhuhai government released preferential policies exclusively for enterprises engaged in selling/producing health food, medicine, medical devices and cosmetics. Foreign medical institutions are encouraged to export medical products to China and provide R&D services to Chinese companies. In particular, the Zhuhai local government actively supports the bio-pharmaceutical industry and recently invested RMB 1 billion to support the establishment of R&D centers. Qualified foreign medical institutions are granted financial support and stipends when exporting advanced medical technology to China.

High-tech Industry Cluster

The growth of the high-tech industry cluster (which includes software, integrated circuit designs, high-end equipment manufacturing and printing) is a top priority for the southern China manufacturing industry. In addition to China's national tax incentives (a 15 percent income tax rate) provided to high-tech enterprises, Zhuhai offers additional tariff exemptions to foreign high-tech companies who export key raw materials, parts and advanced technological devices to the city. Meanwhile, foreign companies who contribute to the development of Zhuhai's domestic high-tech industry (e.g., provide technical services/consultation to a local technology company) could qualify for financial incentives from the local Chinese government.

Electronics Industry

Seeking to develop the "internet of things", cloud computing, value-added internet services, telecommunication and high-end electronics manufacturing, Zhuhai provides various tax rebates and stipends for enterprises engaged in the electronics industry. In 2012, Zhuhai began offering financial incentives of more than RMB 50 million per year to companies involved in research and development of software and hardware technology. The Zhuhai government also seeks to create additional software parks and modern electronic information industry bases in the next few years to facilitate import/export procedures for high-end electronic products.

Development Zones

Zhuhai Economic and Technological Development Zone (Gaolan Port EDZ)

In 2012, the Zhuhai ETDZ, previously known as the Gaolan Port Economic Development Zone, was promoted as the first national economic and technology development zone west of the Pearl River Delta. It is one of southern China's most important large-scale comprehensive harbor industry zones and is focused on equipment manufacturing, petrochemicals and energy.

Zhuhai Hengqin New Area

Hengqin New Area, officially established in December 2009, is adjacent to Macau. As part of the One Country, Two Systems policy, the central government is trying to integrate the economies of Hong Kong, Macau and Mainland China. Hengqin is situated directly across the water from Macau, and as such is a pilot zone for integration. In early 2015 China included the Hengqin New Area in its newly established Guangdong Free Trade Zone. It offers China's most lucrative tax incentives and convienent 24-hour customs clearance services. Enterprises engaged in the area's preferred industries such as finance, tourism and R&D may enjoy a reduced 15 percent income tax rate, which is even lower than that of Hong Kong.

Goods imported to China via Hengqin Customs may enjoy deferred import value-added tax (VAT) and tariffs payment. Machines and office equipment sold to enterprises in the new area for their self-use or manufacturing purposes are exempt from customs duties. Enterprises trading goods within the Hengqin new area are exempt from VAT and consumption tax payments. In addition, comparatively lenient financial industry regulations in Hengqin facilitate cross-border trade in foreign currency and foreign exchange settlements.

Sister City Relationships

Zhuhai became the sister city to Redwood City, California in 1993. Business ties between the two cities began in the 1980s. Redwood City is home to prominent technological companies such as Oracle and Electronic Arts, which blends perfectly with Zhuhai's current development strategy.

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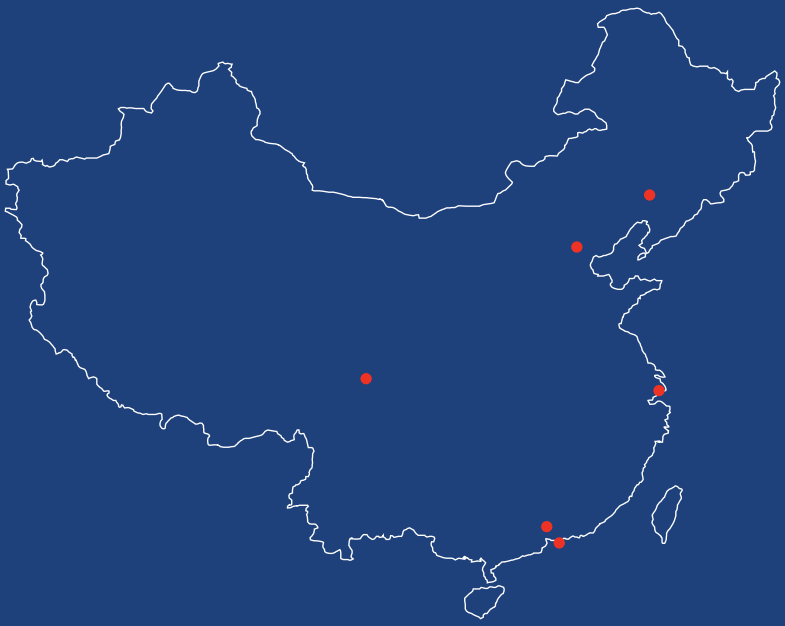

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