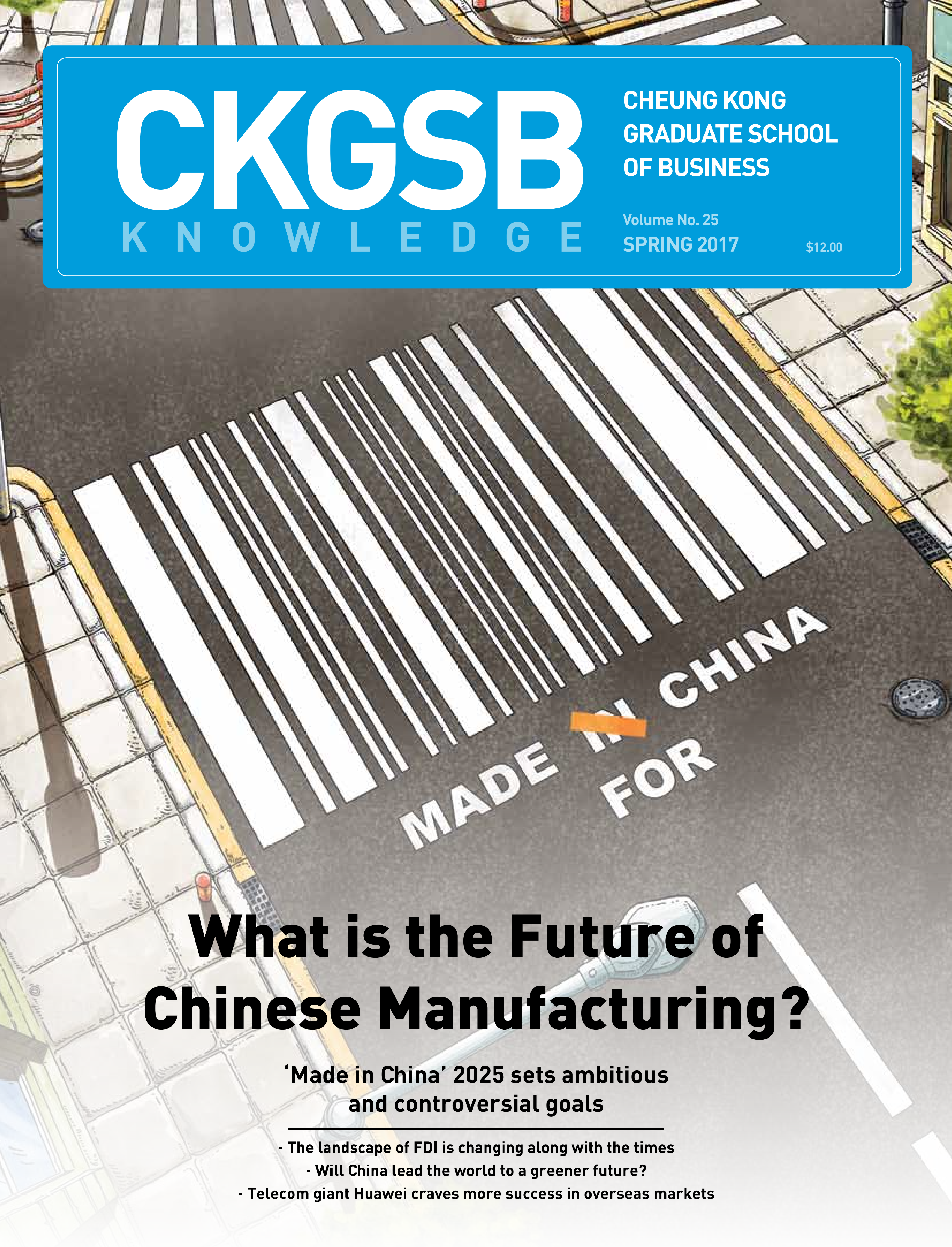
CKGSB KNOWLEDGE

CHEUNG KONG GRADUATE SCHOOL OF BUSINESS

Volume No. 25
SPRING 2017
$12.00



What is the Future of Chinese Manufacturing?

‘Made in China’ 2025 sets ambitious and controversial goals

- The landscape of FDI is changing along with the times
- Will China lead the world to a greener future?
- Telecom giant Huawei craves more success in overseas markets

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Dreaming of a Greener World
Can China lead the way to a better environment?

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Who's Afraid of M&A? 10
2016 was a banner year for Chinese mergers and acquisitions abroad. And while some feathers were ruffled, value was achieved

Issue: Spring 2017
Vol. No. 25

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ISSN 2312-9905

Publisher
CKGSB GLOBAL LIMITED
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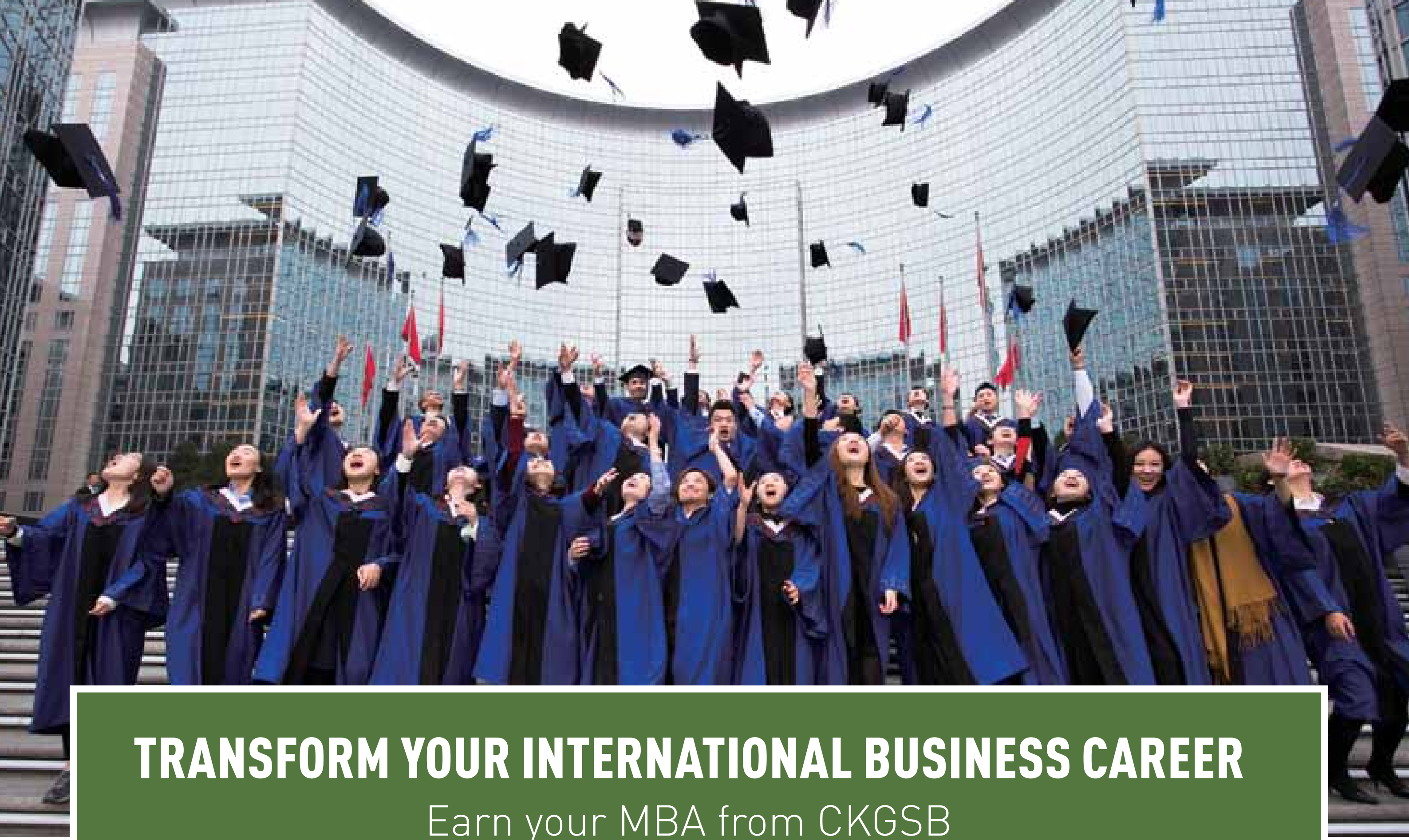


The Good of Cross-border Investment

In our commentary article in this issue of *CKGSB Knowledge*, we address a topic that has recently dominated the headlines in both Europe and the United States: Chinese outbound M&A (page 10).

For much of the past few decades, China has been among the world's principal recipients of foreign direct investment—indeed, FDI played a significant role in helping China to develop the powerful and dynamic economy it has today. This prosperity has, in turn, given Chinese companies the wherewithal to send investment back the other way, often in the form of cross-border mergers and acquisitions.

But controversy has dogged many of these recent deals, and in the current climate of resurgent nationalism in the West, politics has, as politics does, bestowed a kind of mythic significance on some of these business deals.

China's M&A activity around the world is not so easy to pigeon-hole, covering a wide range of countries, sectors, companies and goals. Insurance giant Anbang's unsuccessful $14 billion bid to take over Starwood hotels or LeEco's attempts to buy into multiple unrelated industries could be viewed as lacking market logic; Fujian Grand Chip's offer to buy the German semi-conductor company Aixtron may have had implications beyond the economic. But the M&A list also includes the purchase of Smithfield Foods by Shuanghui, which resulted in the creation of 1,000 new jobs in the United States, and ChemChina's takeover of KraussMaffei, which also came with a promise to create jobs. Geely's purchase of Volvo's automobile business brought the storied brand back from the brink of the void. Chinese M&A in many cases does provide value for all.

Our cover story, "Made in China, For China," on page 22 is also linked with the issue of Chinese M&A. Long the assembler of goods for other countries, China is looking to move up the value chain and increase its manufacturing capabilities. From car engines, to computer chips to advanced robotics, the government wants China to be able to produce core components and key technologies on its own. And for a profile of a company that is a good example of the process of moving up the value chain globally, please see "Good Signals" on page 48, about telecommunications giant Huawei.

Several of our stories in this issue relate to the increasing affluence of Chinese consumers. In "Navigating FDI" (page 28), we discuss changing investment opportunities in China, from building factories that produce exports, to investing in the service industry and chasing the Chinese consumer. "Flying High" (page 33) details the emergence of China's aviation industry, driven by hundreds of millions of fliers. On page 12, we delve into the challenged and changing world of physical retail in China in "Retail, Retold," and in "The VR Kingdom" (page 39), we take a look at the white-hot world of virtual reality, which, as you might guess, is driven by a belief in the buying power of Chinese consumers.

Two other articles deal, in different ways, with the subject of hope. "Dreaming of a Greener World" (page 17) assesses China's international climate change pledges, and its all-too-urgent pollution challenges at home. Then moving to a more personal level, we discuss the state of philanthropy in China in "It's a Given" on page 67.

Our interviews section (page 53) has, as usual, assembled a collection of leading thinkers and movers in various fields. Co-founder of MINISO, Ye Guofu, takes us inside his emerging retail empire. Andy Rothman, of Matthews Asia, tells us why, despite problems, he is so positive about China's future, particularly from a consumer market perspective. Author and analyst Damien Ma shares his assessment and predictions of economic reform in China, and finally, legendary Harvard business professor Clayton Christensen tells us how to innovate effectively.

As always, there is more than enough in this issue to think about and discuss. If you have any comments or opinions on any of our offerings, we would love to hear from you.

Yours Sincerely,

Zhou Li
Assistant Dean, CKGSB

For more insights on the Chinese economy and business, please visit the CKGSB Knowledge *site: http://knowledge.ckgsb.edu.cn/*

The stats you need to know

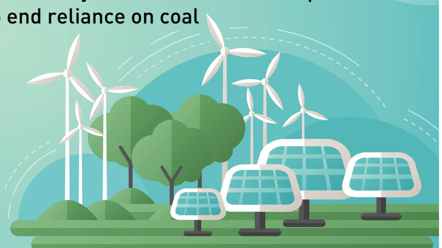
The Matrix is Hiring

According to research by Boston Consulting Group and AliResearch Institute, China's digital economy is likely to create **415 million** jobs by 2035 in fields such as IT and communication. The jobs will comprise nearly half of GDP, far exceeding jobs eliminated by technology

Source: Boston Consulting Group

Green Power!

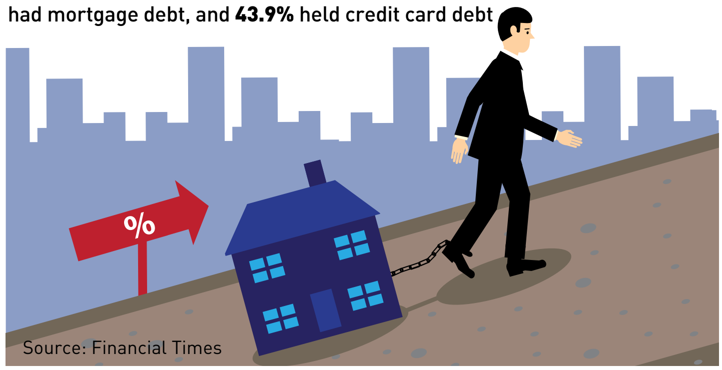
China plans to invest **$361 billion** into renewable energy by 2020, which the National Energy Administration says will create over **13 million** jobs. The investment is part of a continuing push to end reliance on coal



Source: Reuters

Debt goes Domestic

In a survey by Financial Times Confidential Research, **55.5%** of Chinese households now hold some form of debt. Of all households in debt, **40.9%** had mortgage debt, and **43.9%** held credit card debt



Source: Financial Times

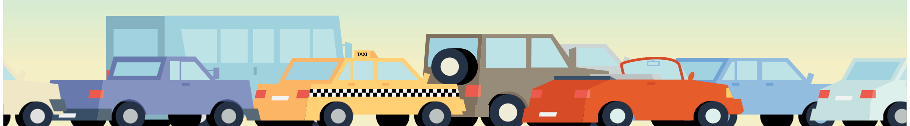
Euro Positive

In 2016, Chinese investment in the EU surged to **€35.1 billion**, driven by M&A. European investment in China, by contrast, fell to **€7.7 billion**

Source: Financial Times

Around and Around

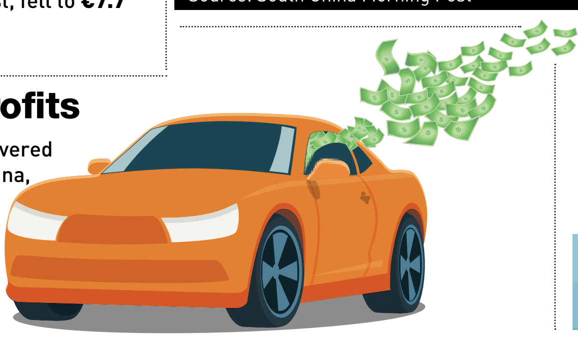
Beijing opened its seventh ring road, over **1,000km** in length. The road better connects Beijing to nearby Hebei and Tianjin and is expected to foster satellite communities. Beijing already has **21 million** residents



Source: South China Morning Post

Driving Down Profits

General Motors reported it delivered **7.1%** more cars last year to China, a record **3.9 million**. But at the same time, profit margins shrank in Q4 2016 to **7.4%** from **8.6%**



Source: The Wall Street Journal

Bon Voyage

The Chinese government launched a **$21 billion** overseas investment fund designed to support offshore Chinese companies, including those involved in One Belt, One Road projects

Source: Reuters

Run Aground

China's shipbuilders have been hit hard by slowing demand and overcapacity. The city of Yizheng, an industry hub in the eastern province of Jiangsu, had **24** shipyards last year, down from **41** at its peak

Source: The Wall Street Journal

Swap Meet

The Industrial and Commercial Bank of China (ICBC) has signed **$8.6 billion** worth of debt-for-equity swap deals. The effort relieves the bank of bad loans by transferring exposure to investors

Source: Caixin

Let it Go

China cut US Treasury holdings to just above **$1 trillion** in January, down **$7.3 billion** from December

Source: Bloomberg

Chipping In

Tsinghua Unigroup plans to build a **$30 billion** memory chip factory in Nanjing. The news comes on the heels of an announcement for a **$24 billion** chip factory in Wuhan

Source: The Wall Street Journal

Little Rice in Big India

Upstart phone maker Xiaomi surpassed **$1 billion** in sales in India in 2016, just two years after entering the market there

Source: Xiaomi

Bitcoin Bullish

The price of bitcoin rose **145%** in 2016 as the RMB slid **6.5%**. RMB transactions accounted for **98%** of bitcoin trading volume in the second half of the year

Source: Financial Times

Bailout Buddies

Technology company LeEco received a **$2.4 billion** bailout from a consortium led by a property tycoon. LeEco has faced cash troubles after a string of big acquisitions

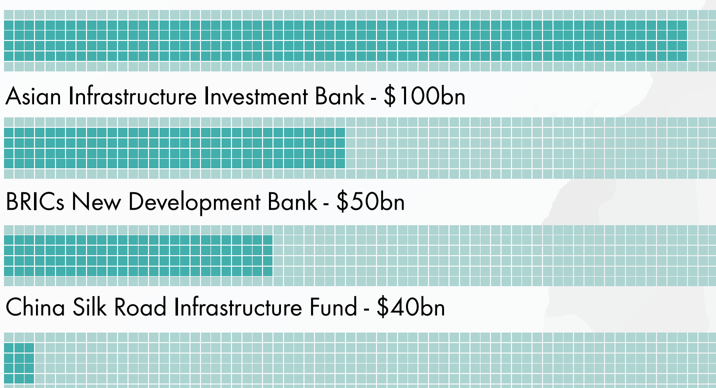
Source: Financial Times

The New Silk Roads

'One Belt, One Road' forges new connections

China's One Belt, One Road initiative is the fusion of two development schemes—the land-based Silk Road Economic Belt, and the 21st Century Maritime Silk Road. Together they comprise infrastructure projects aiming to improve trade between 65 countries containing 63% of the world's population, more than 35% of global merchandise trade, and 30% of global GDP. To date about $150 billion in investment has been committed.

A panoply of banks and funds are providing OBOR's financial muscle



OBOR Projects

Rail

- Moscow-Kazan High-Speed Railway
- Khorgos-Aktau Railway
- China-Uzbekistan-Kyrgyzstan Railway
- China-Thailand Railway
- Khorgos Gateway (rail shipping port)

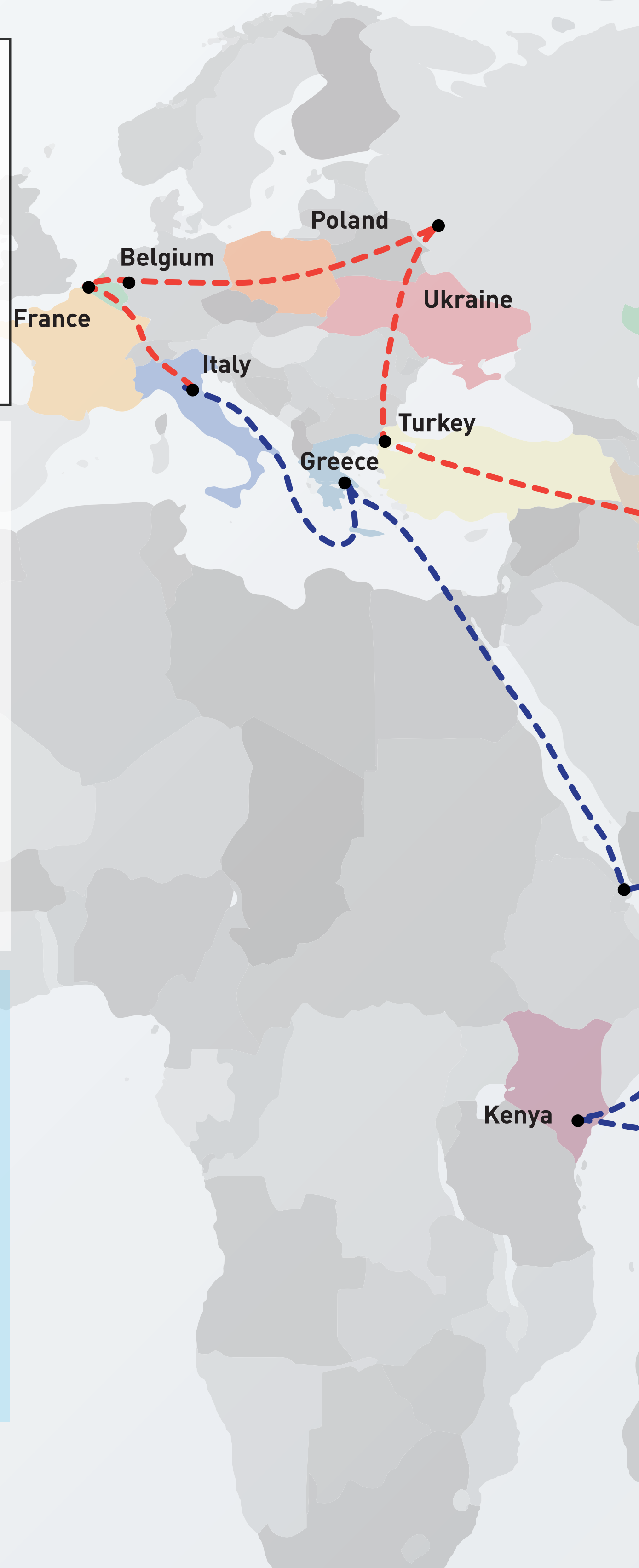
Energy

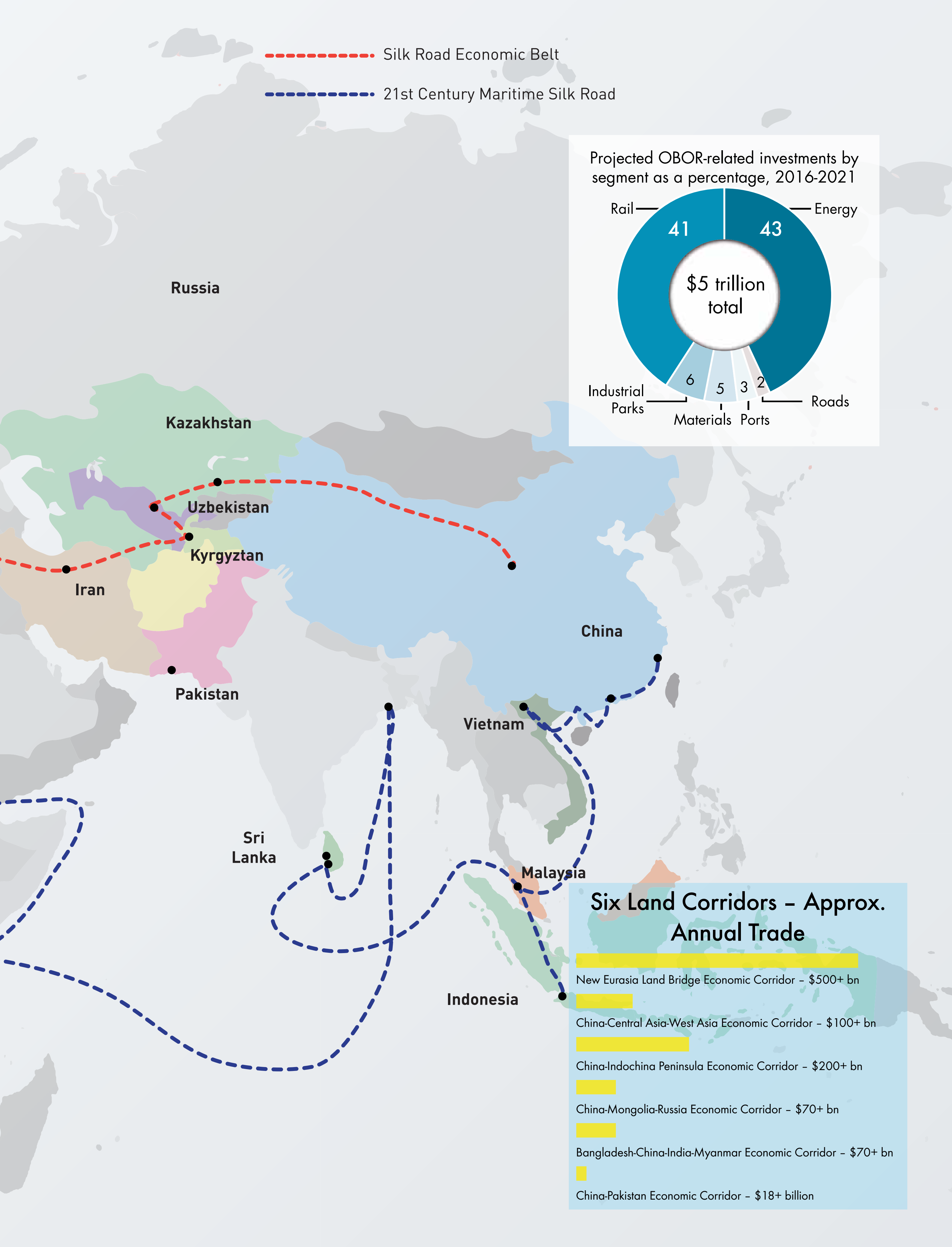
- Russia Gas Pipeline
- Central Asia Gas Pipeline
- Central Asia Gas Pipeline – Line D

Highway

- Western Europe-Western China Expressway
- China-Pakistan Highway

Source: HK TDC, McKinsey & Company, People's Daily





Silk Road Economic Belt
21st Century Maritime Silk Road
Projected OBOR-related investments by segment as a percentage, 2016-2021
Rail
41
Energy
43
$5 trillion total
Industrial Parks
6
Materials
5
Ports
3
Roads
2
Russia
Kazakhstan
Uzbekistan
Kyrgyztan
Iran
Pakistan
China
Vietnam
Sri Lanka
Malaysia
Indonesia
Six Land Corridors – Approx. Annual Trade
New Eurasia Land Bridge Economic Corridor – $500+ bn
China-Central Asia-West Asia Economic Corridor – $100+ bn
China-Indochina Peninsula Economic Corridor – $200+ bn
China-Mongolia-Russia Economic Corridor – $70+ bn
Bangladesh-China-India-Myanmar Economic Corridor – $70+ bn
China-Pakistan Economic Corridor – $18+ billion

The Road to *Gung Ho*

The difficult journey of Chinese outbound M&A may yet lead to a Hollywood ending

Thirty years ago, there was such nationalist angst in the United States over Japanese buyouts of American companies that Hollywood saw room to even make a movie based on the theme. In Ron Howard's 1986 comedy *Gung Ho*, the fictional Assan Motors Corporation swoops in to buy an idled auto plant in a desperate Pennsylvania company town. Despite the prospect of economic salvation, a culture clash ensues, pitting strict Japanese management against stubborn Midwestern workers, eventually threatening the futures of all involved. The film was a comedy and of course ended with cooperation prevailing and the plant being saved.

There is an obvious parallel with the situation today with the US agonizing over Chinese investments in a remarkably similar way to how it worried about Japanese takeovers in the 1980s. In 2013, the proposed $4.7 billion takeover of the American company Smithfield Foods, the world's largest meat producer, by a privately-owned Chinese meat processing company called Shuanghui (now WH Group Ltd.) created substantial controversy. At the time, it was the largest-ever overseas acquisition by a Chinese buyer and the deal stirred fears in the United States about the security and safety of food supplies, possible job cuts and a shift of the company elsewhere.

But the worries, as it turned out, proved groundless, and Smithfield's business today is booming, to the good of both the local economy in the US, as well as China. Since the acquisition, the new Chinese owner has recruited more than 1,000 new employees, and in 2015 raised capital investment by 24% to $313 million. Several years on, residents of the company's hometown in Smithfield, Virginia, who were once alarmed by the deal, now say those fears were unfounded.

The total for Chinese outbound M&A in 2013 was $68 billion, a record high that at the time raised quite a few eyebrows around the world. But it is a number that has been eclipsed every year since, ballooning to $220 billion by 2016. And despite successes like the Smithfield acquisition, global anxiety over Chinese M&A has ballooned along with the dealflow.

In another odd parallel, following the release of *Gung Ho* and its warm-and-fuzzy message on M&A, real-life Japanese acquisitions in America continued to grow for some years, and of course so too did the anxiety.

Sony's deal to buy Columbia Pictures in October 1989 for $4.6 billion prompted a huge backlash, including fears by some US lawmakers that Sony would use the company as a Japanese propaganda machine. Sony founder and chairman Akio Morita hastily organized a press conference at which he said, "This is not a Japanese invasion." The years turn, and today Sony is a Hollywood fixture.

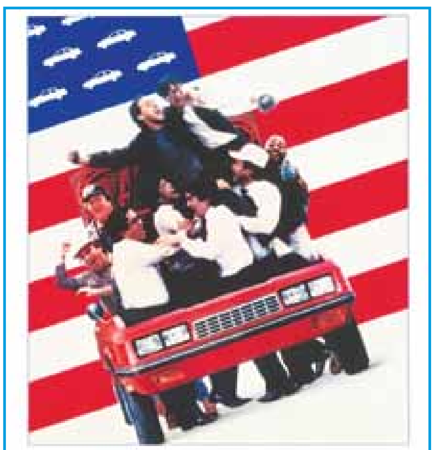
Then last year, Chinese property giant Dalian Wanda bid to buy the AMC movie theater chain and Legendary Entertainment, and 16 members of Congress wrote a letter in opposition. "Should the definition of national security be broadened to address concerns about propaganda and control of the media and 'soft power' institutions?" the letter said.

The height of both Japan's acquisition mania and American opposition angst came not long after the Sony deal, when Mitsubishi bought the Rockefeller in November 1989—the outcry over what was seen as selling out American heritage to the Japanese was deafening. Then in 2015, after Chinese insurance company Anbang purchased the Waldorf Astoria, President Obama snubbed the hotel, traditionally the New York City residence for presidents—supposedly due to concerns that the hotel could be bugged by the Chinese, a challenge that the Japanese companies would not have encountered when they "invaded the America."

There have also been deals that have raised concerns of a more strategic nature, with state-owned ChemChina's proposed purchase of the Swiss agrochemical giant Syngenta as an example. The monster $43 billion deal has been delayed by investigations from various regulators in Europe and the United States, mainly relating to monopoly and anti-trust concerns, but also food security worries.

But the most serious objections to Chinese M&A were raised in response to the proposed takeover of German chipmaker Aixtron by Fujian Grand Chip Investment Fund. Aixtron's shareholders accepted the terms of the takeover, but Germany's legislative body expressed concerns and the intention to place restrictions on sensitive acquisitions. The Obama administration eventually blocked the deal on national security grounds, pointing out that the semiconductors that Aixtron produces have military as well as commercial uses.

Around the time the Aixtron deal was drawing the attention of defense agencies, Chinese household appliance company Midea was bidding for the German advanced robotics company Kuka. A similar hubbub erupted, and while there were security concerns raised, the main complaints seemed to be related to the concept of a foreign company buying one of Germany's 'crown jewel' assets, just like



The poster from the 1986 film *Gung Ho*

In *Gung Ho*, there is an obvious parallel with the situation today with the US agonizing over Chinese investments just as it worried about Japanese takeovers in the 1980s

US concerns over the Rockefeller Center nearly 30 years ago. Ultimately the purchase of Kuka was approved and went through.

What Next?

Looking into the future, several trends appear favorable in terms of Chinese M&A achieving a balance with international expectations and requirements. The objective of many outbound transactions is to allow the purchasers to compete more effectively in the Chinese domestic market using acquired premium foreign resources. In other words, Chinese companies are figuring they can do better by leveraging global resources to serve the home market and combine both elements to emerge as great global business organizations. Fosun, the effective Chinese owner of ClubMed, Folli Follie, Cirque du Soleil and many other Western and Japanese household names, have purchased stakes in those companies to serve the growing demand of middle class Chinese customers. And their strategy has been, in their own words, "Capitalizing on China's Growth Momentum by Leveraging Global Resources."

Huawei is a role model for gradual global market expansion. Through cooperation and acquisition, it has developed new distribution channels in many countries and now has globally leading research centers around the world. With products and services that fully integrate global resources, about 60% of Huawei's total revenue in 2015 already came from outside China.

Regarding the form of investment, to deal with stricter domestic regulations and policy uncertainty overseas, besides full acquisition, there are signs Chinese companies may give more attention to equity participation, helping to lower overall cost and project risk. Such an approach is also more likely to lead to mutual trust and a community of shared interests.

Moreover, as Chinese companies become more experienced and accommodating, it should lead to more win-win deals, proving that cross-regional M&A can be a value-enhancing strategy for both Chinese buyers and the stakeholders of foreign companies. Local hosts as well can be helped by boosts to the local economy, and to employment—this was precisely the story of *Gung Ho*, and a similar real-life version is playing out right now in Ohio with a company called Fuyao Glass, which has invested over $1 billion across several Midwestern states.

Fuyao's Ohio plant will host 2,500 workers when fully operational, which is doubtlessly a huge positive, especially given that America's rust belt is struggling more now than in 1986. But culture clashes between workers and management have followed, including over the formation of a union, which was a major plot point in the movie.

Now thirty years old, *Gung Ho* appears dated, not least because the idea of Americans getting the jitters over Japanese corporate activity now seems farfetched. But thirty years from now, it could well be the same for Chinese firms, hopefully for the better to all.

Retail, Retold

Big challenges are forcing physical stores in China to adapt

By Helen Roxburgh

Image by AMAO

Physical retail in China, malls especially, is facing huge challenges from without and within. E-commerce offers value and convenience, and old stores were poorly built. The future requires a reimagining of what shopping can be

At the enormous Pacific Department Store on Shanghai's Huaihai Road, barriers block the street entrances and windows are shuttered. The store, one of the largest on one of the city's busiest shopping streets for nearly two decades closed in January, leaving a "Bye Bye Sale" banner still hanging above the entrance pillars. The shell of the store now sits incongruously opposite the K11 mall, which has been thriving ever since implementing a smart re-think of the shopping mall concept a couple of years ago.

The lesson of the different fates of these two shopping centers is clear—adapt or die. Retail is not declining in China, it's just changing. The growth of the country's consumer market has continued at an incredible rate in recent years, with retail sales up almost 10% in 2016, hitting $4.84 trillion. But the disintegration of the physical store market has been just as stunning, with a growing number of empty store fronts in every city in China.

The rise of e-commerce has hit retail sales hard, but an explosion of malls over the past decade is also a big part of the problem, giving China a glut of often poorly considered space.

"Many of these new retail projects were launched without proper research on the fundamentals: footfalls, occupier demand, shopping patterns and competition," says Harry Tan, Head of Research, Asia Pacific at TH Real Estate.

Gloomy forecasters warn of further physical shopping misery—a September 2016 report from the Chinese Academy of Social Sciences predicted that one-third of all shopping centers in China could be shuttered in the next five years, while at the World Retail Congress in April 2016, held in Dubai, China Chain Store & Franchise Association Secretary General Dr. Pei Ling said the Chinese domestic retail industry is experiencing the "toughest period in its 30-year history."

Under/Over

The emergence of China's consumer retail sector in the past three decades has mirrored the country's rise to economic powerhouse status. Driven by what was originally a huge shortage of retail space and the assumption that a growing middle class would create enormous demand, developers began churning out chain stores and Western-style malls at an unprecedented rate.

The shift appears to have left developers nonplussed. In 2015, 60% of the world's shopping malls under construction were in China, according to US-based commercial real estate services agency CBRE, with 4.1 million square meters in Shanghai, 3.4 million square meters in Shenzhen and 3 million square meters in Chengdu, the top three cities on the global list. To put those figures in some visual context, Shanghai alone was building the equivalent of about 16 Empire State Buildings that year.

China today holds nine spots among the top ten most active cities for shopping centre construction globally, with some experts predicting that as many as 7,000 new malls will open in China by 2025. Vice-President of property developer Wanda Group, Wang Zhibin, at RREM 2016, a Chinese real estate industry conference, outlined plans to open 60 new Wanda malls on top of their existing 133 locations.

There are some good reasons for wanting to expand retail locations—building the retail sector in China is essential as the government shifts away from manufacturing as the economic core, and not all consumer purchases fit the online model. But there has been an issue with quality, which has not always been world-class.

"Over the past decade, an unprecedented amount of retail development has taken place in China," says Tan of TH Real Estate. "Due to over-developments during this period, a significant portion of malls have been hastily built by developers whose previous experience was in residential developments, where the strategy is to pre-sell in order to generate quick cash flow, in order to fund future developments."

But in the end, the customers just were not there. This dislocation between supply and demand was partly due to local governments, which pushed developers to build

> **Our malls are becoming one-stop lifestyle destinations that offer ‘retailtainment’**
>
> Jason Leow
> CEO, CapitaLand Mall Asia

malls to boost tax and land incomes, as well as local employment.

“There wasn’t any fundamental knowledge or experience about what it took to build a successful shopping mall,” says Melanie Alshab, Managing Director at Kensington Asset Management. “It was part of a ‘Build It and They Will Come’ mindset.”

Indeed, a 2015 study from Jones Lang LaSalle, a commercial real estate services and investment firm, concluded that only 10-15% of China’s shopping malls were “international-grade,” meaning a lot of substandard malls.

Worst Netmare

Exacerbating this problem of oversupply is the continued rise of an already gargantuan e-commerce sector. The internet first came to China permanently in 1994, and e-commerce giant Alibaba was founded in 1999, when internet penetration was still in the low single digits. By 2015, internet penetration had topped 50% and Alibaba had exploded into a multi-billion dollar company.

This enthusiastic adoption of online retail has caused trouble for developers. According to the National Bureau of Statistics, online sales boomed in 2016, surging 26.2% on the year before to reach RMB 5.16 trillion ($751 billion), around 15.5% of total retail sales, online and offline.

In comparison to physical retail, e-commerce in China is convenient, competitively priced and well-organized. This is particularly true in remote areas, and the latest retail data from the government shows stronger growth in rural areas than urban ones. And with hundreds of millions of smartphone users in China, mobile sales are also soaring. Market research firm eMarketer predicted that in 2016 mobile would make up half of all online sales (final numbers have yet to be tallied), and that by 2019, mobile consumers will spend $1.5 trillion annually, a quarter of all retail sales.

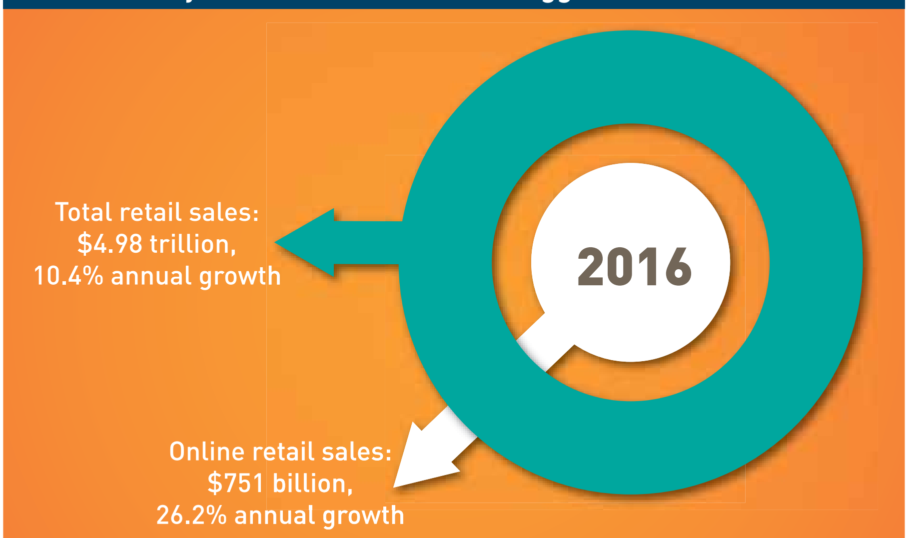
“E-commerce is probably the single biggest force exerting pressure on traditional shopping malls,” says Steven McCord, Head of Retail Research for Asia at Jones Lang LaSalle. “Online retail accounts for most of the growth in China’s retail sales, eroding growth that previously might have gone to malls. Its effects are most keenly felt in sectors like fashion that once were shopping malls’ traditional bread and butter tenants.”

Unsurprisingly this has spelled trouble for most malls (although not all). Combined with the oversupply of retail space, much of it poor quality, the industry is facing a sizeable structural problem. Retailers and department store operators have already begun closing shops. Malaysia-based Parkson, which operates more than 70 department stores in China, closed several stores last year following a 58% drop in China net profit. Lifestyle International, which operates the Jiuguang upmarket department stores, closed its Shenyang store in December, two years after it opened. New World Department Store China warned in its 2016 financial report that it was getting tougher to compete with online shopping amid a massive supply of shopping malls.

Malls are not the only retail class struggling in the face of e-commerce. British retailer Marks & Spencer announced recently it would soon close all its ten stores in China, although it will keep an online presence in the market. And China’s online grocery market is predicted to grow nearly five times its current value of $41 billion by

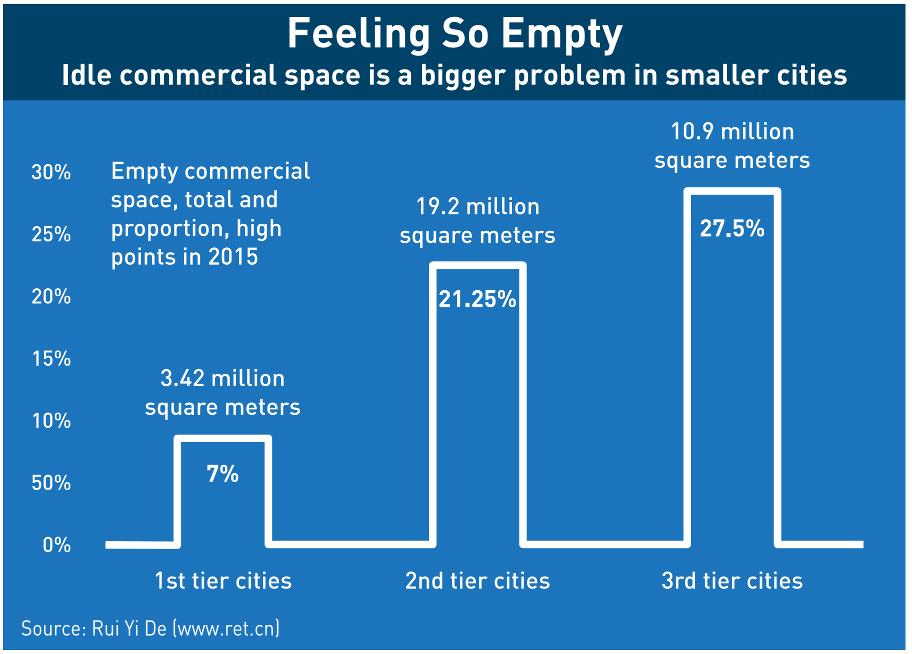
e-Tailing It

Physical retail is still much bigger than online



Source: National Bureau of Statistics of China

2020, a sign of trouble for physical grocery retailers. Carrefour has closed nearly 30 stores in China in the last three years, planning instead to expand its Carrefour Easy convenience store range, which also offers pick-up for online shopping. Walmart has also hit its share of troubles, saying in 2015 it was closing some China stores in underperforming areas while opening another 115 and expanding its online offerings.



Reboot

But as many retailers struggle, there are also investors looking to buy existing developments in good locations and perform turnarounds. A fund run by Gaw Capital acquired Beijing's Pacific Century Place mall for $928 million in 2014—previously a struggling department store. The new project was repurposed to target Beijing's more discerning consumers, with "mini blocks" of retail and increased dining space. The transaction landed Gaw the Asia Deal of the Year Award from PERE, Private Equity Real Estate news, an industry publication.

"We have seen repositioning of many under-performing malls over the years," says Tan. "For instance in Beijing's Zhongguanchun district, the 'Silicon Valley of China,' many malls that once sold electronic devices are now housing startup technology firms and incubators. This trend is likely to persist, and going forward we should expect to see a significant number of de-centralized malls being repurposed or redeveloped."

Operators are also repositioning malls from being merely shopping destinations to entertainment complexes. Malls in China are leasing as much as half of their space to restaurants, cinemas, language schools, medical centers, theme parks, museums, spas and more. Shopping spaces with a specific niche attractive to the new middle class are also doing well, which is why K11 is thriving just next to the failed Pacific Department Store. The complex hosts big-name art exhibitions including Monet and Dali, in-mall experiences such as the K11 Garden, plus design-focused stores and newer brands.

"Given that product purchases can now be made with a few clicks on a smartphone, shopping malls need to evolve from being mere collections of stores and products to become lifestyle destinations," says Jason Leow, CEO of CapitaLand Mall Asia, which has 56 malls in China, and ten more in development. "To cater to these trends, our malls are becoming one-stop lifestyle destinations that offer 'retailtainment,' which includes experiential retailing, food and beverage, and leisure and entertainment options."

More mall operators are also integrating loyalty schemes to both reward customers and build their own customer database. CapitaStar, CapitaLand's loyalty service lets shoppers reserve car parking spaces, locate shops and promotions within the mall, earn reward points, and queue digitally at restaurants.

"CapitaStar provides us with an expanding database of shoppers' habits and tastes through information collected from spending at our malls," says Leow. "This information helps us enhance the customer experience."

Integrating physical and digital is becoming increasingly common at well-operated shopping centres. The two Shanghai shopping malls of Hong Kong property developer Sun Hung Kai Properties use iBeacon, a protocol developed by Apple, to identify the exact location of shoppers within a store and send relevant messages and offers through their smartphones. Touch-screen platforms, e-signage and video walls are common in newer generations of malls, along with free Wifi, enabling stores and mall operators to collect and analyze data about their customers.

Let's Get Physical

As the shake-up in the industry continues, e-commerce operators have also been moving into physical retail, further blurring the lines between online and offline shopping. Online giant Alibaba has led the charge. In January, Alibaba announced it was taking a stake of 74% in department store operator Intime Retail, which operates 29 department stores and 17 shopping malls in China. Alibaba also has a stake in Chinese retailer Suning.

Other e-commerce giants are moving to compete with Alibaba's O2O efforts, with varying degrees of success. A 2014 much-publicized $3 billion joint venture to "revolutionize mall shopping" between online giants Baidu and Tencent, with property company Wanda Group, fell apart after Baidu and Tencent backed out quietly last year. At the time, they imagined the world's largest e-commerce platform, helping shoppers to find products in malls and retailers to better manage their payments and data.

While still in experimental stages, industry experts agree that the integration of online and offline must be the way retail develops. Even the government is in favor of integrating the two, with China's State Council issuing a note in November 2016 to encourage the transformation of retail supported by data technology, calling for more innovation and cross-discipline integration.

However, even though some developments can be repositioned as modern, digital-focused malls, many cannot.

"In China, they often build in concrete, they don't use steel, and one of the things about a shopping mall is that it has to change in order to stay relevant and interesting," says Alshab. "When looking at second- and third-generation malls, even before you talk about any new technology, you really need to go back to the basics and look at the way they are built. These first generation shopping malls, which are now looking at attracting new tenants, new types of entertainment clients, they physically can't change their space and it's very difficult. In these cases, the only option is often to knock them down and rebuild."

The style of financing retail development in China has also created problems with flexibility. Selling an individual store or floor—known as strata-titling—was popular where developers needed a quick return on capital, but renders a mall-wide regeneration almost impossible.

"In cases where wholly owned malls in tier one cities have persisted as under-performing assets, we have seen some of these properties sold off. Investors have been interested in the properties with high conversion or upgrade potential," says McCord. "But closures are most common in retail properties that aren't wholly owned and are instead strata-titled. Strata-titled malls tend to be lower-end, and it has been difficult for them to mount coordinated efforts to adapt themselves to new shopping trends. Most of China's so-called 'ghost malls' emerged from this sector."

> Over the past decade, an unprecedented amount of retail development has taken place in China
>
> Harry Tan
> Head of Research, Asia, TH Real Estate

Concrete Psychological Value

But regardless of any and all challenges, there is an enduring need for retail spaces. The presence of stores is very important in brand-building—especially for high-end brands, many of which find their stores serving almost as showrooms to a mobile consumer that eventually buys outside China, where they can avoid eye-wateringly high import taxes. Brands such as jewelry boutique Tiffany says Chinese consumers are their biggest purchasing group, even though China is not their biggest geographical presence.

US technology giant Apple has recognized this trend, and created popular stores where shoppers go to browse, play, touch and see the goods, without facing pressure to buy on the spot. And China is still where brands often want to open their first Asian store. Children's department store Hamleys opened its debut China store in October, while UK department store House of Fraser opened its inaugural store in December. Adidas has plans for 3,000 new stores in China by 2020, and coffee giant Starbucks says it will open 500 new stores annually for the next five years.

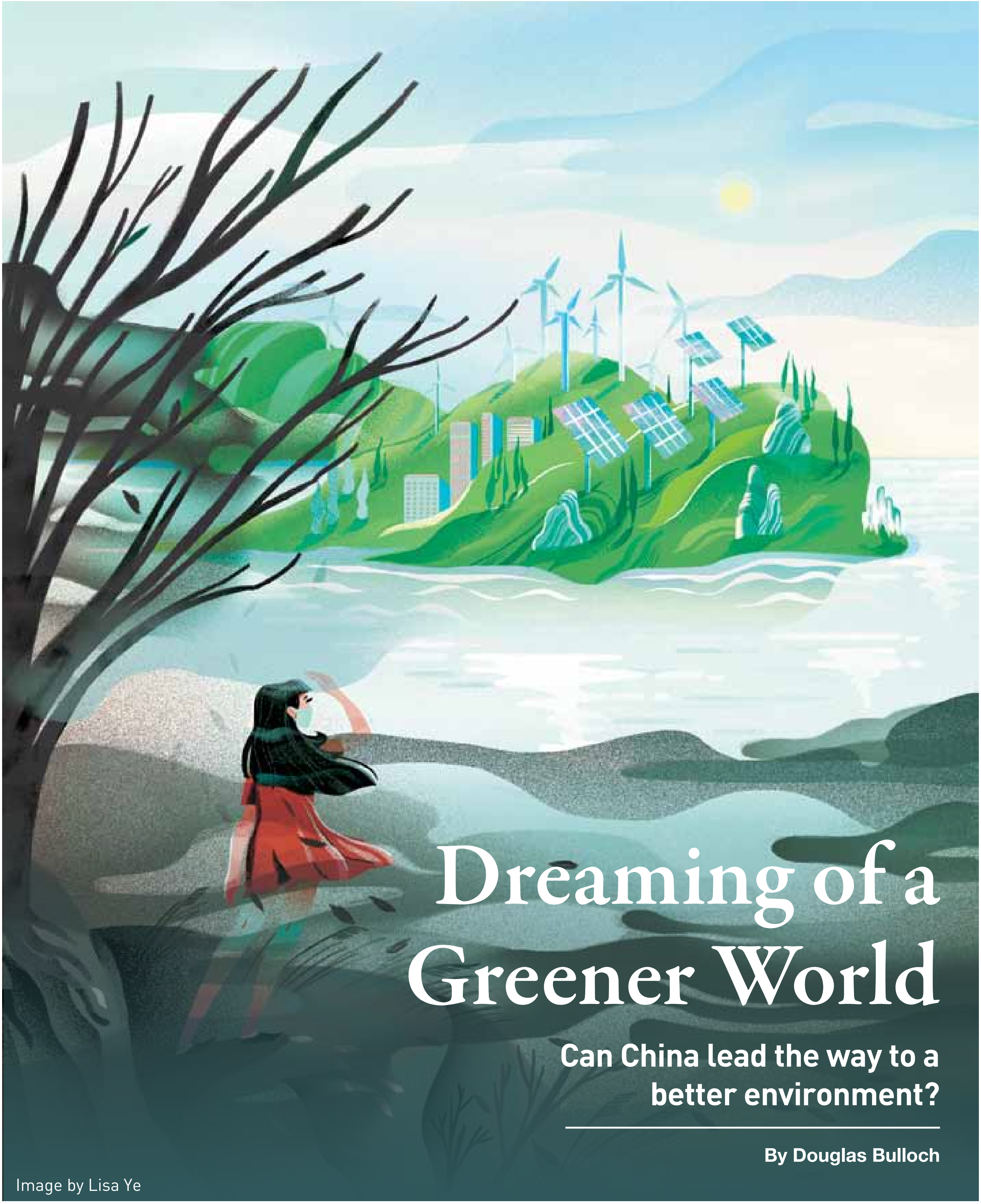
Lingerie chain Victoria's Secret made its first foray into China last year, and opened a new flagship store this year on Huaihai Road, just a stone's throw away from the shuttered Pacific Department Store. The new lingerie store will replace a now-closed Louis Vuitton boutique, perhaps representing the shift away from large luxury product houses.

With demand ongoing for the right type of retail, developers in China are gradually adapting to build higher quality malls and take a longer-term role as retail landlord.

"Shopping mall developers and operators have had to step up their game to survive in a more crowded, more competitive marketplace," says McCord. "Several years ago it was possible for some local developers to get away building second-rate copies of a Wanda Plaza, but now they need to build to at least to Wanda's standard while also finding ways to distinguish their environments and shopping experiences from all the other malls going up at the same time."

Retail in China is going through a process of maturing and changing, but it is far from obsolete. Instead, physical retail in China is growing up. Consumers still want an attractive and pleasant physical space where they can interact and socialize, and a new generation of malls that mixes retail and entertainment fits their demands well. Enthusiastic consumers want to try the latest restaurants and browse in the stores of exciting, fresh new brands, and they have disposable income to spend. But e-commerce and mobile shopping is only going to grow, and the future of China's physical retail sector is certain to be with those mall operators who work with, rather than against, digital shopping.

"Physical retail remains an important part of a shopper's journey, complemented by digital channels that augment the buying experience," concludes CapitaLand's Leow. "Retailers now recognize that omni-channel is the way to go."



Dreaming of a Greener World

Can China lead the way to a better environment?

By Douglas Bulloch

Image by Lisa Ye

Just a few years ago, China was a major obstacle to a global agreement on climate change. But the attitude of the government has changed, to the delight of all. That said, it will take more than good will to clean up

In September last year, China finally ratified ambitious targets for the reduction of CO_2 levels through the lessening of carbon intensity and improvements in environmental regulation. The targets, agreed at the Paris Climate Conference in 2015, marked a surprising turnaround for China, which, at the Copenhagen Summit in 2009, determinedly blocked environmental restraints on its developmental trajectory.

Since that 2009 low point, the world has seen the emergence of the word 'airpocalypse' to describe the toxic miasma that now often enshrouds Chinese cities, an air pollution nightmare that has sharply pushed up mortality rates for residents.

The scale of China's dilemma and the ambitious edicts emerging from Beijing have cultivated a sense that it could take on a global leadership role. But the reality on the ground is still so far been mixed.

The government has invested heavily in renewable energy, becoming the global leader by a wide margin, with a third of the total in 2015. But at same time, the country is still heavily reliant on coal—to say nothing of the problem of idle wind and solar capacity. Additionally, last year China massively ramped up its issuance of so-called "green bonds" to finance projects, coming out of nowhere to make up more than a third of the global market. But looser domestic standards are cause for pause.

And although the intense focus on reducing air pollution is doubtlessly good, water or soil contamination gets decidedly less attention, despite being potentially more serious. And even so, the air scarcely seems to be getting better—by official counts, in 2016 Beijing had 12 more "blue sky days" than the previous year, but still nearly half the year saw moderate to severe pollution.

The rising pressure on Beijing to act is therefore mostly domestic. The smog wave of recent years has raised "doubts about the government's declared 'war' on air pollution," according to Gavekal Dragonomics, a Beijing-based macroeconomic research firm. Indeed, last December the foul air prompted environmental protests in the southwestern city of Chengdu and the sharp response from the authorities suggests that the central government is rattled.

What this means is that despite the positive signals of Beijing's international agreement, the moves it is making are not fundamentally internationally focused, says Damien Ma, Fellow and Associate Director of the Paulson Institute Think Tank, which focuses on US-China relations and sustainable growth.

"China was going to take a lot of these actions anyway for its own national interests," he says.

But either way, given the size of China, what it does to address pollution domestically has international significance. In this way, the problems may be seen as an opportunity to lead—if China can get a grip on the domestic crisis.

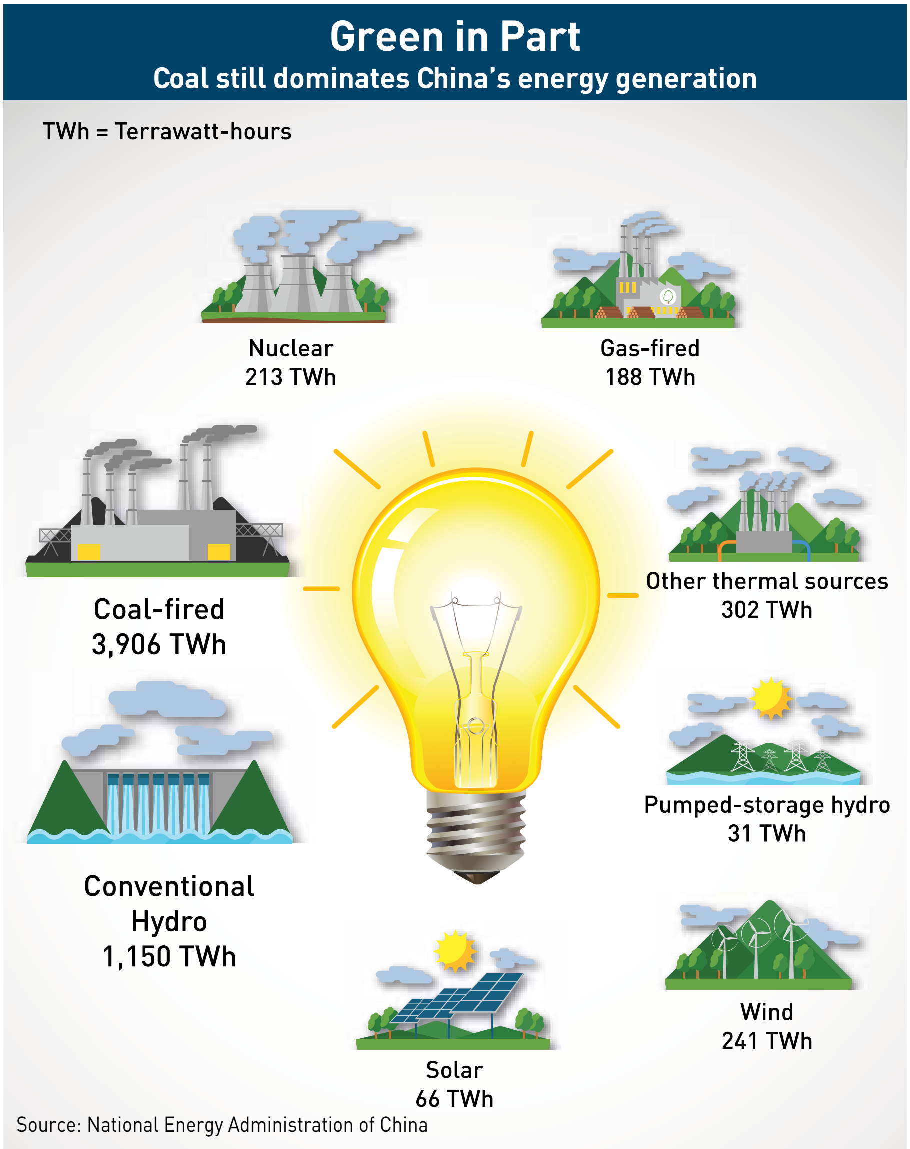
Internalizing Externalities

The wider backdrop to the failure of Copenhagen was of a world reeling from financial crisis and of China launching an enormous stimulus program to keep growth rolling, the bulk of which constituted big capital investments. The none-too-subtle message was that the environment would have to wait, which played into the notion that economic growth and environmental protection are naturally opposed.

But grappling with the real cost of the externalities—that is, the hidden costs of pollution—have helped force a rethink. The World Bank estimates that unconstrained pollution cost upwards of 5% of GDP for China as long ago as 2003; current forecasts estimate continuing costs of approximately RMB 1 trillion ($145 billion) per year.

Putting these externalities in human terms is all the starker. According to the Global Burden of Disease Study, published in the prestigious medical journal *The Lancet*, air pollution in China caused 1.2 million early deaths 2010 alone.

But the bigger driving factor may be the visibility, or lack thereof, that comes with the choking smog. The problem is just so extensive that the old methods of deny and condemn no longer work—it is in the face of every citizen with disturbing regularity. Damien Ma even thinks an overlooked silver lining in this cloud of acrid smog is simply that it is very intense in Beijing, which



he says is a good thing "because it will continue to garner political attention."

Supporting this view, a recently published book, *The Economics of Air Pollution in China*, written by Ma Jun, Chief Economist at the People's Bank of China (PBOC), lays out "ten specific policy measures to drive structural adjustments" premised very much on the necessity of doing so rather than on ambitious estimates of the benefits. The plain fact that the Chief Economist at the PBOC has published such a book must be taken as a measure of China's commitment, but interestingly, the book "examine[s] the likely impact of [the recommended] policy measures" calculating that they "will not lead to a substantial deceleration of economic growth from 2013 to 2030."

There are also extensive environmental reform commitments within the latest Five-Year Plan (FYP), currently being expanded into regional and sectoral details. The significance of this cannot be underestimated.

"[In the past] officials would have mixed messages coming from the center, on the one hand to protect the environment and on the other hand to boost GDP growth, when they knew that really the only one that mattered was GDP growth," says Sam Geall, Research Fellow on Low Carbon Innovation in China at the University of Sussex. Now, he believes the political priorities have changed. "If you have environmental violations on your record they stay on your record for the rest of your career… that helps to shift the ways in which things move at a local level."

What all this means is that the CO2 commitments within the Paris Agreement are just the secondary co-benefits of dealing with the atmospheric particulates cloaking China's skies.

"China has a huge pollution problem—one might even say, a pollution crisis—that has become a public concern it can no longer ignore," says Patrick Chovanec, Managing Director of Silvercrest Asset Management. "If China's environmental policies are changing, it has more to do with that far more immediate concern than with 'climate leadership'."

It should, however, be acknowledged that the Paris Agreement is an important, if insufficient, step. At least now there is a framework established to which further reforms might be attached, even if China's domestic problems were a key inspiration.

Energy Synergy

The more concrete part of this story is China's leading position in new energy technology, which touches on economics and politics at multiple points.

Geall says there is a growing strategic alignment behind "technology leadership, moving China up the value chain, making China a leading supplier of the technologies [to] supply power to the rest of the world [and] restructuring the economy away from heavy industry." The fact is that there may be a large economic upside to dealing effectively with pollution.

China has for some years been at the forefront of investment in renewable energy. In 2015, a UN report revealed that China invested $102.9 billion in renewable power generation, more than the next three largest spenders—the US, Japan and the UK—combined. So "if you talk about leadership in terms of the highest value investment in solar and wind, [China has] been a leader for the last few years already," says Ma.

The important part here is the state-led nature of China's economy, which means that China has been able to cheapen new energy technology in a way other countries have not.

"In subsidizing and scaling up wind, solar, and lithium-ion battery technologies and enabling these technologies to fall rapidly in price… they are already competitive in many places for newly-added power generation," says Anders Hove, Associate Director for China Research at the Paulson Institute in Beijing.

The overall situation, challenging as it is, has surprising synergy. In the first instance, China's own thirst for energy has no discernible upper limit, save the level of pollution it generates, which is forcing it to move away from coal. Secondly, its desire to move up the manufacturing value chain and foster innovation has found a good outlet in renewables. Thirdly, the prospect of new markets around the world for homegrown technology is only going to grow exponentially, and lastly the possibility of greater energy self-sufficiency would always appeal to China's very geopolitically-minded leaders.

It was the state-driven technology and manufacturing progress, Damien Ma thinks, that laid the foundation for all the other progress so far, as it allowed predictions of peak coal consumption, and the commercial logic of such a switch to encroach upon the realm of plausibility.

It could be that we are witnessing not the reluctant assumption of green leadership on the part of China, but the flowering of a longer-term strategy to support renewable energy technology. Fortunately for China, these renewable technologies have made faster progress than anticipated, providing China with a first-mover advantage when considering the global energy transformation anticipated by the Paris Agreement.

"China is already a clean energy powerhouse, and I expect export of clean energy technology and know-how—including policy know-how—to accelerate rapidly," Hove says. "Promoting clean energy investment helps China's exports, and dovetails with long-term efforts to win friends in developing-world countries."

Policy Pinch

But for all these vaunting ambitions, there remain obstacles. In the first place, the contribution these technologies make to the overall energy profile in China remains small, just 13.3% in 2016, as opposed to 64% for coal-fired power. Moreover, China still plans to expand coal-fired power capacity by 19% by 2020.

Secondly, pollution-intensive heavy industries, such as steel, still comprises a very significant, although gradually declining, part of the Chinese economy. Furthermore, these heavy industries are dominated by old state-owned enterprises, which have until now served as the principal destination for growth-seeking stimulus.

Indeed, when discussing the scale of the recent smog problems in northern China, Ma makes clear that "there is a setback right now because they have been stimulating their economy," revealing that, at a practical level, growth still displaces environmental progress when priorities clash. "It's extraordinarily tough right now because they are facing a lot of downward pressure on the economy, and they are left with few good choices."

A more complex problem with rolling out more and more renewables is simply that the electricity grid is not equipped to absorb it all, politically as well as in terms of infrastructure. Last year, China actually reduced its 2020 target for renewable energy by 27% largely because "the State Grid has their own ultra-high voltage technology and they want to connect to coal plants."

As a result, much installed renewable energy capacity sits idle. The Jiuquan Wind Power Base in the Gobi desert of northwestern Gansu province hosts more than 7,000 wind turbines that can together generate enough power for a small country. And yet 60% of that capacity goes unused.

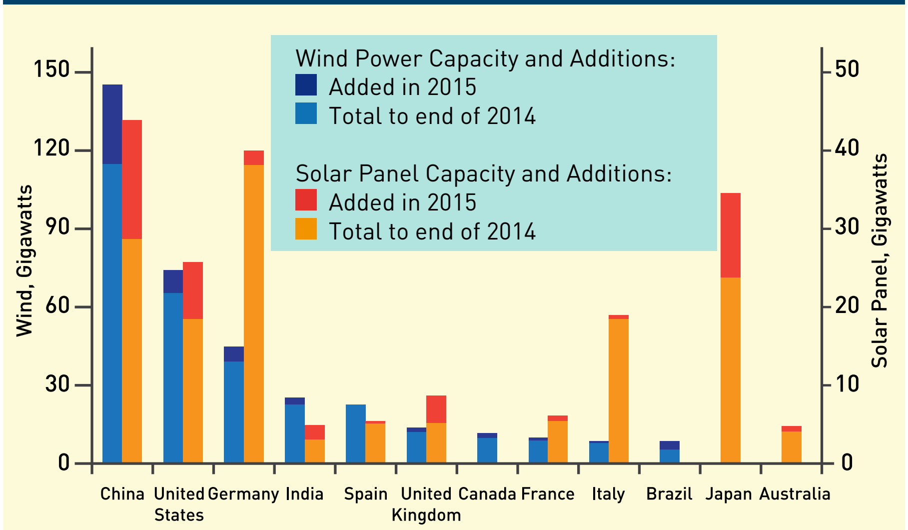
Nevertheless, China does have plans to upgrade its electricity grid, allowing lower voltage inputs to be distributed effectively, meaning this delay may be just a case of the grid not keeping up with the pace of renewables generation.

Meanwhile, Geall notes the significance of the recently announced "commitment to spend about $360 billion to 2020 on renewable energy, which should create about 13 million green jobs." He suggests this can be interpreted as more than just a well-timed announcement but that "there are consistently ambitious policy statements coming out that certainly look like a bet on a low-carbon future."

One drawback in the focus on energy generation, however, is that some other

Green Powerhouse

China leads the world in renewable energy capacity



Source: REN21 Renewables 2016 Global Status Report environmental issues have been sidelined. A study by the Chinese government last year, which surveyed 2,103 wells in eastern China, found that 80% of them were unsafe for drinking, and nearly half were unfit for human consumption of any type, including industrial use. Although China has announced plans to tackle this problem, there has been little if any improvement so far, and it gets nowhere near the media coverage that bad air gets.

But in the short term, these competing investment, growth and environmental priorities are, according to Geall, "precisely where the rubber's going to hit the road," meaning that structural difficulties remain to be overcome in China. However, he concludes optimistically that China is inevitably "going to be balancing those different impulses over the next few years."

Burdens of Leadership

Aside from investment in renewables, leadership is often framed as influence over standard-setting and willingness to share a collective burden. Here, China has less of a track record.

Kai Olsen-Sawyer, Senior Research and Policy Analyst, at GRACE Communications Foundation, which promotes sustainable and renewable solutions for food, water and energy systems, suggests that China faces questions over its "transparency in greenhouse gas reporting, which is unreliable and may mask pollution." He adds that "without trust in Chinese emissions reporting, skepticism about their actual reductions will remain, their credibility will erode and, ultimately, it could all hobble their ability to lead."

Equally, Andre Brandao, Head of HSBC's Climate Business Council, said in December last year, when reporting the results of an HSBC business survey, that "a low-carbon economy depends on a strong ecosystem for green financing and investment." He went on to make the point that this requires moving towards "a framework for standardised climate disclosure [and] more production and consumption of climate research" which rather reinforces Olsen-Sawyer's observations.

Green bonds, which help finance environmentally friendly projects, have however been on the rise in China. The country issued its first green bond in 2015, and last year issued bonds totalling $36.9 billion, about 40% of the total world market. But as in other areas, this may be less great than it seems. About one-third of China's green bonds are up to China's domestic standards of what kinds of projects qualify, but not up to international standards. For example, some of the bonds funnel money into so-called "clean coal" projects, which international standards reject as invalid.

Nevertheless, some are encouraged by China's approach so far. Although a relatively new institution "the first round of the Asian Infrastructure Investment Bank projects have all been pretty positive and the standards they are using for lending are all the same as ADB and the World Bank etc." says Geall.

tegic objectives. Damien Ma stresses that now "the growth target … is the overarching problem," adding that "if they just relax that a little bit, that opens up a lot of room for other priorities."

Opportunity Knocks

China's official attitude towards environmental protection has clearly changed dramatically in recent years, but it will be a long time before the smog lifts. In this sense the idea that China will be a 'Green Leader' anytime soon says more about how far they have to go than how far they have come. Yet in recognizing their problems and directing investments towards new technologies, China has stumbled upon a realistic expectation of leadership in the energy technologies of the low-carbon future.

In policy and standard-setting, China still drags its feet, if only because it sees only

> **China was going to take a lot of these [environmental] actions anyway for its own national interests**
>
> Damien Ma
> Fellow and Associate Director
> Paulson Institute Think Tank

Even if China merely manages to keep up with Western standard-setting, that will nevertheless have an enormous international impact, but in any event the Chinese clearly view leadership more in terms of investment and technology than in standard-setting at this stage.

Finally, recent hints from within the Chinese leadership indicate the possibility of a downgraded growth target, which will again reinforce the connection between high growth and low environmental standards, but may herald the acceptance of the idea that helter-skelter growth rates are perhaps as much part of the environmental problem as they are a solution to other stra-

the downside of making international commitments to do things that may prove difficult to implement—the Paris commitments, for example, are not binding. But in terms of investment, productive capacity and exports, China will inevitably be a 'Green Leader' because it is already way ahead.

Despite this, however, the scale advantages accrued by China's sizeable early investments in green technology are dwarfed by the enormity of their problems right now. Because pollution is damaging people's health, leadership has become an absolutely necessary aspiration for China, if only because they have so much ground yet to cover.

Made in China, For China

The Middle Kingdom seeks to replace foreign manufactures with domestically-produced goods

By Tom Nunlist

Image by Wei Bingnan

Under the banner industrial policy, "Made in China 2025," China is seeking to replace the advanced foreign manufactured goods that it has long relied upon with domesticlly-produced goods. But the effort is spooking the foreign business community, and the plan may not address China's most genuine needs

In October 2008, the PC manufacturing giant Hewlett-Packard (HP) announced it would be opening a PC manufacturing plant in the southwestern city of Chongqing, the company's second facility in China. At the time, Chongqing, a megacity almost on par with Beijing and Shanghai, did not produce a single computer—today it makes 35% of the world's total, around 100 million units annually. Such is China's success story.

But "Made in China" can be a deceptive slogan. With those HP PCs made in Chongqing, for instance, only 10% are assembled with central processing units (CPUs) that are made in China—the rest use Intel chips that are imported. The Chinese government is on a mission to change this. In 2014, it established the China IC (integrated circuit) Industry Investment Fund, worth nearly $22 billion, to advance the industry.

Chips, however, are only one of China's targets. Under an ambitious policy called "Made in China 2025" (MiC 2025), unveiled in 2015, China is aiming to make 40% of so-called "core components," that is the key parts of finished items, such as CPUs, across 10 technological areas by 2020, to be increased to 70% by 2025. In addition to IT, the 10 key areas prominently include robotics and automation, new energy vehicles and aviation. But the policy is about more than just investing money in these industries.

"Instead of just looking at those technologies in isolation, there is a focus on patent standards, getting people from different parts of the value chain to work together," says Lance Noble, Policy and Communications Manager at the European Union Chamber of Commerce in Beijing. He describes the target sectors as force multipliers across the economy. "Perhaps you could say [the policy is] 1+1+1=10 instead of 1+1+1=3."

But such a plan, which is explicitly aimed at substituting imports with locally-produced items, is raising concerns in the foreign business community in China, as well as from foreign governments. Some of the steps taken to progress the policy, such as government-backed cross-border mergers, have created serious political tension.

But there are also domestic reasons to question the basic premise of "Made in China 2025" and related efforts—they are fundamentally state-directed, instead of market-based. The plan to boost manufacturing "without solving concrete institutional problems, and [with] decisions [that] are not really made by entrepreneurs" is misguided, says Xu Chenggang, Professor of Economics at the Cheung Kong Graduate School of Business.

Precise details of the implementation of the grand policy are only now beginning to emerge. For Chinese companies, the real long-term impact of the plan is at best unclear. But for foreign companies, although there will be business opportunities in the short-term, the plan as a whole presents big challenges to their future in China.

Inclination for Innovation

"Made in China 2025" made quite a splash when it was first announced by the Chinese government in May 2015. The industrial plan is, according to the *South China Morning Post* and others, at least partially inspired by Germany's similar effort, Industry 4.0, which aims to create smart manufacturing and integrated supply chains. While those goals are certainly within the framework of China's plan, MiC 2025 spans many more industries than Germany's initiative, with self-sufficiency in core technologies being more clearly the goal. But the plan is also a continuation of earlier Chinese policies.

"If we look at it at the abstract level, just the highlights, then it doesn't look like anything new," says Xu. China has long been development oriented, with ambitious targets attached to all sorts of industries, from wheat to steel. "Those kinds of central planning goals have been there all the time."

But MiC 2025 has a more direct policy ancestry over the past few decades. The term "indigenous innovation" began to appear in the mid-1990s and referred to the need for China to advance economically by developing technologies on its own. The idea gained currency as China gained economic strength, eventually becoming an official policy in its own right.

"This drive for a new growth model actually started in 2005 under the [Hu Jintao] administration," says Jaqueline Ives, Research Associate at the Mercator Institute for China Studies (MERICS), in Germany.

MERICS released a white paper on "Made in China 2025" and its consequences for foreign business in December 2016, which also discusses the underlying economic urgency for China to advance in its manufacturing capabilities.

"Why it's so urgent is because China faces so many challenges at the moment, [such as] the stagnating economic growth rate, [and] rising wages," says Ives.

Pushing the process forward means changing systems and moving up the value chain—it simply is no longer good enough to be the world's factory, even for high-end goods like iPhones. China neither produces the key parts of the iPhone, nor does it own the underlying intellectual property, which is where the true value lies.

It should also be noted that in the realm of mobile devices, China has in the past few years produced several brands that compete with Apple, including Xiaomi. But Xiaomi is still ultimately beholden to foreign companies like Qualcomm for its chipsets, and to Google for the Android operating system. Without these foreign suppliers, China's smartphone sector would have a tough time, and that's precisely why the government wants to push development in those key areas.

"A big part of the 'Made in China 2025' framework is to try to make sure that domestic companies develop the kinds of technologies that China has considered to be strategic," says Jacob Parker, Vice President of China Operations at the US-China Business Council in Beijing.

Implementation

Making sure domestic companies develop strategic technologies is a lot easier said than done and the details of what needs to be done to meet the requirements of MiC 2025 differ significantly from one industry to the next. But one universal key component is cheap money to fund R&D, and the government is stepping up to provide this.

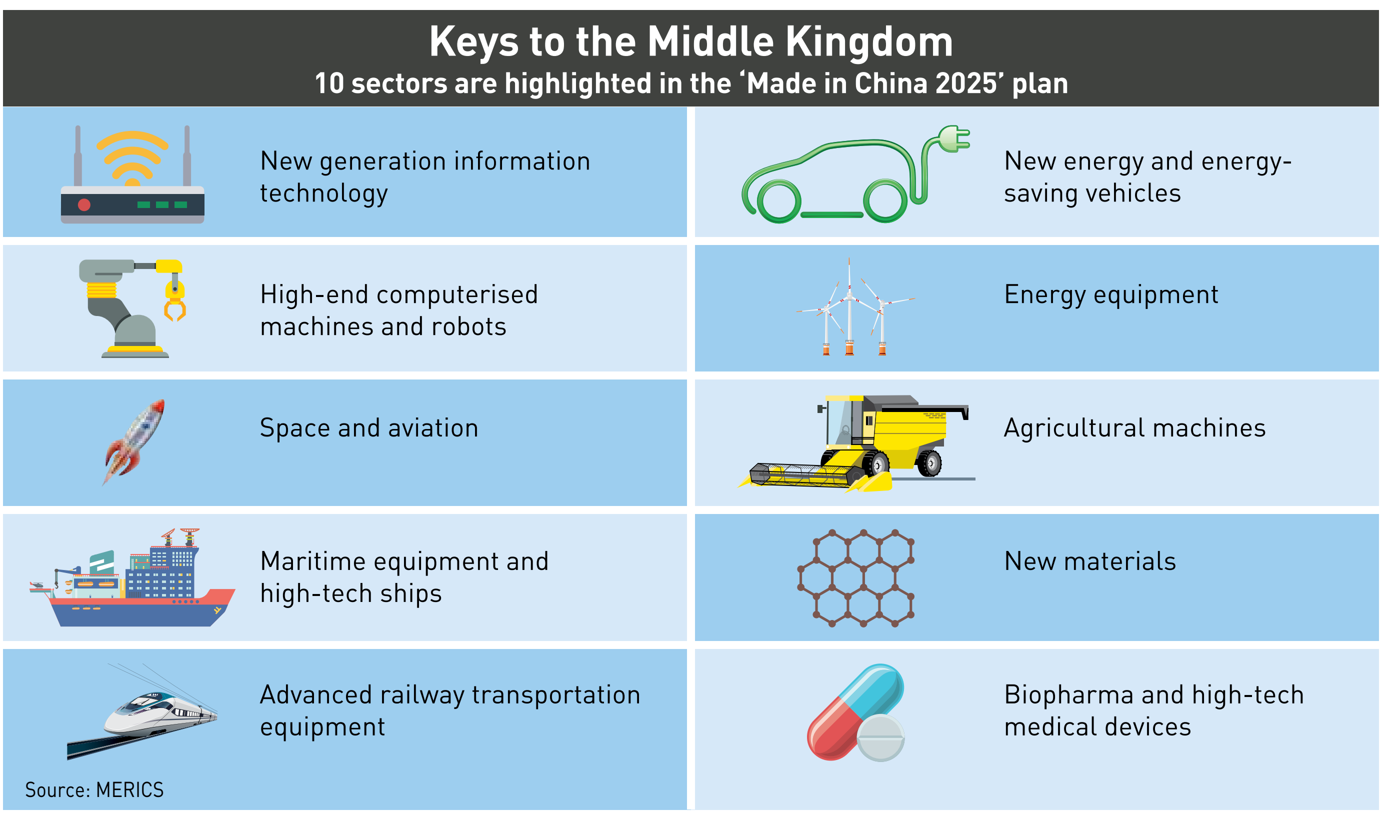
"[Chinese companies] could have very low-interest loans, so the cost of capital is much lower," says Parker.

In addition to the $22 billion chip fund, Guangdong province alone has committed $150 billion to equip its factories with robots. Chinese automaker BYD, which has become a leader in electric vehicles, had received $435 million in government support by the end of 2015. Subsidies exist on the buyer side as well—purchasers of battery electric vehicles that are made in China can receive up to RMB 55,000 against the price.

But a policy of marketplace favoritism does not necessarily mean that the real goal of closing the technology gap will be achieved. This is where foreign companies may be encouraged to partner with Chinese companies and may be in a position to make a lot of money.

"Generally speaking, that [opportunity] tends to be in the areas where the technological gap is larger," says Noble.

But these opportunities, many of which are available to joint ventures, tend to come with strings attached. Those strings may include a requirement on technology trans-



fers and the sharing of raw data, especially in heavily emphasized areas such as smart manufacturing.

"Any time you have anything operating over the internet, especially in an automated facility, you are constantly collecting data on the health of the system and any problems that arise," says Parker, noting developing regulations on cross-border data flows. "How you manage that data is something that will need to be considered."

Noble warns that companies that are welcomed into the China market today because they have some technological edge might find themselves being forced out a few years later, which is exactly what happened with European companies that helped China develop high-speed rail more than a decade ago.

"Based on past experience, it's entirely possible that this is another import substitution plan," Noble says.

But joint ventures and other forms of cooperation are not the only way for China and Chinese companies, either owned or supported by the state, to close the technology gap. It is also possible to acquire the necessary IP and experience outright through cross-border M&A, but this has proven to be extremely controversial at times.

> Without important institutional reforms, if [the government] pushes, things can get much worse
>
> Xu Chenggang
> Professor of Economics
> Cheung Kong Graduate School of Business

Manufactured Tension

In May of last year, German chip manufacturer Aixtron entered an agreement to be acquired by the German subsidiary of Fujian Grand Chip Investment for €670 million. The German government initially approved the deal in September, but put the deal on hold the next month following a vehement political outcry, not only in Germany but in the wider European Union and in the United States.

The Aixtron acquisition was far from based on market principles. According to MERICS, although Fujian Grand Chip Investment is mostly privately owned, the acquisition deal was backed and enabled by the National IC Fund. In the view of the US government, the deal was an attempt by the Chinese government to get its hands on sensitive technology, potentially with military applications—and it was the Obama administration that was finally able to scuttle the transaction in December by blocking the inclusion of Aixtron's US arm.

"The United States, Europe, other parts of the world basically have the consensus that they don't want the state to own and run major parts of the economy," says Noble. "There is a major question mark of how they want to treat investment from entities that may be seen as influenced, or highly influenced by a foreign government."

A significant compounding factor in the field of acquisitions is the increasing prominence of trade reciprocity issues—Western companies are not given the same amount of market access in China as the other way around, despite promises over many years to the contrary. Noble contrasts President Xi Jinping's recent comments at the World Economic Forum in Davos in favor of continued globalization with the reality on the ground.

"Eventually one has to judge the authorities by their deeds, not their words," says Noble. "We've seen for strategic emerging industries in the past, commitments that [foreign companies] would be given equal access, [and] equal treatment in the initiative, but in practice in solar and wind energy, low and behold, nothing of the sort happened."

Both Noble and Ives point out that there is of course nothing inherently objectionable about acquisitions of foreign companies by Chinese companies, and in fact it is what everyone wants so long as it is based on market principles. Ironically, the real worry is that all the tensions could lead to truly win-win deals also being blocked.

"Unfortunately we could see bids by private Chinese companies that are looking to expand on a private company investment thesis get caught in the crossfire," says Noble.

That almost happened with a big Germany-China deal last year, when Chinese white goods manufacturer Midea bid to buy German robotics maker Kuka for $5.5 billion. Ives says that in contrast to Aixtron, the Kuka deal was very much market-led. The deal almost failed to go through.

Policy vs Reform

There is also doubt about where some of the initiatives aimed at promoting MiC 2025 lead. All the state subsidies, for instance, may create yet another binge rather than a boom.

"The funding does not necessarily go to the [companies] that can benefit from it the most, but perhaps have the best connections to the government," says Ives. She says research at MERICS had identified a number of Chinese robotics and machinery companies that had received as much as 10% of their revenue from subsidies—one even would have been in the red without the state funding help.

In fact, Ives says, the entire marketplace for robots in China is distorted and in danger of overcapacity, with 40 robot industrial parks already built or being planned, which "if you compare it to the demand, it is blown out of proportion."

Professor Xu Chenggang of CKGSB calls out the more fundamental issue of

Chinese employees at Semiconductor Manufacturing International Corporation in Beijing

economic reform versus industrial policy.

"They have completely separate reform plans," Xu says, referring to the pledge by the Chinese government to allow a greater role to the market. "'Made in China 2025' is not in the reform plan."

Xu's example is that despite decades of effort, China is still unable to independently produce either the engines for the cars it makes, or the chips that power computers. The issue is not the technical difficulty, but the fact that these industries are largely state-run, and so lack the proper incentives to show initiative.

"Today you are a CEO of a large SOE, tomorrow you may become a vice minister," Xu says. "They are not able to solve the problems because it is beyond engineering problems, it is an institutional problem."

Xu points out that China is already home to companies that are achieving its industrial policy goals.

"In the last two decades there have been fairly successful Chinese firms, which have successfully upgraded their technology, and now they are becoming powerful competitors in the international markets, such as Huawei," says Xu. "But these are not planned by the bureaucrats… it happened in the market."

He adds that many companies in the manufacturing powerhouse of Shenzhen have already achieved the government's 40% target—not through top-down policy, but free-market dynamics.

Unsurprisingly, the foreign business community also supports a market-forces-based reform approach.

"If [China] lives up to the reform agenda [it] laid out in [at the Third Plenum in] 2013, it will get you further and there will be less critical complications along the way," says Noble.

Outlook

But however strong outside sentiment is for reliance on good old market dynamics, it seems that state-driven policy will rule the day indefinitely.

"An open liberal market economy with trade like you might see between France and Germany, or between Spain and Italy is not really in the cards for the foreseeable future you could say," says Noble.

'Made in China 2025' is unlikely to be a total flop, given the amount of money and policy support behind it, and while Ives has reservations about the ability of the program to achieve its broadest goals, she also says that "a small vanguard of companies" will benefit from the policy and do well. But the real impact might be difficult to calculate given the opacity of China's system.

"It [will be] really difficult to know if it really was achieved or not, because they want to keep face," says Ives. "So what I would expect is that even though they will probably not realize [the goals], they will say that they did."

Professor Xu's hunch, meanwhile, is that the impact of MiC 2025 will at best be minimal. But he is also apprehensive about the distortions it might cause, especially in the absence of reforms.

"Without important institutional reforms, if [the government] pushes, things can get much worse," Xu says. "It's better it be forgotten."

Navigating FDI

Foreign investment into China is following changing opportunities

By Wynne Wang

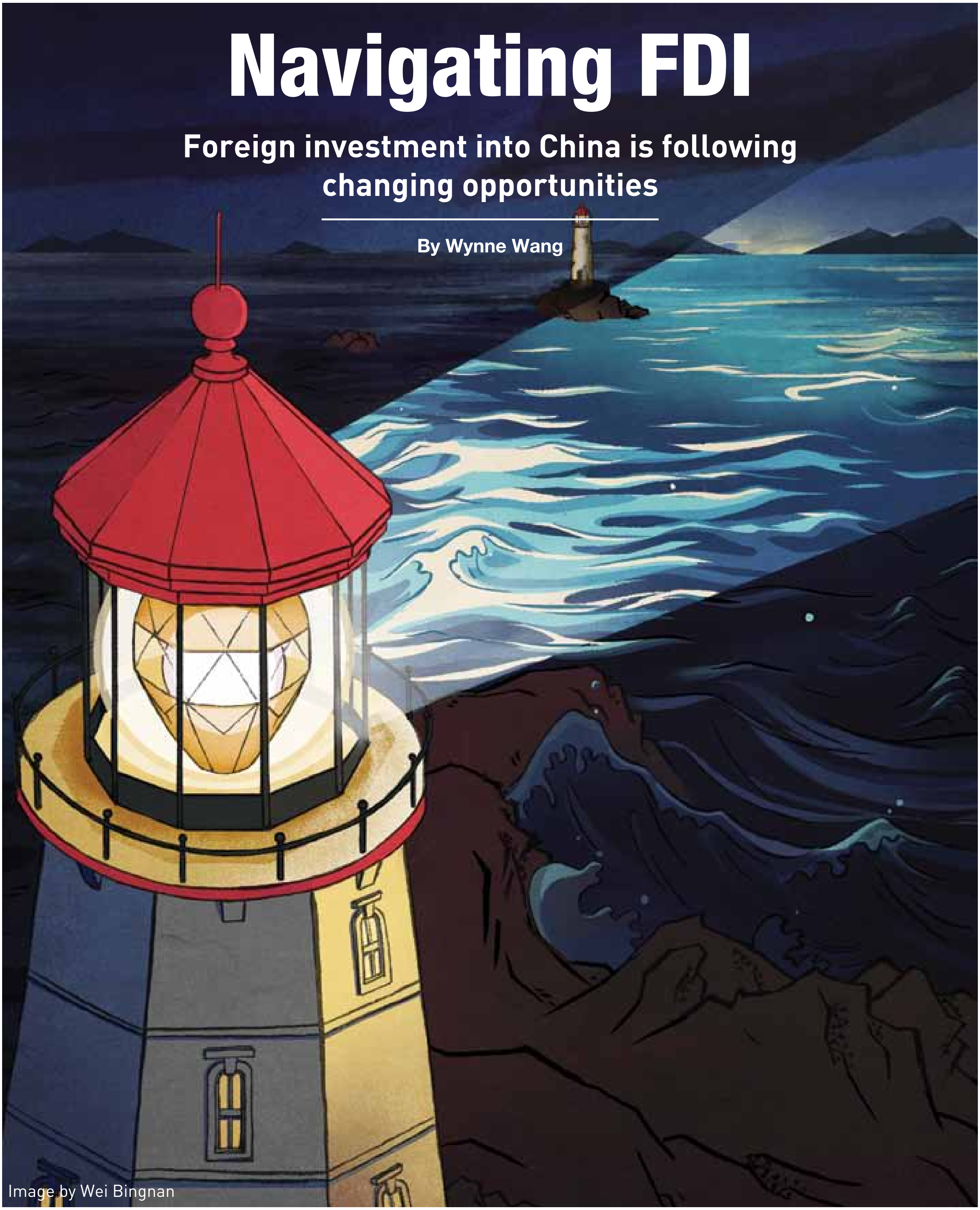


Image by Wei Bingnan

Foreign direct investment has played a vital role in China's development since reform and opening up. But times are changing, and FDI along with it, as low-cost manufacturing gives way to consumption

In January, the world's largest hard disk maker, Seagate, shut down its manufacturing plant in Suzhou, cutting over 2,000 jobs, becoming the latest global manufacturing giant to scale back its China operations.

"As part of our continual optimization of operational efficiencies, Seagate has made the difficult decision to shut down its factory in Suzhou, China," the company said. It did not give further information on the decision, but it is a process that other major international companies are facing, including Danone, Coca-Cola and Sony.

The shift, with deep implications for the global economy as well as China's continued growth, is being driven by a confluence of factors including the rising costs of manufacturing in China, the slowing economy and growing competition from local rivals. And it is leading not only to a decline in growth of FDI, but also to an interesting shift in where FDI is going.

"It has been a trend for the last couple of years that China is shifting from merely a manufacturing base to a country to sell products as well," says Robert van Aert, Operational Manager with Maxxelli Consulting, a Chengdu-based firm that assists FDI projects in China, with ten offices across the country. "We clearly see this shift among our customers… we trust this trend to continue for the next decade or two."

Foreign direct investment to China increased 3.9% on the year to RMB 731.8 billion in the first 11 months of 2016—the 2015 expansion was 5.6% by comparison.

"In our practice we see a significant decline in China-bound FDI," says Bernd-Uwe Stucken, a corporate lawyer at Pinsent Masons LLP in Shanghai. "I should mention that with a German background my practice is focusing mainly on the manufacturing sector which is particularly affected by the current trends." Stucken is also a former chairman of the Shanghai Chapter of the German Chamber of Commerce.

Inward investment has been an incredibly important catalyst for China's economic development, bringing in capital, technology and know-how, making China the world's factory and lifting tens of millions of people out of poverty.

"But China is no longer so fresh and attractive to foreign investors [because] return on assets is falling while the country's economy slows," says Yang Weixiao, an analyst with Founder Securities, a Chinese brokerage. Yang also said that increasing labor costs have became a heavy burden to foreign enterprises, especially manufacturers, who can cut costs by moving to Southeast Asia.

In January, China announced that its 2016 full-year economic growth was 6.7%, and at the National People's Congress in March, Premier Li Keqiang announced that the 2017 growth target had been reduced further to 6.5%, the lowest in a quarter century. However, the days of China presenting opportunities for profit for smart investors are far from over. Rather, the situation has changed, bringing with it new investment trends, and at the same time a host of new challenges.

At Your Service

As the Chinese authorities are now fond of saying, the country is facing a "new normal." The country's economy is shifting from labor-intensive industries to services, as well as high-tech manufacturing and higher-value sectors. China's large population now serves more as a consumer base rather than an endless supply of cheap workers, and inward investment is adapting.

"FDI into services increased by 8% (in the first 11 months), whose weight rose to 70.1% of FDI in the entire country," said Wang Shouwen, Vice Minister of the Ministry of Commerce (MOFCOM) at a press conference in January.

Actually utilized FDI in the "high-tech service sector" amounted to $12.8 billion, up a massive 97.7% year on year. By contrast, FDI into manufacturing declined by about 10%, although high-tech manufacturing still increased by 3.6%.

The declining sectors are easy to guess: mining, textiles, chemicals and other pillars of the so-called old economy. Many of these face similar pressures, such as overcapacity, making them unattractive not only for foreign capital, but domestic investors as well.

Protectionism in China

Although the changing shape of FDI in China is complex, it is also a natural progression. The bigger concern is treatment of foreign investment by the powers-that-be. China's top leaders have given public reassurances that they will treat foreign and domestic companies equally and let market forces play a larger role. But 55% of respondents in an annual survey of members of the American Chamber of Commerce (Amcham) in China this January said foreign companies were treated unfairly.

The survey showed more US businesses are shelving investment plans in China—the percentage of companies that rate China among their top three investment targets fell to 56%, the lowest since 2009. Four out of five companies said they felt less welcome in China than before, nearly double the rate from three years ago.

"You can see protectionism in certain sectors," says van Aert. "The Chinese government either totally blocks foreign providers or implements regulations that Chinese companies need to decrease the market share of foreign suppliers in the coming 5 to 10 years."

One of heightened concerns among foreign companies is that the Chinese authorities are trying to force foreigners out of some large and fast-growing markets. Media reported in 2015 that the Chinese government adopted regulations requiring companies that sell computer equipment to Chinese banks to turn over proprietary source code, submit to invasive audits and build backdoors into products. Many foreign technology companies could be hurt by the rules as they would be concerned about intellectual property, security and, in some cases, United States export law. The Amcham survey respondents also said new cybersecurity rules and other regulations made it harder to compete against local companies.

The Chinese authorities do tend to favor domestic suppliers in the market over foreign competitors where they have a say, according to some analysts.

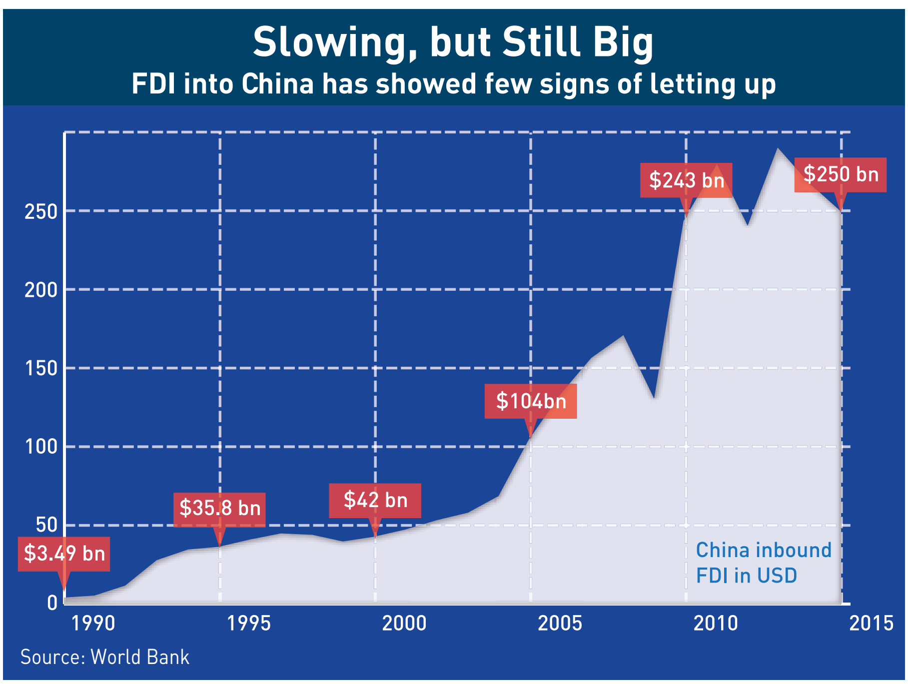
"It's safer to choose domestic companies when it comes to government-related projects," says Peng Ma, an analyst with International Data Corporation (IDC), an IT market research firm. It should also be noted that in China it is often difficult to tell what is a government-related project and what is not, given the prominence of state-owned enterprises in the economy.

However, there are important exceptions when it comes to leading technology. Last April, the network builder Cisco Systems partnered with Guangzhou, a southern Chinese city, to build a "model smart city." Cisco planned to establish a head office for innovation in Guangzhou to develop technology and create a cloud platform to serve the smart city industry—a project in line with wider goals to increase connectivity across many spheres of the economy and society. The project is expected to generate $15 billion a year in economic output in the city, and follows on Cisco's $10 billion invested to support other local IT projects and innovation in 2015.

But Peng Ma said Cisco's case is rare, as many smart city projects would grant the companies access to the governments' data and daily operations.

"The government has concerns over cyber security," Ma says. "They would like to offer the domestic companies chances to grow up.

Only to company's of Cisco's caliber, where China has much to gain, are such opportunities likely available.

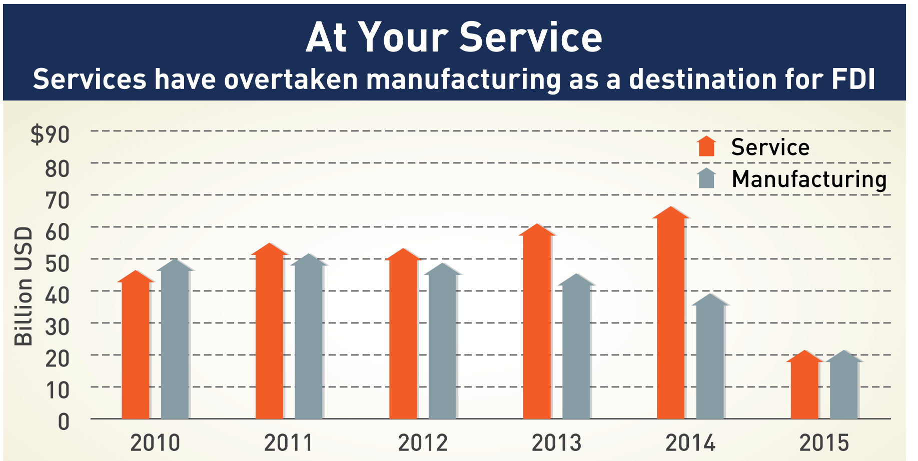


Capital Controls

Yet another concern for foreign investors in China is stepped-up capital controls, put in place in the past year as the RMB depreciated 7% against the dollar, the biggest annual loss since 1994. Foreign investors and foreign businesses generally are increasingly concerned about their ability to repatriate profits from China, which inevitably impacts on investor sentiment.

"Stricter foreign currency controls potentially make it harder to get profits out of China and thus kind of scare investors [off]," says van Aert.

As part of efforts to stem capital outflows and stabilize the RMB, the central bank announced late in December that it would effect new rules on overseas currency transfers from July 2017. Citing bankers and officials, *The Wall Street Journal* reported in December that China's foreign-exchange regulator has instructed banks to sharply limit how much money companies move out of the country. Before, it was possible for big companies to move $50 million, or the RMB equivalent, in or out of China with minimal documentation. Now, these people say, the cap is the equivalent of $5 million, a pittance for many corporations.



Source: China Ministry of Commerce

"Currently, many potential investors have not yet realized what this will mean for their plans," says Bernd-Uwe Stucken. "This very indirect approach is detrimental to the trust in the reliability of the rule of law in China and trust is one of the key elements for investors."

Ante Up

But although this "new normal" in China has brought with it such significant challenges, top multinationals are not backing away from the world's largest marketplace.

Apple is a good example. It is worth considering the state of the company's business in China, both direct and indirect, because it has in many ways been the face and a key driving force behind foreign investment into this country in recent years. The company, which contracts its manufacturing with Taiwan-based giant Foxconn and others, has been investing in China in ways that reflect the changing economy.

Although Apple's China sales slid last year—smartphones were down 30% in the third quarter—it continued to build more stores. In January, it opened its 39th mainland store in the southwestern provincial capital of Kunming, speaking to the company's desire to reach more and different customers. And it is pouring more into its established base in eastern China, which is on average richer, opening its seventh store in Shanghai last December. According to *Business Insider*, it costs about $10 million to open an Apple store.

The company also sought to diversify its business in China, investing $1 billion into ride-hailing service Didi, which defeated Uber last year following a brutal competition. And on top of that, Apple also announced last year that it plans to open a second R&D center in China, in Shenzhen, during its CEO Tim Cook's visit to Beijing. The first center, in Beijing, cost $45 million. This, too, is in line with the new reality of China's increasingly well-off consumers.

"A research and development center will help Apple to further localize its product," says Jin Di, an analyst with IDC in Beijing. "The key thing for Apple now is to lure Chinese customers."

Apple, of course, is not the only foreign company still making big investment bets in the China market, many of them speaking to the transformed environment. American pharmaceuticals giant Merck announced a €250 million drug manufacturing investment in China last November—demand for healthcare is skyrocketing. And this February, California-based chip maker GlobalFoundries announced a $10 billion semiconductor plant in the southwestern city of Chengdu. Chips are of course high value-added items.

US global retailer and the world's most profitable company, Walmart, joined with Chinese online retailer JD in investing in the online grocery business. The pair announced a joint investment of $150 million in August, and Walmart followed up in October with a $50 million investment in e-grocery startup New Dada. Here the bet is again on China's changing customers.

Shifting Winds

But although that may be encouraging, new uncertainty is emerging, but this time from the US. Following a campaign that emphasized job creation and domestic business expansion, President Donald Trump vowed to bring manufacturing back onshore. Many companies may get caught between the hardening trade stances of Washington and Beijing.

A survey conducted in January by Bank of America Merrill Lynch found that 29% of investors believed that a trade war and protectionism are the biggest current threat to markets. While not exactly a consensus, it is telling that even a month previously, very few investors had such concerns.

That said, growth is growth, and despite all the various challenges and uncertainties, China's economy is still expanding far faster than most. But to invest into China, foreigners need to be able to spot the right opportunities and read the tea leaves correctly.

In December, China proposed to cut more sectors from the "negative list" of industries that are barred from foreign investment. Those include new energy, credit research and ratings, road passenger transportation and more. The proposal also said the government would continue to encourage foreign investment into modern agriculture, advanced manufacturing, high technology, energy and environmental protection and modern services, all of which align with China's vision for an advanced economy and developed market.

"China offers a good investment environment [for foreign investors] as China's economy maintained healthy growth," said Wang Shouwen at the press conference.

How true that is may depend on what exactly a given company wants to invest in, not to mention the political developments during what is sure to be an exciting year. Still, the positive message is grounds for optimism.

"Also," Wang added, "China's domestic market is a very big potential market with strong attractiveness." And of that, there can be no doubt.

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Flying High

China's aviation industry is becoming a global force

By Tom Nunlist

Image by AMAO

Twenty years ago, flying in China was for the privileged few. Today it is for the masses, and as China is on its way to becoming the biggest single market for air passengers, the industry has begun an international push

Since the beginning of China's economic reforms in 1979, domestic air travel in China has risen from nothing to become a huge and booming industry. But now China's airlines are spreading their wings even wider and becoming major players on air routes around the world.

In 1982, there were less than four million air passenger journeys in China, according to World Bank statistics—by 2015 that number had reached 436 million. That same year, 120 million Chinese tourists traveled abroad, quadruple the number going overseas a decade earlier. It's a change that can be easily seen at airports anywhere in the world.

"Even around six or seven years ago, around 70% to 80% of passengers in the [US-China] market were American," says Dr. Zheng Lei, Founder and President of the Institute for Aviation Research, an independent think tank based in the UK, and Director of the Centre for Aviation Research at the University of Surrey. "Now more than 50% of travelers are Chinese."

The pace of the Chinese airlines muscling into new territories is speeding up. New intercontinental routes opened by Chinese carriers in 2006 numbered just six, while from 2014-17, the number was more than 50, according to the CAPA Centre for Aviation, an industry news portal. By 2029 China is expected to overtake the United States as the world's largest passenger market, which includes travelers going to, from and within the country—although China already schedules more flights to the US than the other way around, with Chinese carriers operating about 10% more flights between the two countries than their US counterparts in 2015.

What was once out of reach for most Chinese people, is now standard for many.

"Before, traveling by air was a luxury… If you were traveling by air you were successful," says Shen Pingping, a 34-year-old entrepreneur in Shanghai. "Now [average] people travel at least once a year."

But China's lofty success has brought with it some serious challenges. China's domestic aviation infrastructure, for example, is struggling to keep up with growth in air traffic demand. This has led to lengthy delays that are so common they sometimes seem to define air travel in China over the level of quality and affordability. These problems of capacity are also more than just domestic because they affect other international carriers, and the bilateral air service agreements that China strikes with other countries. This will be important for continued expansion, as Chinese airlines are not as global and profitable as their counterparts in other nations.

Additionally, although Chinese airlines have achieved enviable success, China has not yet been able to construct its own commercially successful airliners. As a question of international prestige, this is an absolute must.

However, in terms of market share and potential, Chinese airlines have the wind at their tails. The rest of the story may just be persistence and time.

Zero to 30,000 feet

Perhaps more than any other industry, commercial aviation places the safety premium far above profitability and customer service. According to *The Wall Street Journal*, Chinese airlines in the 1990s were among the world's most dangerous, "beset by persistent pilot errors, unreliable maintenance and erratic government oversight."

In this most basic area alone, China's progress has been a triumph.

"I first came to China in '96, and at the time I refused to fly on any Chinese airlines because I wasn't comfortable [with the level of safety]," says Shukor Yusof, founder of the Singapore-based aviation industry advisory, Endau Analytics. "Now I wouldn't have any qualms at all."

Following a massive industry overhaul in the early 2000s, many of China's airlines consistently rank among the world's safest. Safety has become such the priority of the Civil Aviation Administration of China (CAAC) that Zheng Lei says standards may even be too high, restricting the number flights that airports are allowed to handle.

But the real story is that of the mass consumer move to air travel. Set next to one another, growth in China's disposable income tracks neatly with the rise in passenger traffic. Not surprisingly, most Chinese people prefer to fly on Chinese planes internationally as well as domestically. The growth in passenger numbers has been phenomenal, with the market growing at annual rate of more than 15% for over a decade. In terms of passengers carried, China's big three state-owned carriers are all in the world's top ten. And they're doing better financially as well.

"Previously Chinese airlines have lost a lot of money," says Zheng Lei. "Now they are making [it]."

Driven by the opportunity, China has seen a proliferation of private airlines, which has had a tremendously positive competitive effect on the industry.

"From 2010 onwards, you have seen a transformation in [Chinese airlines] in their ability to introduce better products," says Yusof.

Some of this is at the top end. Hainan Airlines, operating out of the eponymous southern island famed as a vacation spot, has achieved a Skytrax five-star airline ranking. There are only nine of them in the world, and none from the United States.

But expansion of service offerings has come at the low end as well, and this has arguably had the bigger impact as it helps pull in more fliers. Spring Airlines, founded in 2004, has been a leader in this new category of very-low-budget airlines, beating the unit operating costs of China's big three by 35%, enabling Spring to offer rock-bottom prices. While the market share of these budget airlines is still small in China, 9% compared to 56% in ASEAN nations and 40% in Western Europe, growth is robust.

However, domestic passenger growth is starting to slow down noticeably, clocking about 11% annually since 2014, according to Zheng Lei. The real action is in China's newly affluent international travelers.

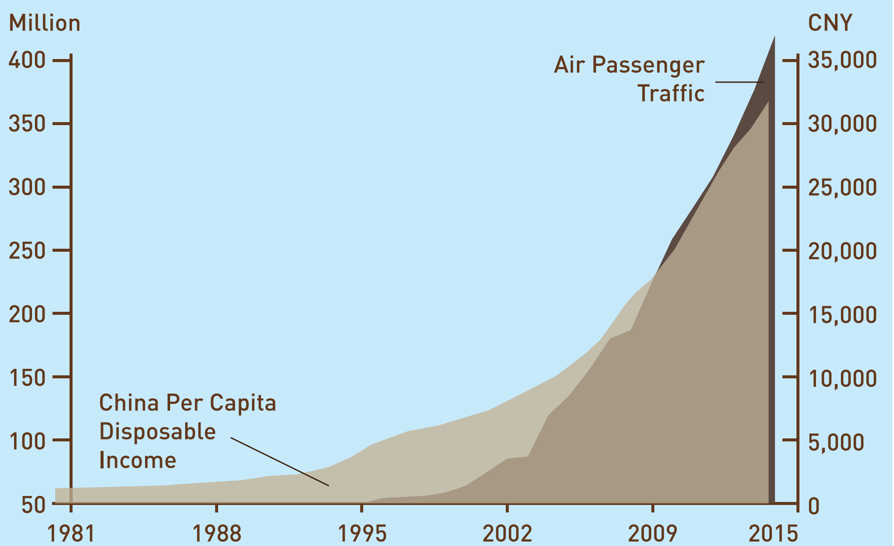
Around the World

"If you start traveling it is like an addiction," says Shen Pingping, who in the past few years has racked up trips to India, Europe and North America. "You go somewhere close, then you want to fly somewhere further."

Infections by the travel bug, it seems, are quickly approaching pandemic level—Chinese international passengers grew by 33% in 2015 and another 28% in 2016.

Consumer Story

Growth in China's air traffic has paralleled income growth



Source: Trading Economics, National Bureau of Statistics of China

While this remains only about 7% of total traffic of Chinese airlines, it still amounts to tens of millions of flights. During the recent 2017 Spring Festival alone, more than six million Chinese people vacationed abroad.

Shen says it reflects both an increase in the amount of spending money people have, but also a broad cultural change. People are just not content to sit at home anymore for Chinese New Year eating and drinking for days on end—it gets boring. Folks want to strike out for new frontiers.

Fortunately for Chinese airlines people only change so much, and so are in a prime position to take advantage of the opportunity.

"Chinese airlines have the advantage with Chinese passengers… they know the customers better," says Zheng. "That really helps them in the international market."

The impact of this advantage is tangible. In 2015, China overtook the US for the first time in the number of flights scheduled between the two countries. By December of 2016, the gap had widened to 781 flights by Chinese carriers versus 596 for US airlines, in terms of direct flights only.

But despite edging ahead of the US on these routes, overall Chinese carriers are nowhere near as large, global and profitable as US airlines. In 2015, the top four most profitable airlines in the world were all US, with a combined profit of $15.7 billion dollars—taking the top spot, American Airlines managed $6.09 billion on its own. By contrast, the only Chinese airline to make the top ten was Air China, turning a respectable $1.09 billion profit.

Part of this has to do with how truly global US players are, as compared to Chinese airlines. Air China has a fleet of about 400 planes, and flies to over 200 destinations worldwide. Again using American Airlines as the measuring stick, it has a fleet over 900 planes and flies to about 350 destinations. It is also noteworthy that Chinese airlines operate fewer of the large international planes, like the Boeing 747, than other big world carriers. United Airlines has 21 of the jetliners, Air China just 9.

However, another interesting comparison is Emirates, which has its home in Dubai. Despite having a smaller fleet size, about 250 planes, and fewer destinations, about 140, it still manages to be more profitable, bringing in $1.57 billion in 2015.

Regionally, the emergence of Chinese airlines is having a huge effect on the marketplace.

"The proliferation of Chinese carriers, the increasing number of flights, the number of aircraft they put into their fleet, has heavily eroded the profitability of Cathay Pacific," says Yusof. The Hong Kong-based carrier's net income dropped by 82% in the first six months of 2016.

But Chinese tourists are famous for the amounts of money they spend on vacation, which reached $215 billion in 2015. This power of the purse has countries changing their bilateral air service agreements with China—these agreements govern the number of commercial flights allowed between two countries and are negotiated between governments. Last October, Britain agreed to double the number of Chinese passenger flights allowed each week to 100. Not long after in December, Australia lifted all restrictions, allowing unlimited flights between the two countries.

But not all is roses in bilateral agreements. According to *Reuters*, negotiations for more flights between the US and China broke down in late 2015 due to US concern that they would not be given adequate slots at Chinese airports.

"Chinese carriers can benefit from the growing market while US carriers cannot," Zheng Lei says.

Yusof concurs saying that a lot more flights should be going from the US to China but that's not happening because it is still not very easy for foreign carriers to enter into the Chinese market.

But while this is in part a political issue between the two great powers, it is also very much an infrastructure issue on the Chinese side. US carriers worry about airport slots because China just does not have enough.

Too Close to the Sun

"The number of airports in China is not representative of a country where aviation is the fastest growing industry in the world," Yusof says.

China is working very hard on this problem, adding eight airports last year for a total of 210. The United States has 330 airports considering a population that's only one-quarter the size. That's one significant reason there are never enough slots for foreign carriers in China.

Zheng Lei says "US carriers are now waiting to see Beijing's second airport open" before figuring out how to proceed. According to the CAAC, the government is spending RMB 80 billion on the facility, which will be able to handle an annual passenger turnover of 72 million. Carriers will have to wait until 2019 for it to open, though.

Of course foreign airlines are far from the only parties affected by the underbuilt nature of China's airports—the Chinese public bears the daily pain of seemingly constant delays, which have a way of turning people away from air travel altogether.

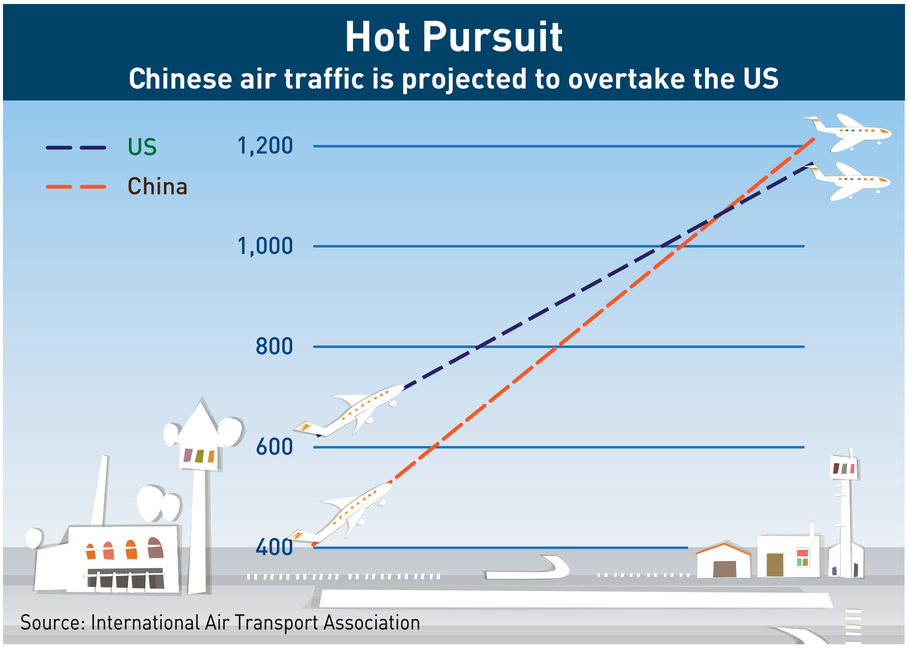
"Travelling domestically, we prefer to take the train," says Shen, noting the cost parity, the time parity when everything is factored in, the superior comfort and most importantly the rock-solid reliability of China's train schedules. "If I go for a business trip I would way rather take a train to make sure I arrive on time," she adds.

Indeed, China's high-speed trains carry more than double the number of passengers each month as its airlines. Moreover, the CAAC noted that pressure from high-speed rail has caused passengers on routes around 500 km to be cut in half. Some airlines have even shut down their shorter routes.

Another problem has been a massive shortage of experienced pilots, which has some carriers offering annual salaries of $300,000 to attract veterans from foreign airlines. However, this problem will be solved in due time. There are plenty of quality co-pilots in China coming from its two primary air schools, but they do not have the experience to qualify as captains and it is impossible to shortcut that problem.

A more complex and important issue, however, is that China has not yet developed adequate "hub-and-spoke" operations, which affects air alliances and code sharing. Beijing, Shanghai and Guangzhou each have large hub airports, but their geographic situations are not conducive to transferring traffic to and from Europe, for example, which affects how airlines are able to funnel traffic to one another.

"Looking at the map of China, it does not make sense for people in Urumqi [in China's far northwest] to come back to Beijing and then fly to Europe," says a source in CAAC's international department. But



Source: International Air Transport Association

China's population means that big regional airports certainly have a base. "[The central province of] Henan has 100 million people. That's the population of a mid-sized country in Europe, there is potential to support air travel."

However, part of the problem may be 'regionalism' on the part of provinces that keeps them flying point-to-point with international carriers in the hope of driving tourist dollars. So instead of developing hubs and air alliances, local governments offer subsidies.

"Chengdu gave British Airways (BA) these subsidies and it lasted for three years," says Zheng, describing the BA Heathrow-Chengdu route. "It expired last year and BA stopped the route."

In Zheng's view this is a very serious issue because airlines are necessarily a network industry, particularly at the international level. If you don't have airlines in your network funneling traffic, then routes are not sustainable. While China's big three state-owned airlines are in major international air alliances, many of China's smaller airlines are not. Even Hainan Airlines, with its coveted five-star rating is not in an alliance, although one has recently been proposed by Virgin Australia.

"The next five years will be the last opportunity for the Chinese airlines," Zheng says. "If they are not able to develop their functioning hub-and-spoke system, they may lose out."

Airliners

China is not content simply to have thriving airlines, it also wants to be a player in airliners.

"When you want to be a superpower, you have to be involved in aircraft manufacturing," says Yusof.

For China, having a competitive aircraft manufacturer is of course about national honor, but it is also a strategic business position. China is far and away the world's largest market for aircraft, and China is virtually entirely dependent on the duopoly of Boeing and Airbus. Boeing predicts that China will buy $1 trillion worth of planes over the next 20 years.

Again, you can't knock China for lack of effort in this field—building a viable commercial airliner has been a decades-long pursuit in China. The Commercial Aircraft Corporation of China (COMAC) finally managed to introduce the ARJ21 jet into service in June of last year, ten years behind schedule. And although the jet is touted as a domestic achievement, it still relies heavily on foreign expertise and components. The wings, for example, were designed by the Ukrainian firm Antonov State, and the engines are from General Electric. (COMAC is also working on the larger C919, which is expected to make its first flight this year.)

Commercially, the ARJ21 leaves a lot to be desired. Unsurprisingly, orders have mainly come from China's state-owned airlines, and even there they will be but a small part of fleets. Providing serious competition for the likes of Boeing and Airbus in the Chinese market, let alone the international market, is for the time being out of the question.

"Boeing has been around for more than 100 years. It is tried and tested," says Yusof, who explains that he does not harbor too many doubts about the quality of the ARJ21, but rather sees a problem in a business that hinges on reliability and safety.

In his native Singapore, Yusof says he witnessed the arrival of Chinese manufactured cars some years ago, which initially flooded the market, but then disappeared within just a few years.

"The perception is, rightly or wrongly, that they don't make good cars," he says. "In an aircraft, you don't want to take any chances."

However, like many issues facing the emerging aviation industry in China, this is also likely to be resolved given enough time and steady effort. It even took Airbus, which was founded in 1970, many years to be truly competitive with Boeing. Chinese aircraft will similarly take another 10 or 20 years to start making a real dent in the competition. In the grand scheme of things, the debut of Chinese aircraft is likely intended in the first phase simply to build confidence in the safety of Chinese planes.

Cruising Altitude

While the main obstacles to the continued development of China's aviation industry are significant, one needs to consider the full picture of China's aviation development. In the space of a few decades, commercial flight in China rose from being negligible to a force so big that it is starting to change the global marketplace.

Moreover, meeting challenges such as the shortage of airports and pilots and the trials of making some of the world's most complex machines safe and commercially viable is mainly a matter of sustained effort. And of that there is plenty.

"They are in it for the long haul," says Yusof.

The most important factor is still the size of market. Barring a truly extreme economic catastrophe, demand for Chinese flights domestically and its share of global air routes will only grow. The sky is, literally, the limit.

> **Chinese carriers can benefit from the growing market while US carriers cannot**
>
> Zheng Lei
> Director, Centre for Aviation Research
> University of Surrey

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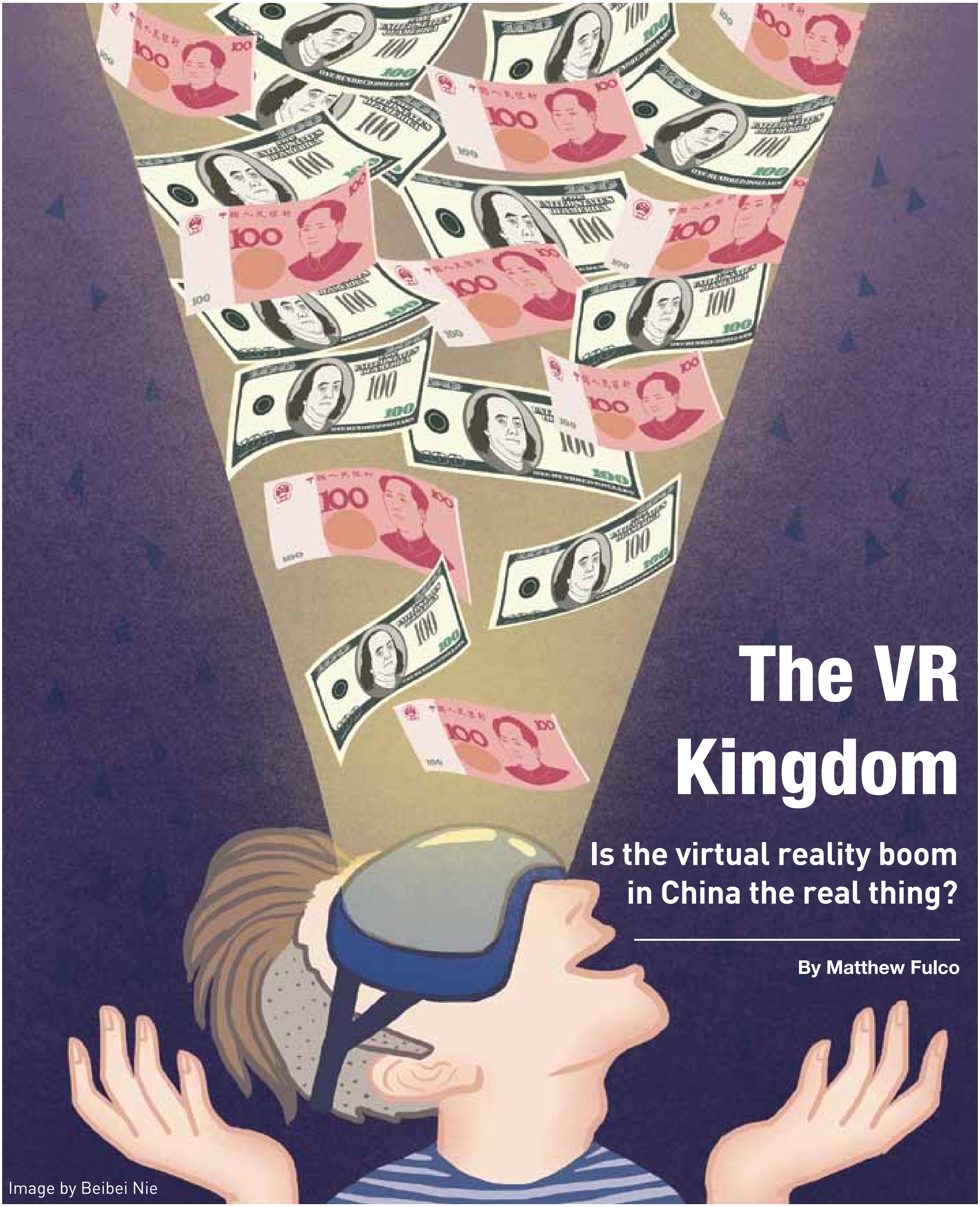


The VR Kingdom

Is the virtual reality boom in China the real thing?

By Matthew Fulco

Image by Beibei Nie

Virtual reality exploded across China last year, attracting attention as well as investment from people who see the wave of the future. But the real-world business of virtual reality is less concrete than it could be

On Singles Day in November, Alibaba's ever record-breaking shopping holiday, Chinese consumers travelled across the world to shop at Macy's in New York City… sort of. The carrier for the journey was Alibaba itself, which sold 150,000 pair of RMB 1 cardboard virtual-reality (VR) 'goggles' to shoppers. Similar to Google Cardboard, the shopper could slip a smartphone into the headset and make a virtual promenade through Macy's flagship department store on 34th Street in Manhattan.

J. Michael Evans, Alibaba's president, told online magazine *Quartz* that month that virtual reality can help redefine how brands and consumers interact. VR allows "consumers a chance to more deeply engage with the product, to understand it better," he said.

Alibaba is moving to tap the fledgling but ascendant market of virtual reality. According to IT industry research firm IDC, VR device shipments in China reached nearly 300,000 units in the first three quarters of 2016, partly due to a 367% spike in Q3 from the previous quarter.

According to Niko Partners, an Asian games market research firm, the 2016 market size for hardware hit $300 million. And according to *Bloomberg*, China's VR market will be worth $8.5 billion by 2020. A huge portion of this is the market for video games and other forms of entertainment, such as VR movies. But there is promise for many other applications, including the retail shopping experience offered by Alibaba.

China's VR market is surging on the back of heavy investment in hardware and widespread infrastructure deployment. In contrast to the US and Europe, thousands of VR internet cafes and dedicated experience centers have sprung up across China in the past two years.

"Having VR equipment readily available for public use makes people a bit more comfortable with the options," says Tom Lewis, Director of Production and Operations at London-based CreateVR, a consultancy specializing in the use of virtual reality in marketing.

Chinese consumers also show fewer reservations about VR than their counterparts in the US and Europe.

"The Chinese are very eager to try new technology," says Brian Blau, a research vice president and expert on mobile and wireless consumer technologies at the California office of IT industry research firm Gartner.

All of this augurs further growth in China's VR market in the near term, analysts say. "It will be a year of big opportunities and challenges for China's VR industry," says Beijing-based IDC analyst Neo Zhang. He notes that as competition intensifies, some cash-strapped startups will fold. But that doesn't mean the market is cooling off. IDC expects China's VR market to expand more than 441% in 2017, at least in terms of units shipped.

However, the VR industry is surrounded by a certain level of hype, and the business model is not yet solidly defined. Although some expect VR to revolutionize multiple sectors, it may yet be a while before the market firms up.

Fun and Games

China's entertainment segment—which includes the world's largest digital games market—offers the most opportunities for VR in the near term. Interest among Chinese gamers is high: A survey conducted last year by Niko Partners found more than half of Chinese gamers are interested in VR and roughly 30% are willing to spend up to $200, about RMB 1,400, on a device.

While that puts ownership of high-end PC VR headsets, such as the RMB 6,000 HTC Vive headset, out of the reach of most consumers, they can instead pay to play at the more than 3,000 VR cafes and gameplay centers, called "experience zones," throughout China. A half hour of gameplay costs RMB 50-80.

"China's good at pushing VR to the mass market," says Jenny Guo, co-founder of LumiereVR, a Las Vegas-based virtual reality entertainment firm, noting the speed at which VR cafes and experience zones are springing up nationwide. (Perhaps too fast: An industry white paper published in February found that most small-scale operations were struggling, with less than 30% turning a profit.)

But bigger Chinese investors are looking at VR's long-term potential. Tencent, China's largest internet company and the world's top digital games maker, is investing in VR content production. Tencent-backed Original Force, which specializes in computer-generated content, is working on VR movies for Tencent Pictures and creating content for Facebook's Occulus Rift headset. Zanadu, a popular travel site in China, received $12 million from Tencent last year to develop a virtual-reality studio that will provide content for its app and third-party travel partners.

Search giant Baidu also has sizable VR ambitions. In May 2016, its video-streaming subsidiary iQiyi announced it would develop the world's largest Chinese-language VR content platform. iQiyi executives said the company would target sales, through its manufacturing partners, of 10 million VR headsets and mobile VR devices on the mainland, and would offer at least 10 VR films and 100 games to its subscribers for free.

China is a promising market for VR video content, says Steven Hsu, an industry analyst at Taiwan's Market Intelligence & Consulting Institute (MIC), a technology industry consultancy. "The Chinese video content service market is mature enough to support VR services," he says. "The explosion in popularity of live-streaming is going to help VR live-broadcasting become the next thing in China."

> VR headset vendors should focus more on developing game-changing VR applications
>
> Steven Hsu
> Analyst, Market Intelligence & Consulting Institute

With a first-mover's advantage, "iQiyi has a high chance of becoming a big player in China's VR content industry," he adds.

Beyond Entertainment

Entertainment represents just the tip of the iceberg for VR in China, analysts say. E-commerce, driven by "Alibaba's aggressive investment," is one industry with growing potential for VR applications, says MIC's Hsu.

In March 2016, Alibaba set up the Gnome Magic Lab (GM Lab) for VR and augmented reality (AR) development—AR overlays material onto the real world, and some including Apple's CEO Tim Cook believe that it will be more significant than VR in the end. The Lab helps sellers on Alibaba platforms to build their own 3D product inventories, with a long-term goal of helping businesses set up VR stores.

In September, Alibaba's finance arm, Ant Financial, launched a VR payment service called VR Pay that allows users to complete online transactions without removing their headsets—users can interact with the system with head gestures and a controller.

Alibaba's archrival JD.com launched a VR/AR alliance last September. The alliance contains 30+ companies, among them hardware developers, content developers and coding developers.

Fung Business Intelligence, a Hong Kong-based research firm, noted in a March report that some fashion brands have partnered with e-commerce players to provide a virtual fitting room service. After providing their body measurements, consumers can try on clothes with a customized virtual model. US-based fashion brand Gap is offering that service on Alibaba's Tmall marketplace.

Meanwhile, China's education industry sees considerable potential in the application of VR in the classroom. In a November report, China's state-owned *Xinhua News* noted that online game developer NetDragon has created a VR fire-safety lesson. In the lesson, students find themselves in a simulated fire emergency. To escape to safety, they must bypass obstacles like desks and chairs as they crawl across the floor. NetDragon also has developed immersive VR classrooms, and its headsets can even use motion sensors to determine if children are focused on their work.

Projected Market

China is predicted to dominate the VR headset market

Source: iResearch; Goldman Sachs

A visitor to the 2016 China Hi-tech Fair in Shenzhen tries VR games

Education could be an ideal industry for VR in China given the value Chinese people place on their children's schooling, says LumiereVR's Guo. Further, "young people in China are passionate about VR. The next generation will be the adopters," she says.

Yet another application for VR is in the healthcare sector. According to a November report in the English-language version of the *The People's Daily*, the official Communist Party newspaper, Sichuan University's West China Foundation Medicine and Forensics School has developed an award-winning anatomy course. Medical students can examine virtual bodies and can even remove an organ to view it up close. Sichuan University's medical school is now developing a virtual scalpel that promises to allow students to hone their surgical skills "without the need for a real human body."

However, all of these new potential game changers are just that. To some extent companies are crowding around every single idea, with perhaps little thought as to how they will eventually profit.

Hype and Reality

Given the excitement surrounding VR in general, it can be difficult to accurately assess market conditions.

"There is an undue amount of hype," says Gartner's Blau, who has been involved with VR technology since 1988. "It is good in that it translates into an interest in buying, but people put on a headset and the experience is not always what they expect."

He adds: "I have yet to see a great user interface for shopping—something that significantly improves the buying experience. All you can do is play with the product in 3D."

CreativeVR's Lewis attributes some of the hype to the large amounts of capital investors have already sunk into VR hardware. "There is a lot of energy behind the hardware. Investors are betting big on it," he says.

The first indication of volatility in the China VR market came in the second half of 2016, when a number of local hardware startups folded. The startups were squeezed by the arrival of a slew of heavyweight tech manufacturers: foreign firms like HTC, Samsung, Sony and Microsoft, and Chinese brands Xiaomi, Huawei, Lenovo and LeEco. Some startups collapsed before shipping a single unit, notes IDC's Zhang. Investors got spooked.

"You could say the investment climate turned cold for VR hardware makers," he says. "But the capital markets remain optimistic about investing in startups for VR content."

For now, high-quality content is in short supply, hamstrung by high costs and a lengthy post-production process. In a December post on the company website, Verizon Ventures (the venture-capital arm of the US's Verizon Communications) Manager Suresh Madhavan wrote: "Production of full-capture VR-related content is particularly expensive, typically running at two to three times the cost of normal video content."

Some observers are questioning VR's revenue-earning capacity. "There's no model for monetization right now besides selling games," says CreateVR's Lewis.

Tech-news site *Venture Beat* notes that Vrideo, a US startup founded in 2014 aiming to become the YouTube of virtual reality, collapsed in November after two years, its founders unable to squeeze any more out of the $2 million they raised in early 2015. With a dearth of high-quality content, Vrideo was unable to grow a strong user base and attract the additional funding it needed to continue.

One of the reasons for weak VR content is that the technology is in a nascent stage and developers have yet to determine its best applications. For instance, in China, some real-estate firms see VR as a useful tool to promote property listings, as the technology could eliminate the need for a brick-and-mortar showroom and reduce their expenses. Consumers would benefit from being able to view the property from the convenience of a VR headset.

There's just one problem: VR's simulation of spatial relationships is extremely accurate. "That means a small property is going to look small in VR," says Gartner's Blau. "It's not like a photograph where you can use a wide-angle lens to make spaces seem much larger than they are in reality."

Doubling Down

Although the wider significance of VR in the future leaves much room for doubt, platform developers seem willing to pay for premium content to generate user interest in VR products.

Analysts are sanguine about the emergence of content. "We expect the quality of VR content to improve while development speeds up," says MIC's Hsu, noting Oculus and HTC Vive "have invested a massive amount of funds to streamline VR content and the ecosystem." IDC's Zhang reckons "impressive VR content" (some focused on entertainment) will be launched in the first half of the year.

Hardware prices will also begin to fall as vendors ramp up production capacity. Microsoft has already launched a headset priced at $299, notes Hsu, nearer to the price that Niko Partners says Chinese consumers are willing to pay. But hardware manufacturers will need to do more than slash prices to attract customers, Hsu says. "Instead of initiating a price competition, VR headset vendors should focus more on developing game-changing VR applications to help the industry flourish." That can be accomplished with partnerships between VR hardware makers and content and peripheral providers, he adds.

Vendors will need to improve the performance of VR headsets as well. Verizon Ventures' Madhavan observes that users find VR headsets relatively uncomfortable—such that usage time peaks at only six minutes. As a result, the headsets will need to be upgraded before more substantive, and lucrative, content is introduced. "Immersive sporting experiences or premium cinema-quality content are difficult to deliver if a user has to adjust their hardware every few minutes. What's needed is better hardware, not a greater number of models," he wrote in a December post on the Verizon Ventures website.

Gartner's Blau returns to the example of real estate to illustrate VR's limitations: "If you plan to live in a house, you are going to want to see it with your own eyes and walk around in it before you commit to making the purchase," he says.

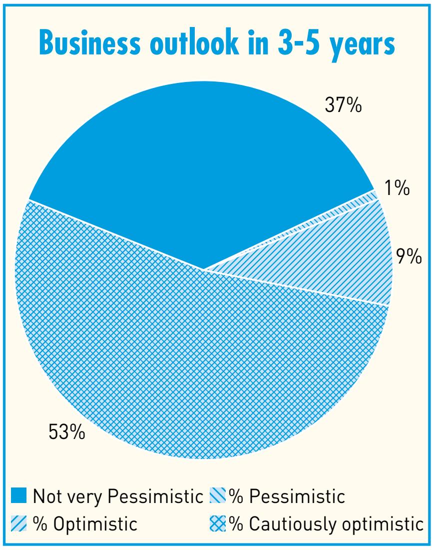
"VR is not going to replace the buying experience we have today. It will be an augmentation," he adds.

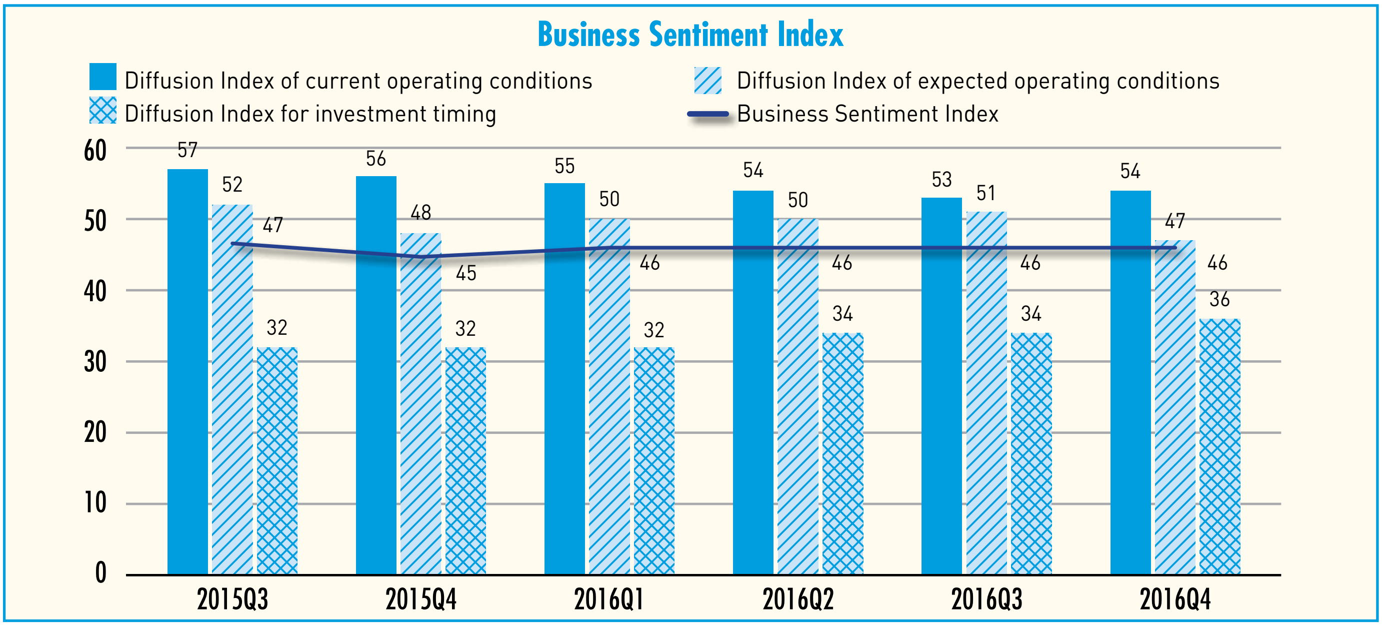
CKGSB Business Sentiment Index 2016 Q4 : Low on Investment

Overcapacity and cost increases have firms on their heels

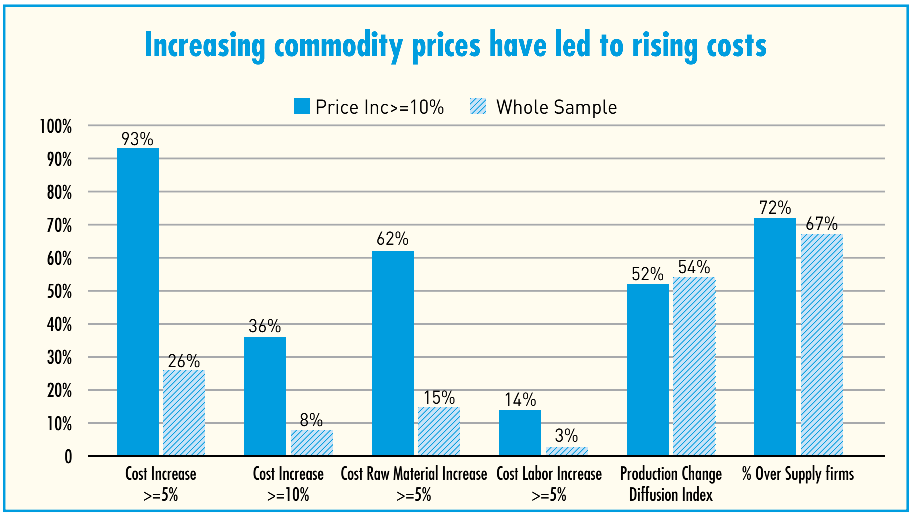
The CKGSB Business Sentiment Index stood at 46 in the fourth quarter of 2016, the same as the previous quarter, indicating a slight contraction. The low BSI is, again, a result of weak investment. Only 1% of the firms considered it a "good" time to make fixed investments, with an index of 36, far below the turning point of 50. Only 9% of firms made fixed investments in Q4 and a mere 2% made expansionary investments. Additionally, the most prominent change seen in Q4 was a significant rise in product prices, with the index rising from 50 to 66. But despite current difficulties, the majority of firms remain optimistic (9%) or causally optimistic (53%) about the economic outlook of the next three to five years. Given the government's strong commitment to economic development, the BSI team remains optimistic about the long-term outlook of the Chinese economy.

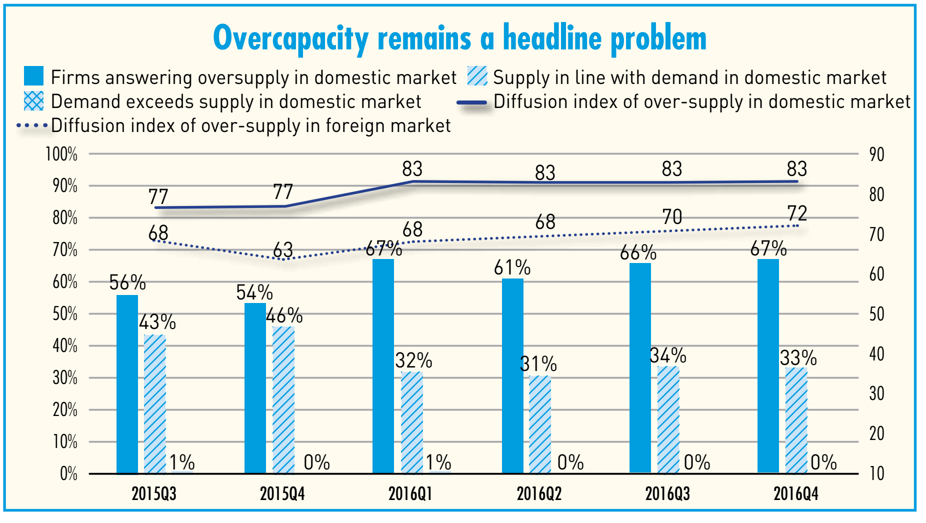
The BSI, directed by Gan Jie, Professor of Finance at the Cheung Kong Graduate School of Business, is the simple average of three diffusion indices, including current operating conditions, expected change in operating conditions and investment timing. The index ranges between 0 and 100—a larger value indicates better operating conditions, with 50 marking the turning point between expansion and contraction. Compared with other economic indices, the BSI is more forward-looking and is a reflection of the absolute level of economic activities.





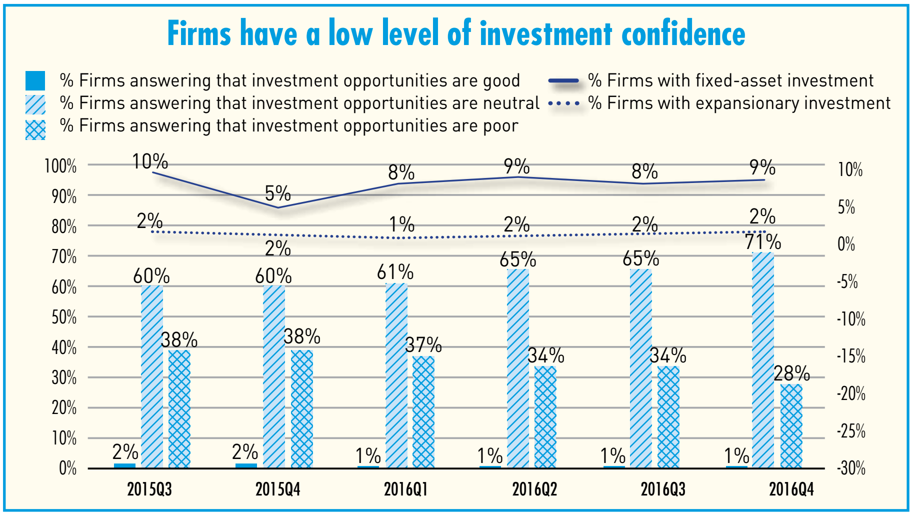
One-third of the firms surveyed reported increased product prices, with as many as a quarter reporting hikes above 10%. Production cost rises are the driving force, with about half of firms reporting unit cost increases. Unit cost increases are mostly related to raw material costs—62% of these firms reported raw material cost rises above 5%, in comparison to 15% for the whole sample. These firms were also more likely to have large labor cost increases. Meanwhile, these firms were similar to the whole sample in terms of production expansion and overcapacity. This indicates price inflation driven by cost run-ups, rather than by increased demand.





Despite stronger efforts at reduction, overcapacity remained at its historical high in 2016. Each quarter, about two-thirds of firms reported oversupply in the domestic market, with the diffusion index at 83 for four consecutive quarters. Neither was there any significant improvement in the severity of overcapacity, measured by the proportion of firms reporting supply over demand by 10% and 20%, which were 32% and 14% of firms respectively. Firms said they did not think overcapacity would improve significantly in the next quarter. The main theme of the industrial economy in 2017 will still be the reduction of overcapacity.

A mere 1-2% of firms made expansionary investments, in comparison to 2-3% in 2015. Moreover, just 17 firms, or 0.8%, said they planned to make investments in the next quarter. Recent media reports have noted that the country's fixed investment has been dominated by government-led investment, while private investment has been contracting. Our survey shows that this trend has lasted for quite some time. The overcapacity problem, which leads to a lack of pricing power, combined with rising costs, results in low profit margins. These low margins may make it difficult for the firms to invest in R&D and industrial upgrading.



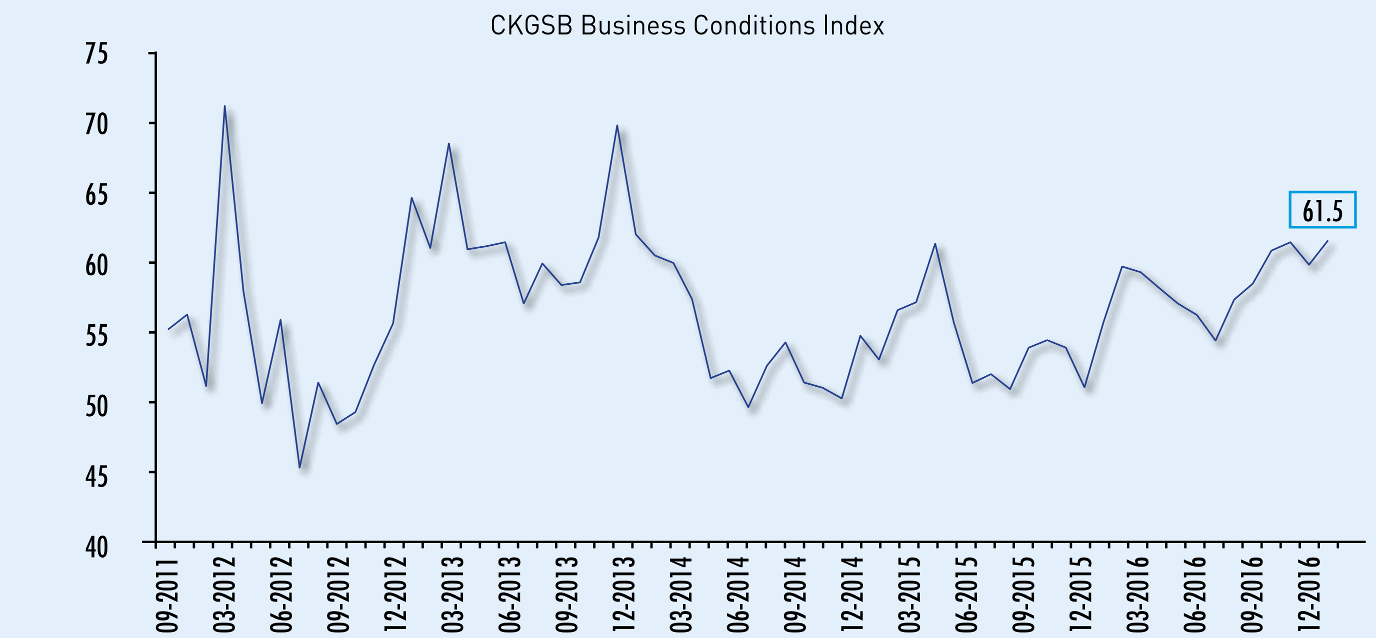
CKGSB Business Conditions Index
Good, but Not Perfect

Sales and profits are solid, but problems remain

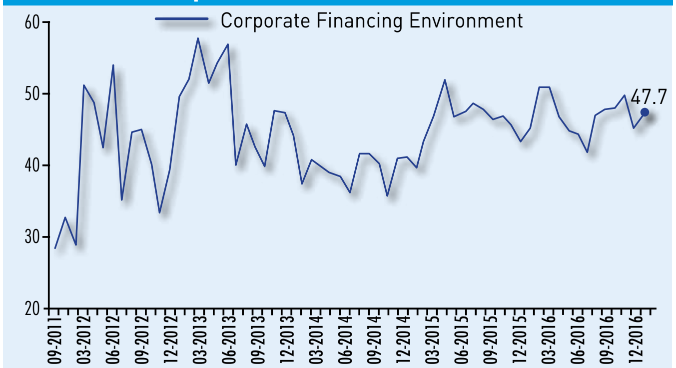
The CKGSB Business Conditions Index (BCI) registered 61.5 in February, a slight increase on January's mark of 59.8. For CKGSB's sample of successful businesses operating in China, optimism about prospects over the next six months still holds for the majority. The CKGSB BCI comprises four sub-indices. Of these, corporate sales fell slightly from 82.7 to 80.5, while corporate profits rose from 67.0 to 72.2. Both of these indices are well above the confidence threshold of 50. However there remain important problems in the other two sub-indices: corporate financing and inventory, both of which are currently below 50, have remained near the line long-term.

The BCI, directed by Li Wei, Professor of Economics at the Cheung Kong Graduate School of Business, asks respondents to indicate whether their firm is more, the same, or less competitive than the industry average (50), and from this we derive a sample competitiveness index. As our sample firms are in a relatively strong competitive position in their respective industries, the CKGSB BCI indices tend to be higher than government and industry PMI indices.

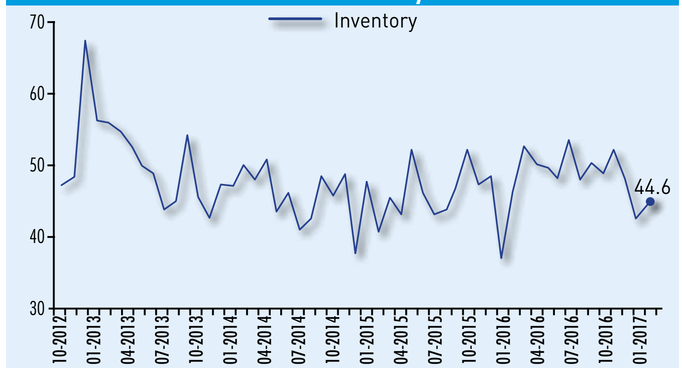
The BCI continues to track modestly upward



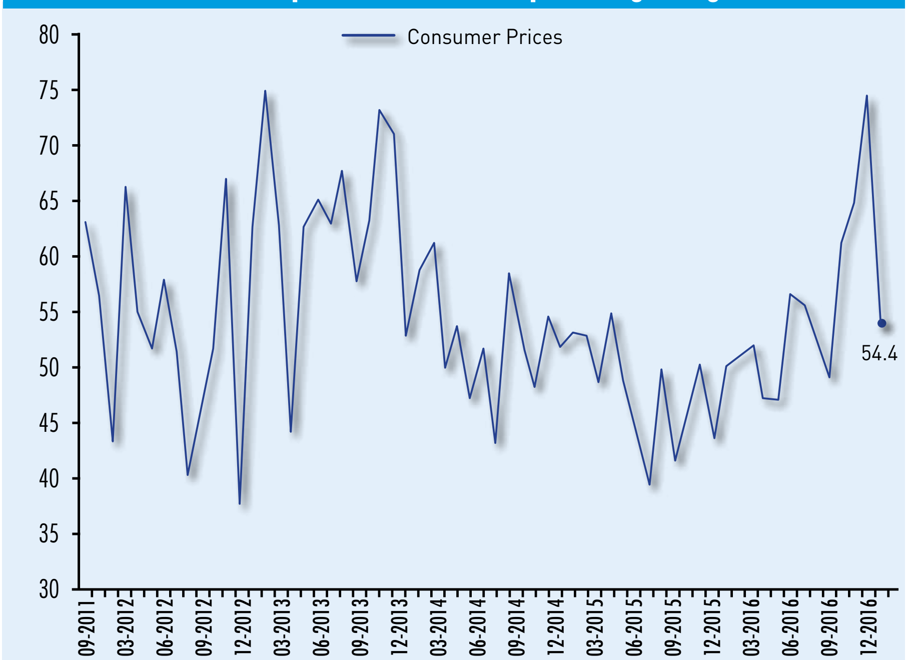
Corporate finance remains below 50...



...as does the inventory index



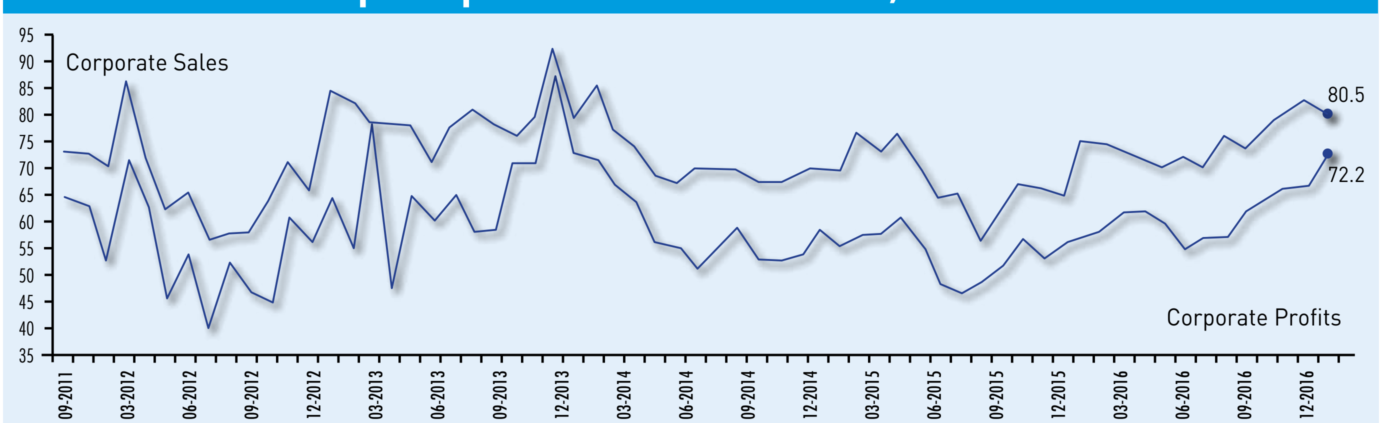
Consumer prices have been subject to big swings



The corporate financing environment index rose marginally from 46.0 to 47.7, but still remains below the confidence threshold of 50. The financing environment for the BCI sample has been consistently less than optimal, and, given that the CKGSB sample consists mainly of the leading powerhouses in the economy—small and medium-sized enterprises—this is a critical issue to address in future economic reforms. Rising from 42.6 to 44.6 in February, the inventory index has been in the doldrums for much of the history of the index, revealing an important long-term issue.

The consumer prices index plummeted in February, from 74.3 to 54.4, almost 20 points. It is unclear whether the recent big swings are related to shifts in consumer product prices over the Chinese New Year period.

The corporate profits index continues to rise, while sales fell



Good Signals

Huawei, one of China's most successful companies, pushes further forward

By Krystal Hu

Image by Wei Bingnan

Huawei is one of only a few Chinese companies that has become truly global, deriving more revenue abroad than at home. But it will not be satisfied until every consumer knows its name, and the US market is cracked

In January, the Chinese telecommunications giant Huawei made a grab for the world's attention at the Consumer Electronics Show 2017 in Las Vegas when it announced that its global flagship smartphone, the Huawei Mate 9 Pro, would be available in the US for the first time, and become the first phone in the world to have Amazon's Alexa voice service preinstalled.

In his keynote speech, Richard Yu, the chief of the 29-year-old Chinese company's consumer division, laid out an ambitious agenda for the global market and announced that the company had shipped 139 million smartphones in 2016, an amazing number, although still far less than Samsung and Apple. The company took in revenue of $26.5 billion on smartphone sales, a 40% increase over the previous year.

"Five years ago, we were nothing," said Yu, managing to both brag and sound humble at the same time.

Long a telecom equipment provider, Huawei shifted its focus to consumer devices around 2012, launching headfirst into the competitive handset arena. It quickly got a grip on the fast-growing industry, becoming a contender for top spot in terms of market share in China's cutthroat marketplace. It took the third spot globally last year with just over 9% of the world market, with smartphones making up about one-third of Huawei's total revenue.

But that's not good enough for Huawei. According to Yu, the company is aiming to be the world's No. 2 smartphone maker within two years and No. 1 in five years. Research firm Strategy Analytics showed that Huawei overtook Samsung as the world's most profitable Android smartphone maker in December 2016, controlling 2.4% of the global smartphone operating profit share, or $200 million, in Q3 2016.

"Entering the smartphone market is a natural step in Huawei's global expansion," said Yang Du, professor at the Business School of Renmin University, who also served as a senior management consultant for Huawei. "It's based on their long-standing industry and core technology, which is the right move for the company."

Smartphones are the highest-profile part of what is a sprawling telecom giant, which sells communications equipment in 170 countries—they are also the focus of the future. According to the company's own reports (Huawei is not public), in 2016, 44% growth in its smartphone business helped push total revenue growth up 32% to RMB 522 billion ($75.66 billion). Profit, however, was up just 0.4% on the year to RMB 37 billion ($5.36 billion), the company's worst performance in five years. Stiff competition saw the operating margin down to 9.1%, from 11.6% in 2015.

More than half of Huawei's revenue comes from outside China, making it one of only a few Chinese companies to have so far made the transition from a local business to a global brand—something that even Alibaba has arguably not yet managed. But in addition to powerful rivals, Huawei's overseas expansion has also been hampered by the company's origins and perceived close ties with the Chinese government. And it is this problem that is at the core of its next big challenge: Cracking the US market.

"There is still a very big gap for Huawei to achieve the same success in the US market," said Roger Sheng, a Shanghai-based analyst with American IT research firm Gartner. "It needs to find its feet before thinking about expanding."

Who is Huawei?

Huawei was founded in Shenzhen in 1987, a critical year in the early phase of China's economic reform process, by Ren Zhengfei, a former civil engineer in the Chinese army. Coming from the military, Ren had deeply-embedded ideas about self-discipline and hierarchy, which he used to create Huawei's well-known "wolf culture" of success through hard work, sacrifice and a spirit of innovation.

In the first years of the company, every new employee was given a blanket and a mattress, as many would sleep in the office. Today, after one year of work, employees are able to sign a "dedicated employee agreement," voluntarily forgoing some paid vacation days and overtime pay.

Despite his advanced age of 73, Ren is still a big personality and continues to exert huge personal influence on Huawei's daily operations in his role as company president.

His culture of self-sacrifice endures.

"I always work overtime, but the pay is okay," says Su Qi, a 22-year-old engineer, who works for Huawei in its Istanbul office, despite the greater sense of personal danger there. But that's nothing to the selflessness shown by Su's colleagues in West African countries who stayed at their posts during the 2014 ebola outbreak as other international companies evacuated their staff. Those employees later were rewarded with special bonuses.

Huawei revels in this kind of devotion. Its 2015 annual report declared: "When a crisis occurs, you will find Huawei employees heading toward it."

Huawei also encourages loyalty with its unique employee ownership structure. Ren Zhengfei has only a 1.4% share in the company, with the rest spread among more than 80,000 employees who have earned a share. There are very strict performance appraisal systems inside the company, and only those who perform well enough qualify to be awarded with company shares—Su has not yet got a share.

The idea underlying this scheme is to share both responsibilities and benefits with his colleagues—"I want everyone to act like the boss," Ren has said. However, according to the *Harvard Business Review*, the plan also originated from Ren's trepidation of owning a private company at a time when private ownership was new in China. He thought the safest thing to do would be to spread out the ownership.

The scheme has enormous impact in how profits are allocated. Employees are eligible to receive not only salaries, but also bonuses and dividends if they are in the right posts. The company is private, so the full details are not available, but in 2015, about 1,000 employees were reported to have each made more than RMB 5 million ($726,000) for the year. This largesse no doubt benefits the company overall, but it also creates at least some tension among junior employees who are not part of the dividend scheme.

"Those people are not working as hard as us," said an engineer who has worked at Huawei for three years. "Sometimes they just sit there and kill time at work."

The employee-ownership arrangement has also raised difficulties in governance.

"Normally, company owners give equity shares to executives to make sure their benefits are aligned," says Mark Greeven, Associate Professor of the School of Management at Zhejiang University. "But in Huawei, many employees have equity shares. How can you govern them?"

Greeven says he believes it's an ongoing experiment inside the company.

Another management experiment inside the company is the CEO rotating system, which was adopted in 2011. Initiated by Ren, the mechanism consists of three senior executives, currently Guo Ping (finance), Ken Hu (human resources) and Eric Xu (business strategy), who take turns acting as CEO for six months each. The three rotating CEOs have more influence in decision making during board meetings than the other 10 directors on Huawei's board. At the same time, Ren maintains his role, mainly coaching and mentoring the three CEO's, as well as exercising a veto right over major decisions.

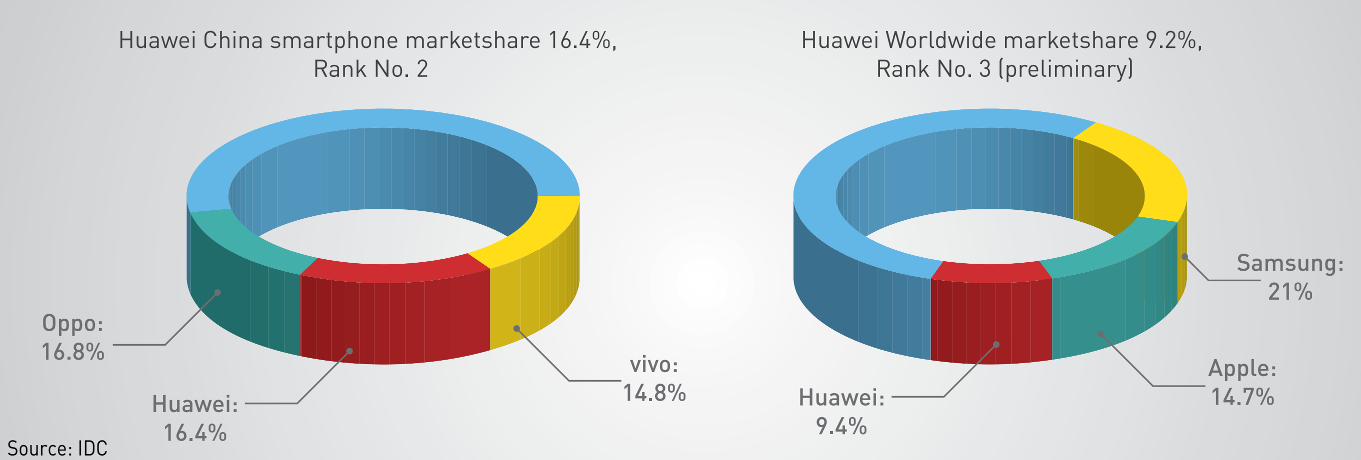
It is believed that the system was part of Ren's plan to cultivate a successor for his business empire. In Asian culture, the search for a company successor usually starts from the family. Ren's daughter, Sabrina Meng, is now Huawei's Hong Kong CFO. His son, Ren Ping, works for a subsidiary that provides hotel and ticket reservations and trade show support, but shows little interest in leading the company. The system of rotating CEOs, meanwhile, is seen by many as having helped Huawei to develop a more democratic decision-making process, and the question of the succession is still, at least publicly, unresolved.

R&D Obsession

Huawei's business history of bootstrapping its way to the top is to a large extent the result of Ren's fiercely hardworking, don't-take-no-for-an-answer personality. The company had a modest start as a sales

Competitive Domestically and Worldwide

Huawei's 2016 smartphone market share is impressive at home and abroad



Source: IDC

agent for a Hong Kong company producing switching equipment, but it was not long before higher goals were set.

China was just opening up to the West when Huawei got its start in the late 1980s and manufacturing was still in its infancy. At the time, many Chinese companies were entering joint ventures with foreign enterprises to learn from them, but Ren instead decided to reverse engineer foreign technology to allow Huawei to compete rather than cooperate. The strategy worked out well, helping the company achieve dominance in the domestic telecom market, including as a key supplier to the government. Huawei has been pushing its own limits ever since.

"There is a strong obsession with R&D in Huawei," says Zhejiang University's Greene. As a professor in management, he has worked closely with Chinese companies and is impressed by Huawei's strategy. The R&D capability he says has "allowed them to internationalize because they can stay closer with customers."

Huawei quickly moved on to selling infrastructure equipment for mobile networks, mobile services and enterprise services internationally. By 2012 it had become the world's largest telecommunications equipment maker.

But the journey was not without bumps. In February 2003, Cisco Systems sued Huawei for allegedly infringing on its patents and stealing source code used in its routers and switches.

"It's very normal in the telecom industry," says Doug Clark, an intellectual property lawyer based in Hong Kong. "If companies have their own patents, they can say what others need to pay to take a license from their patent. If they get sued, they can also sue back."

Cisco dropped the lawsuit 20 months later in exchange for a promise from its rival to modify its product lineup. But Huawei learned its lesson and began aggressively shoring up its intellectual property position. In 2015 Huawei filed almost 4,000 patents, making it the biggest patent-filer in the world for the second year in a row.

"Huawei made a specific strategy of filing a lot of patents," Clark says. "This is an industry where having a lot of patents is very useful, so people file as many as they can."

> **In 2015 Huawei filed almost 4,000 patents, making it the biggest patent-filer in the world for the second year in a row**

The change in strategy helped facilitate the company's global expansion, and at the same time become a powerhouse of innovation. The company's R&D budget, $9.2 billion last year, placed it ninth among all companies in the world in terms of such investment. About 60% of its employees are engineers, while the number at Google is 40%.

Move to Mobile

But the company's biggest move in recent years has been its effort to become a household name. For many years, Huawei made white label smartphones, meaning it manufactured devices that carried the brands of other companies. But in 2011, Huawei decided to produce mobile phones under its own name.

"As an equipment provider, Huawei built the tunnel for carriers," says Roger Sheng, the Gartner analyst, referring the infrastructure that powers phone networks. "Then it saw opportunities in the rise of the smartphone business."

Sheng says that the history of Huawei as an equipment manufacturer before its foray into mobile phones gives the company a unique edge. For example, Huawei is one of a limited number of phone makers that can produce its own integrated circuit chips, which helps lower the cost.

But whatever the combination of factors, Huawei's success is undeniable. According to research firm IDC, in 2016 Huawei shipped over 130 million phones, ranking third worldwide at about 9.4% market share. Apple and Samsung had around 14% and 20% respectively. It is currently No. 2 in China's hyper-competitive market, with 16.4% market share. In Europe, it is now the top-selling smartphone maker in Portugal and the Netherlands and the second biggest in Italy, Poland, Hungary, and Spain. In Latin America, the company sold 12 million smartphones in 2016, a year-on-year increase of 39% for the region.

Part of the reason for its successful market share grab is that Huawei has so far mainly sold lower-end phones—but if it wants matching financial success it must change perceptions yet again.

"The consumer products business has lower margins compared with selling telecom equipment," says Sheng. "Only by selling high-end products can it make money."

The efforts appear to have paid off, and the new P9, which is selling at $500, has created a buzz among consumers. A joke about Huawei's upgrade on China's social media captures the essence of the shift: "In the past you buy Huawei because you don't have the money, now you don't have the money to buy Huawei."

Still with an eye to the future, Huawei is also trying to get ahead through innovation. In December 2016, Huawei released its technology for 5G bearer networks, aiming to help set standards for the latest mobile technology. Sheng believes this will give Huawei an edge in future competition.

"The standard for the global market hasn't been made, but Huawei has already partnered with foreign carriers," said Sheng. "It's sure to have a higher status than it used to."

Next Target: US

"When it's competing with Samsung, lack of recognition is one of the major challenges for Huawei in the global market," says Xiaohan Tay, a senior market analyst at IDC. Still, she thinks Huawei has done a great job in marketing in Europe. In April 2016, Huawei launched the P9 and P9 Plus smartphones in London, partnering with iconic German photography company Leica.

"Huawei has got a decent presence in the high street stores and is getting more mainstream notice," says Fiv Scholarios, a technology fan from the UK. "Partnerships like the Google Nexus 6P helped bring it into the mainstream."

Now that Huawei has built its footing in major markets, the company is marching towards the US market—hence the high-profile appearance at CES 2017.

But it will take a lot more than a cool product launch to truly win over the US market. Previous attempts by Huawei to introduce non-consumer equipment to the US have been stymied by the company's ties to the Chinese military and government.

The relationship has been a double-edged sword in its global expansion. On one hand, government support helped it build strong R&D capabilities, and Huawei continues to receive loans to help with their international expansion. For example in 2015, China Development Bank helped raise several billion dollars to help Huawei bid to build a broadband network in Mexico.

But it has also raised cyber security concerns in foreign markets, particularly the US. A 2012 US House of Representatives Intelligence Committee investigative report claimed Huawei presented a clear "threat to US national security interests," suggesting Huawei's telecom networking gear could be used by the Chinese government to spy on Americans.

> **When it's competing with Samsung, the lack of recognition is one of the major challenges for Huawei in the global market**
>
> Xiaohan Tay
> Senior Market Analyst, IDC

The committee pointed to Huawei's failure to clearly answer questions about how its board of directors is selected, although they did not have any direct proof. Because company management's connection to military or civilian security services, the West suspects Huawei's products may have so-called 'back doors' built in for spying.

"A lot of private security companies in the West or those making security hardware or software also have ex-generals on the advisory board," said Graeme Batsman, a data security consultant and blogger at datasecurityexpert.co.uk. He puts the accusation down to protectionism and the old Cold War mentality towards the Sino-US relationship.

Apart from core networking equipment, which has raised the most concern, Huawei smartphones have been on sale in the UK for two plus years and in the US since last year. Already major UK mobile networks use Huawei networking kit, with some government clients using their infrastructure. But as Huawei phones enter the US market, spillover concern by consumers has been difficult to mop up.

"It bothers me," said Lewis Scott, a government worker from Florida. "I worry anything on my phone becoming their property, like photos and passwords."

Despite the concern, Scott became the first one among his friends to order a Huawei Honor 8 Phone on Amazon last November after watching several YouTube reviews. The phone cost him $335, which he really liked because "it has just as much power and speed as the Samsung Galaxy 7 and iPhone 7 with more capacity for half the price." But after-sale service may be a potential risk, as Scott has no idea about where to get it fixed.

Huawei lacks agreements with the US's big four carriers, Verizon, AT&T, T-Mobile and Sprint, so US customers have to resort to online retailers such as Amazon, or Huawei's website, to purchase one of their devices, reducing the brand's visibility in the country. As consumers tend to opt for something they already know, Huawei is still struggling to get noticed in the US.

This year, Huawei plans to grow its smartphone line as the company is keen to consolidate the gains it has made in Europe and Latin America, and make breakthroughs in the US. "They do take their time to expand organically rather than aggressively by investment and acquisition," said Greeven of Zhejiang University. He is optimistic about what is ahead for the emerging multinational company. "Huawei may be a bit slower, but they are steady from core competence and build reputation, and slowly dig away market share and move up."

In a statement accompanying Huawei's somewhat lackluster 2016 financial report, rotating CEO Eric Xu, in a show of classic Huawei spirit, refused to take anything for granted.

"We can't cling to what has worked or what we have gained, because past success is not a reliable indicator of the future," Xu wrote. "We need to hone our skills, step up to the plate, and aim for the stars."

Conversations

Ye Guofu
Co-founder, MINISO

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"At the time we founded MINISO, the physical economy was in a decline due to the rise of e-commerce. Before that, the physical economy had exerted a monopolistic influence on the market relying on its sales channel advantage"

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Clayton Christensen
Kim B. Clark Professor of Business Administration
Harvard Business School

"I believe that innovation doesn't have to be a game of chance if you truly understand how people make the decision to purchase one product or service over all other options."

Andy Rothman
Investment Strategist, Matthews Asia

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"Last year China accounted for 35% of global economic growth, a larger share of global economic growth than the US, Europe and Japan combined."

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Damien Ma
Fellow and Associate Director of the Think Tank
at the Paulson Institute

"It is increasingly harder for people to zero in on what the key issues in China are. And the reason for that is the noise to signal ratio has gotten much, much higher"

How MINISO became a Mega-success

MINISO co-founder Ye Guofu takes us inside his emerging retail empire

By Tom Nunlist

"The rise of the internet is killing physical retail," so goes the popular narrative. That idea certainly has merit and evidence to back it up—some types of retailers, such as traditional malls and shopping centers, have faced huge challenges. But perhaps it would be more correct to say that it is forcing change. Another truism that has become popular in recent years states, more or less, that the presence of constraints, as opposed to complete freedom, often better stimulates creativity and leads to better end results. This seems to be the case with the variety retailer MINISO.

MINISO was founded in 2013 by Chinese entrepreneur Ye Guofu and Japanese designer Miyake Junya. In just a short time, their company has exploded to an emerging business empire with 1,800 stores in 40 countries, delivering an eclectic collection of affordable, curated goods, challenging the physical retail naysayers. China alone has more than one thousand stores, stocking items like cups and socks typically around RMB 15 ($2). And as Ye explains in this interview, MINISO is a bricks-and-motor-only business model built around the reality of a world with e-commerce. Through careful consideration of the customer and a unique aesthetic, it manages to do what online stores cannot: Deliver an experience.

Q: What were your initial goals starting out, and did you imagine that you would become successful so quickly?

A: At the time we founded MINISO, the physical economy was in a decline due to the rise of e-commerce. Before that, the physical economy had exerted a monopolistic influence on the market, relying on its sales channel advantage. Although retail product prices soared because of the many distribution layers, far surpassing actual value, consumers had no other choice but to accept it. But when e-commerce emerged, the physical economy met a [great challenge]. The public was also pessimistic about the future of the physical economy and thought that e-commerce would undoubtedly [take over]. E-commerce swept the market full-force while the traditional retailers still clung firmly to the old model, unwilling to let go of the huge profits brought by

> E-commerce swept the market full-force while the traditional retailers still clung firmly to the old model, unwilling to let go

the distribution system… As an insider in the physical economy for more than ten years, the situation [frustrates me]. But I firmly believe that it is the physical economy that will dominate the future as long as the exposed problems can be solved and it can refocus on the products.

So we hope to establish a new business model to break the price inflation of traditional retailing and make the price truly match the actual value of the products, and we also focus more on quality improvement. Moreover, as a consumer myself, I deeply understand that consumers all desire a combination of high quality and low price, instead of low price and poor quality. And after going around Europe, America, Japan and South Korea and learning from their retailing expertise, we established MINISO.

The success of MINISO, even though quite large, is still within our expectations because this model both meets the trends of economic development and the true needs of consumers. So since the foundation, we have foreseen that MINISO will enter into different markets around the world and be widely recognized. However, we didn't predict that it would happen in such short time—1,800 stores have been opened in the world within three years. Such speed is far beyond our original expectations. But it also proves that the market is in bad need of such retailing brands like MINISO to break and rewrite the industry rules.

Q: What was your inspiration for the store?

A: Many factors together inspired our brand. During that initial start-up period, we traveled to different places around the world hoping to find an ideal model to revive the retail business of the physical economy. We were inspired by the 100-yen shops popular on Japan's streets, and the harmonious coexistence of physical economy and e-commerce in Europe and America's markets. Also, that period also witnessed the rise of minimalism, which was quickly accepted by consumers from different backgrounds. It meant that after fully experiencing sophisticated design, consumers are now longing for simply styled and quality products to adorn their lives. This [gave] us the right direction. And so MINISO was established by combining these factors into our stores' furnishings, product design, business model, and so on.

Q: How did you meet the chief designer, Miyake Junya, and what was the process like creating the concept and feel of MINISO together with him?

A: [We met] by coincidence and also by destiny. Our acquaintance is indeed a reflection of an old saying in China: Everything is predestined. At the time, [the team] only had a very general concept of our store. There was still much room for improvement and many things to be deeply considered. It happened that one of my friends introduced Miyake Junya to me. Since he entered the field of design, he has cast doubt on the overly complicated and exaggerated designs that prevail in the [consumer retail] industry. These were also our thoughts—if only we had met earlier! This consistency of concept laid the foundation for our further cooperation. And so after some discussion, we reached an official partnership that perfectly helps us solve the problems [we saw] in product design.

Q: MINISO stocks some 4,000 products. How do you design and curate such an enormous number of products so that they all feel like they belong in the store?

A: We established a product center to be in charge of the research and development work of all the products. The 200 staff in the team are all professional buyers, and they all travel around the world, to all the fashionable cities, to discover the most promising trendsetting products and ideas. Then, taking into consideration our target consumers' demands and the deliverability of MINISO, they put forward development proposals for new products. After receiving the proposals, we will decide their feasibility according to our database. Being approved, the proposals will be delivered to Miyake and his international design team to do the design work. This team is composed of elite designers from all around the world, but especially Sweden, Denmark, Norway and Japan. Their designs favor the simple, pure and unadorned characteristics of Northern Europe and Japan. This is what establishes the unity of our product designs.

Q: What is the balance between ensuring products conform to a certain aesthetic, and preserving the 'treasure hunt' feel of going to a variety store?

A: It is indeed the art of display. As a designer brand of fast fashion, our products are large in quantity and we also update rapidly. MINISO demands a product turnover of 21 days, with products updating every seven days so as to keep the feeling of novelty for consumers and give them a new surprise every time they come to the store. Therefore, we pay much attention to the product displays… It may sound easy, but it is really complicated in practice. What's the difference in number of columns when different items are displayed on the same shelf? How to create the best visual effect? What's the most proper height of the shelf so that the consumers can most easily reach the items? And so on. The display itself is creative work that demands the spirit of exploration. Once the standard is set, we will apply it to all MINISO stores around the world. But we also encourage our staff to understand and flexibly apply these standards.

Q: You talked a bit about e-commerce already, but what precisely about MINISO makes it so successful in the face of online retail?

A: In fact, e-commerce is not so threatening as imagined. The public says that e-commerce has inflicted a fatal blow to the physical economy, but you see some enterprises like Uniqlo not only survive but even thrive.

The key to our success is that we have established a unique business model. With our remarkable product design, affordability and excellent shopping experience, we have created a "New Retail." As mentioned before, we have a professional international design team. They don't create things out of thin air, but instead probe into the supply chain and participate in the research and development work. They study the feedback from back-end data and design the products to have simple and smart characteristics that integrate texture with practicability. Meanwhile, we strictly select quality global suppliers as our partners, including some big names in the industry, such as Intercos and Givaudan, in order to guarantee the quality of our products from the origin. Meanwhile, bulk purchasing and 100% buyout helps us push our production costs to the lowest possible. Plus with our low gross margin of 8%, our products can really realize "high quality and low price." Furthermore, we pay much attention to store decorations and services because these two factors give consumers the most direct impression. Normally, we will spend about RMB 400,000 decorating a store of 200 square meters. We promise to make our customers feel comfortable with every detail. In the aspect of services, we believe "the best service is no service" (meaning customers are not disturbed by the staff). We hope our customers can freely select the products in the most relaxing way possible. Consumers are very smart, and they know where to buy the [best products] at the best price. When MINISO meets their every demand, they will naturally choose us.

Q: What is the balance between your physical and online presence?

A: We just have physical stores. We don't sell online. Now we have strategic partners in over 40 countries and regions around the world… We predict to enter over 100 countries in the coming year and open 4,000 more stores. We believe physical sale is the future and we will keep focusing on improving our stores.

Q: Is there a great deal of localization at your international stores, or do you find that customers everywhere enjoy the variety store experience?

A: Before MINISO enters a new country, we first do many tasks such as carrying out intensive surveys to understand local policies and regulations, cultures and traditions. After entering the market, we will also make proper adjustments in aspects like the product variety according to local demands. However, we will never change our service goal and location selection principles. No matter how consumption patterns change, consumption needs are always there, and consumers will never tire of shopping in stores. When we truly realize our dream of offering high-quality, low-cost products, and give consumers a relaxing shopping experience, they will definitely welcome our stores.

> With our remarkable product design, affordability and excellent shopping experience, we have created a 'New Retail'

Q: It seems that the most challenging market has, ironically, been Japan, which still only has a few MINISO stores. What has been the challenge there?

A: The Japanese market is not like Chinese market or other overseas markets. The 100-yen shop concept originated from Japan and has become a very mature model after several decades' development. Some tycoons have monopolized the market as well. As a new brand, it's hard for us to enter this well-divided market, much harder than entering the Chinese and other markets. At the same time, as a developed country, Japan has a very mature consumer market generally. From department stores, KA hypermarket to online shopping, they have already passed the stage of fierce competition. Every channel possesses its own stable customer groups. So there is a high degree of consumer loyalty that won't be easily influenced by others. Nevertheless we will continue to try to grow our market share there.

Q: What is in store for MINISO in the next few years?

A: After several years' development, MINISO has basically completed its strategic layout in China. 2016 witnessed the start of MINISO's march into international markets. In the coming years, the speed and ratio of our overseas expansion will far surpass that in China's market. We estimate that by 2020, we will have completed the target to open 6,000 stores worldwide. And we will stick to our mission—"Let consumers around the whole world buy better quality products at lower prices"—and make MINISO a world-class retailing enterprise.

Clayton Christensen on Innovation

According to the famed business professor, innovation is about finding the 'jobs' that need to be done in our lives

By John Christian

"Innovation" in business, creating new products and services for consumers, is a difficult undertaking almost by definition. Many companies see the task as akin to gambling, and go about it by throwing ideas against the wall, hoping for something to stick. Professor Clayton Christensen, who has spent his career writing about business and innovation, says that this is the wrong idea. In his latest book, *Competing Against Luck: The Story of Innovation and Consumer Choice*, he argues that companies should instead adopt a more focused, process-oriented approach of finding the "jobs" that customers need to do in their lives, and creating products that make those jobs easier. In his view, there is nothing "lucky" about success in this area, so long as you know the right questions to ask.

Christensen is the Kim B. Clark Professor of Business Administration at Harvard Business School. He has authored numerous books over his decades-long career, some of which have become classics in the business genre.

Q: Perhaps your most famous book, The Innovator's Dilemma, *is almost 20 years old—in 2011* The Economist *called it one of the best books of all time. What keeps the book relevant despite progressively faster change in business and technology?*

A: *The Innovator's Dilemma* is based on theory, which we define as a statement of what causes what to happen, and why. The theory of disruptive innovation helps predict what competitive threats companies are likely to face, and helps managers predict what actions they'll need to take to address them. Good theory is applicable across time and industries and is thus not trendy or relevant only to specific companies in vogue at the time. Thus, the theory is as relevant today as it was 20 years ago.

Q: Competing Against Luck *is also about innovation. Can you explain the central concept behind the catchy title?*

A: In spite of all of the advances in analytical tools and techniques and unprecedented levels of data on customers, too many organizations still consider innovation a game of chance. Try enough things and eventually you'll get something right. Play the odds and hope to get lucky. My co-authors and I believe that innovation doesn't have to be a game of chance if you truly understand how people make the decision to purchase one product or service over all other options. Once you understand the causal mechanism of that decision, what we call a "Job to Be Done," you don't have to count on luck with innovation. You can create products and services that you know in advance customers will want, and can leave relying on luck to your competitors.

Q: "Jobs Theory" in the book tries to provide a framework to answer what causes a customer to purchase a certain product. Can you explain the difference between researching a customer's "Job To Be Done" and simply researching their needs?

A: We define a "Job to Be Done" as the progress a customer seeks in particular circumstances. Both parts of that definition are important: A customer is looking to achieve something that she has been struggling with, and the circumstances in which she is trying to achieve that matter in how she'll try to solve that struggle. A well-defined job, which should have not only functional, but emotional and social dimensions, offers a kind of innovation blueprint. This is very different from the traditional marketing concept of "needs" because it entails a much higher degree of specificity about what you're solving for. Needs are ever present and that makes them necessarily more generic. "I need to eat" is a statement that is almost always true. "I need to feel healthy." "I need to save for retirement." Those needs are important to consumers, but their generality provides only the vaguest of direction to innovators as to how to satisfy them. Needs are analogous to trends—directionally useful, but totally insufficient for defining exactly what will cause a customer to choose one product or service over another. Jobs take into account a far more complex picture: The circumstances in which I need to eat can vary widely.

Q: How do you spot a "Job?"

A: There are lots of ways to identify "Jobs To Be Done," but among them we discuss a number of important questions to ask yourself in the book. Here are five of them:

The first is to look in the mirror and ask yourself, "do you have a job that needs to be done?" If you identify a job, it's likely that others will have that job, too. The second is, "where do you see non-consumption?" You can learn as much from people who aren't hiring any product as from those who are. Non-consumption is often where the most fertile opportunities lie. Another is, "what workarounds have people invented?" If you see consumers struggling to get something done by cobbling together workarounds, then pay attention to that. They're probably deeply unhappy with the available solutions—and are a promising base of new business. The fourth is, "what tasks do people want to avoid?" There are plenty of jobs in daily life that we'd just as soon get out of. We call these "negative jobs." Finally there is, "what surprising uses have customers invented for existing products?" Recently, some of the biggest successes in consumer packaged goods have resulted from a job identified through unusual uses of established products. For example, customers began taking Vicks NyQuil, the cold and flu medicine, when they were not sick because it helped them sleep. In response Vicks came up with ZzzQuil.

Q: And how much does the process of spotting a job differ in the consumer and B2B worlds?

A: For B2B, the same types of activities you use for B2C job-spotting are still applicable, including in-depth interviews, observation, and looking for compensating behaviors. As for B2C, the most important thing is not the specific research mode but the questions you are trying to answer and the insights you are seeking. My co-author David Duncan and his colleagues at Innosight do a lot of work in this area and they would say that one critical difference is that a B2B customer is often not just one person, but a set of people who interact in some way to decide what product or service to purchase. So instead of an individual pulling a product or service into his life, it's the whole decision-making system that does this. Each of these people has their own "Jobs to Be Done," some of which are individual jobs, for example, "I don't want to look dumb in front of my boss." And some of which are jobs they have on behalf of the organization by virtue of their role in it, for example, "I have to procure reliable supplies." So the main difference in spotting jobs for B2B is that you have to identify and take into account a broader set of individuals, understand their "Jobs to Be Done," and then synthesize the resulting learnings to define the B2B job as a whole. But at its core, it is the same—it's about making progress in particular circumstances.

Q: Can you do this process in reverse (start with a solution vs a job)?

A: Yes. In fact this circumstance is very common, especially in technology-heavy or R&D-heavy companies. Researchers and scientists and engineers are constantly coming up with new technologies and asking "how could we make money from this?" My colleagues at Innosight have worked with many companies going through this process and what they'd say is that even if you're starting with a solution and working back to identify a job that it might solve, the most important thing is that, when you are done, you have answered the complete end-to-end set of questions: who is the customer, what is the progress they're trying to make, what are the circumstances, and so on.

Q: One of my favorite ideas from the book was "cheaper and crappier is better than nothing." What's the balance between making something good and getting it out there quickly?

A: What's important is that the new product solves a "Job To Be Done" that is being underserved. For example, the first transistor radios had poor audio quality, but they allowed my brothers and I to listen to rock n' roll music outside of the earshot of our mother. Having a radio in our pocket—even with its poor audio quality—was infinitely better than having nothing. So it's not always about getting a product out quicker or not, it's about fulfilling an underserved job well enough.

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The Greatest Consumer Story, Issues Aside

Matthews Asia Investment Strategist Andy Rothman is positive about China's economy

By Tom Nunlist

Andy Rothman has lived and worked in China for almost 20 years, first as a US Foreign Service officer, then as a China macro strategist at brokerage and investment firm CLSA, and, since 2014, investment strategist at investment management firm Matthews Asia, which invests largely in consumer-facing companies in China. In addition to his core duties analyzing China's economy and political environment, he writes the *Sinology* letter, which sums up the tides of China's macro environment for the general reader.

Despite the periodic ferocity of China bears in recent years, who seem to perennially warn of China's imminent economic collapse, Rothman has taken a more positive and nuanced stance on the country's prospects—in particular the growing strength of its consumers. While acknowledging the great challenges facing China's economy at present, Rothman maintains that China has the world's "greatest consumer story," and that it will pave the way toward the future. In this interview, he discusses both, and tells us why all investors, not just those with China investments, should pay close attention to the world's second-largest economy.

Q: In your Sinology *letter for Matthews Asia, you often refer to China as having the greatest consumer story—what makes it so good?*

A: It's a combination of factors. Maybe the most important one is that income in China has risen at an incredible pace in recent years. Over the last decade, real income adjusted for inflation in urban China has gone up by 120%. You can compare that to an 11% increase during that same period of time in the US, or about 2% in the UK. So that arms Chinese consumers with the cash to spend. There's also lower household debt.

Another important factor is that Chinese are pretty optimistic about their futures. If you look for example at polling from the Pew Global Attitudes survey, they ask Chinese people do you think your kids will be better off financially than you are? More than 80% of them say yes. Contrast that with the last time Pew asked that question in the United States and only 30% of Americans said yes.

Last year China accounted for 35% of global economic growth, a larger share than the US, Europe and Japan combined

Q: It is also true that Chinese consumers are still on the whole less wealthy than Western consumers. That does mean there is more room to grow, but even given the optimism on the part of Chinese consumers, how much can we count on that? What kinds of questions should we ask ourselves on the negative side?

A: While I am very optimistic about the consumer story in China, I also want to be realistic. Almost every part of the Chinese economy, for every year, on average, for the foreseeable future, is going to grow just a little bit more slowly on a year-on-year basis. So we need to be realistic in the sense that over the next ten years, real income growth is not going to be 130%, but the base has gotten very big, so the incremental expansion is still huge. We need to be realistic that retail sales growth, which a few years ago adjusted for inflation was running at 11% and now is just under 10%, is going to continue to decelerate. If we are investors looking at companies that sell cars or shampoo to the Chinese, we need to be realistic that growth in sales revenue is not going to be as fast in a few years as it was in 2016.

Now that said, one thing that people forget about is the base effect. For example last year China's GDP growth was just under 7%, ten years earlier it was about 13%, so that's significantly slower [than it was]. But those numbers are multiplied on a base, and the base for last year was 270% bigger than the base ten years ago, which means that the incremental expansion in the size of China's economy last year at a much slower growth rate was still 70% bigger than it was at the faster growth rate ten years ago, and so a better opportunity to sell goods and services to Chinese people because the size of the expansion was bigger and there were better opportunities to invest in those companies.

This is why I'm always pained when the media tends to frame each quarter's GDP growth as "this quarter was the slowest since the Tang Dynasty." It's going to be growing more slowly on average each quarter for many, many years until it stabilizes at two or three percent growth like we are happy to experience in developed economies.

Q: You write for an investor audience that is very savvy, but China is very complex, and on top of that you have to contend with mainstream media, which, as you said, can get hung up on things like headline GDP numbers. So what are the challenges you face in just communicating what is happening in China?

A: One of the biggest problems that I face now is that I feel the media in its coverage of China is often looking for the most dramatic, most sexy story. And so as a result, they highlight real, significant problems in China… But my concern is that it seems that each time a problem is discussed, it is in conjunction with the expectation that that problem is going to cause a crisis or a hard landing sometime in the very near future. This has been a pattern for well over a decade now, and China yet continues to survive these problems and muddle through—growth rates are slower, volatility is higher.

One of the key arguments that I am making to our investors, or potential investors, is that China does face a long list of problems, but what is important to figure out is: What are going to be the consequences of these problems? Are the consequences going to be collapse, crisis, flames and locusts, or is it going to be more like what we have seen over the last ten years, which is every year a little bit slower growth, a little bit more volatility, but still one of the fastest growing economies in the world? Last year China accounted for 35% of global economic growth, a larger share of global economic growth than the US, Europe and Japan combined. And that's despite the imminent predictions of impending doom.

Q: One of the issues that you have downplayed, which is huge in the media, is debt levels in China, the reason being that the vast bulk of it is state debt. Why does that make such a big difference in the situation and how we should view it as a risk?

A: I think it is really important to recognize that the debt problem in China, unlike in the US in the last decade, is a corporate debt problem rather than a household debt problem—that makes it a lot easier to deal with. And then within the corporate sphere the debt levels are extremely high, but it's also important that they are primarily a problem for state-owned companies, and to recognize that the origin of China's debt problems was the state directing state-controlled banks to lend money to state-controlled companies to build state-directed public infrastructure. And my view is that whenever I don't see that included in the discussion of the debt problem, I feel that the writer doesn't really understand the differences between China's debt problem and debt problems in the US or European countries. That's not to say that it isn't a problem, but because there is no private participation, there's no equivalent of a Lehman Brothers. The Chinese government has the luxury that the US government didn't have of deciding when and how to deal with the debt problem, because you can't envision a Chinese state-run bank taking a Chinese state-run company to bankruptcy court, unless the state agreed. And that gives the Chinese government the ability to schedule resolutions, which I think they started doing.

Another important factor is that because all the banks are controlled by the state, there is no question of the kind of issues that amplified the problems in the United States, which is that many financial institutions lost confidence in each other and refused to do business with each other. That's not going to happen in an economy in which every significant financial institution is controlled by the state. So my view is that the debt problem is real, it is significant, but it is more likely to contribute to steadily slowing growth and more volatility and weaker bank profits than it is to contribute to a Western-style financial crisis, because China doesn't have Western-style banks.

Q: Earlier in the year you said that capital flight is maybe over. But in the wake of the US election and the strengthening dollar, that problem has returned. How long do you think the new episode of capital flight will last?

A: Let me answer that by saying I don't think the phrase "capital flight" applies to China, I prefer to talk about capital outflows. The reason for that, and I think it is an important distinction, is for me capital flight is about Chinese people losing faith in their economy, in their government, and selling their assets whether it is real estate or businesses and trying to get all their cash out of the country. I don't think there's evidence that that's happening. To me, what we are seeing is a combination of other factors driving money out of China. At the beginning of 2016, in January and February, the newspapers and TV were full of people arguing that by the end of 2016 China wouldn't have any foreign exchange reserves, and as a result of trying to defend against that, the RMB would devalue by 25% or 30% against the dollar. Well, by the end of the year China still had more than three trillion in US dollars in foreign exchange reserves, and the RMB devalued by about 6% against the dollar. So neither of those big scare stories happened, and the reason for that is that we didn't really see capital flight. Instead what we saw was a big jump in outbound investment by Chinese companies, an amount that increased by about 40% year-over-year. And if you add it all up that is about equal to two-thirds of the reduction in China's foreign exchange reserves, and so I think that's been one of the biggest contributors.

Other factors are involved as well. China has clearly spent some of its reserves defending the currency, but another issue is valuation. About 40% of China's reserves are held in currencies other than the dollar, and as a result of the strong dollar, those reserves lost value, and that contributed to the reduction in foreign exchange reserves. But it's also important to note that the speed of the outflows, after the beginning of 2016 was actually much slower. Now, I think there is going to be a lot of anxiety about this issue again. We haven't heard from a lot of the people that were hyping this issue in January and February 2016 in a long time, but I think they will be back very soon. In January, China's foreign exchange reserves dipped below $3 trillion US dollars, and while some have hyped this as a critical tipping point, to me it is an interesting number, but it is not really meaningful. You have to remember that countries are not setting out to have as much reserves as possible, they are setting out to have appropriate levels of reserves, and China has way more foreign exchange reserves than it needs by any metric. So this is a gradual reduction in reserves—and keep in mind Japan has the next largest stock of reserves after China, and it is only about one trillion US dollars. So I think this is going to generate a lot of anxiety for a couple of months, like it did at the beginning of 2016, but only until people realize that it is not a big story.

Media in its coverage of China is often looking for the most dramatic story

Q: One issue that does make some people nervous is the slowdown that is happening in private investment in China. The reason is that it seems to be a good indicator of faith in the economic future of China by domestic companies doing business here. What is behind that slowdown?

A: I agree that's an important question, and I am concerned about it as well. I'm also concerned that I can't explain it in a way that I feel comfortable with.

I think one of the big structural changes in the Chinese economy that many people are unaware of is this shift from an entirely state-driven economy, to one that's primarily driven by small entrepreneurial firms, just like in the West. When I started working in China several decades ago there were no private companies at all. Today more than 80% of employment and all of the new job creation in China, and certainly all of the wealth creation, is coming from these small private firms. So that's the most important part of the Chinese economy. If those firms are not investing in the future then we should be concerned about that. And up until the beginning of 2016, for several years, every month the growth rate of investment by privately owned firms was faster than that by state-owned firms. Private firms still make up the majority of investment, but they have been cutting back lately. Nobody is really exactly sure what is happening here.

Some people argue that this is in fact an inaccurate picture created by a change in the data collection and data presentation by China's National Bureau of Statistics. According to the NBS, however, there is not a data problem of this nature. Although some people are skeptical, I tend to believe them because this is an issue that they would rather not have to deal with, so if they could explain it away as a data problem, you would think that they would.

Possibly the explanation is that private firms are nervous about future prospects and are therefore holding on to their retained earnings rather than reinvesting in their businesses. Manufacturing overcapacity is certainly a factor. But I have to say that this is an unclear issue right now, and we have to watch this carefully and see how it plays out, because if private companies that generate all the new jobs in China don't invest in their futures then there will be a serious issue.

Q: There are big changes also happening in foreign direct investment (FDI) in China, and part of that I see is natural—the sectors you want to invest in do of course change. How should foreign investors approach these changes?

A: First, as someone who is following the Chinese economy, the slowdown in foreign direct investment in China doesn't worry me very much because FDI has always been a very small share of total investment in China. And in fact I would argue that the biggest impact of FDI in China has not been related to the number of dollars that have been put in, but instead the impact of those dollars in terms of bringing in modern manufacturing processes, HR, marketing, product development, and things like that. Another point to consider is that one of the reasons that FDI appears to have slowed down is that it has become mature, and that there is so much foreign business investment already in China that I think a lot of the new investment is coming from the money that has been earned in China, and so it is not counted as foreign direct investment.

But there are also new and troubling barriers that the government has put in place, or is talking about putting in place, but that's more of a commercial dispute issue between governments, rather than something that worries me a lot in assessing the health of the Chinese economy. I hope that the Chinese government will realize that one of the reasons that the Chinese population has become very wealthy over the past couple of decades is by being very open, and that reversing that would be detrimental to China's future.

> Even if you never own a Chinese stock, you really need to understand what is happening in China

Q: How do those big, government-driven changes, affect the way that Matthews Asia invests in China?

A: That doesn't really have much of an impact on us. We look at China as a domestic demand story. And this is aligned with what we talked about earlier as my view of China as being the world's best consumer story. So we tend to invest in Chinese companies that are producing goods and services to sell to Chinese people, and so the issues about foreign direct investment don't really have an impact in the way we invest.

Of our China investments, about 87% are in what I would call "domestic demand" stories—Chinese companies producing goods and services to sell to Chinese people. So that should be pretty well insulated from any disputes over FDI, or even any disputes that might arise under the Trump administration between China and the United States—that part of the story should hold up really well.

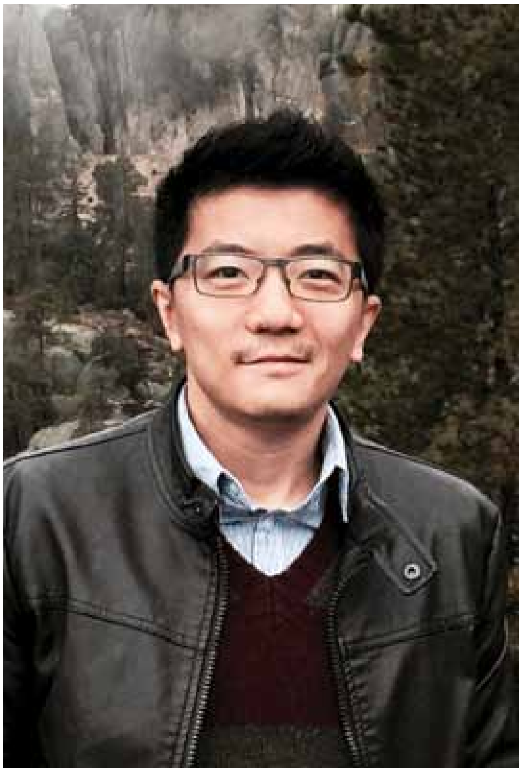
I think one of the changes that has taken place for investors in general is that it has become a lot harder to invest in the China growth story via multinationals, in part because there aren't that many multinationals who derive enough share of their revenue and revenue growth from China to make it a China play. And also in part because of government restrictions on foreign firms. But a bigger part of it is that Chinese companies have just become very, very competitive in recent years, especially in the consumer and services space. And so we are looking primarily at Chinese firms there.

Q: What are your thoughts on the Chinese economy looking ahead?

A: I have three broad comments. First, to reiterate why I think it's important for businesses and investors to pay attention to China, is that in recent years China has accounted for about one-third of global growth. So even if you never own a Chinese stock, you really need to understand what is happening in China, and I feel that a lot of the media coverage right now is biased toward saying that all the problems, which although real and significant, will result in an imminent collapse. But the story tends to be a little bit more boring than that. These problems are real, but are more likely to contribute to slower growth and more volatility, and understanding that is important.

The second point I would make is that 2017 is shaping up to be a volatile year for China, based on what Donald Trump suggested he might do. We're talking about currency manipulation, we are talking about raising tariffs on imports from China, or we're talking about ripping up the One China Policy, which has been in place since 1972. In the coming months we'll have a better idea, but my assumption now is that Donald Trump will listen to US CEOs, listen to the retired generals, and realize that having an antagonistic and confrontational relationship with China is not in the best interests of the United States, and that while there will be a lot of anxiety in the first half of the year, I think by the summer there will hopefully be more confidence that the relationship will continue as it has been for the last several decades, with recognition that there is mutual self-interest in a stable relationship.

Finally, even if there is increased tension in the US-China relationship, China's domestic demand story should remain very healthy.



Finding the True Signal

Damien Ma, Fellow and Associate Director of the Think Tank at the Paulson Institute, on China's leadership and the potential direction of economic reform

By Tom Nunlist

Making predictions about anything, never mind a country as large and complex as China, is a fraught affair. Damien Ma, whose day job sometimes includes making such prognostications, says it is gradually becoming more difficult. For many reasons—increased uncertainty, increased complexity, unclear data, shifting political winds—the "noise-to-signal" ratio in China has gone up. Added to that is a great proliferation of China punditry, as anyone and everyone seems to be weighing in. In this interview Ma tries to explain and cut through that noise to some degree.

Damien Ma is Fellow and Associate Director of the Think Tank at the Chicago-based Paulson Institute, which aims to strengthen US-China relations and promote sustainable economic growth, where he does economic and policy analysis. Ma is also a lecturer at the Kellogg School of Management at Northwestern University, and the co-author of *In Line Behind a Billion People*, which addresses scarcity and future economic growth in China, published in 2013.

Q: If one starts listing the macro economic problems in China—the slowing exports, the potential property bubble, capital flight, rising labor costs—it can pretty quickly become overwhelming. But for foreign business, what are the most important problems to understand, or perhaps a useful overall lens with which to look at the situation?

A: Worries about a lot of the accumulated problems that you have outlined, whether it is leverage, the property sector, or pressure on the currency, I think is partially a result of how people have assessed the first term of the new government under Xi Jinping. The government has not taken the drastic measures that were outlined in the reform document from the Third Plenum in 2013, and a number of observers I think are disappointed in the pace and the scope of the reforms so far.

In my view, Xi Jinping's first term was defined almost exclusively by politics:

> You have to do some politics if you are to lay the groundwork for some of these big, bold reforms to happen

anti-corruption and cleaning out the party and so on. But I am cautiously optimistic about his second term in terms of the economic reform agenda, and I wrote a piece not so long ago about that. I think if we see a bit of a pivot from the first term, and a doubling-down on the more broad set of reforms that were outlined in the Third Plenum document, that to me would bolster the confidence of both foreign and domestic businesses in the future trajectory of the Chinese economy.

The issue is how difficult those reform goals are to implement. There is no way they can avoid near-term pain, they want to put a floor on it, they don't want growth to dip too low, but I think almost everyone anticipates near-term pain if they are going to seriously tackle some of the structural reform problems that need to be solved. But as I said, if they are willing to more meaningfully pursue reform in the second term, then I think that will give investors and businesses more confidence that they are moving in the right direction and that in a few years China will rebound to a more sustainable growth level.

Q: What is your personal feeling?

A: What I portrayed above is probably the most realistic, cautiously optimistic case I feel can actually happen. There are obviously people who disagree with me and there are different views out there about what Xi Jinping's government will or will not do. But I do think if you look at what he said, and what he has been doing since coming into office in November 2012, it has been all about tackling issues within the Communist Party—that's been almost the entire focus. And so the question for many people is this: Is that trying to serve some other end? If the answer is yes—that the political agenda is trying to serve some other end—then I would argue that end is trying to make sure the political consensus and the conditions are ready to facilitate the actual execution on some of these economic reforms.

Just think about it. What is the big remaining piece of economic reforms? It's the state sector. That's really what everybody is looking at. There are certainly a lot of problems in the state sector: That's where all the corporate debt is building up, that's where most of the wasted investment happens. But those big behemoth local and central SOEs, especially local SOEs, aren't really allowed to exit the market because they are protected. So if you can deal with that particular area, which is the last remaining big area of reforms, that could potentially solve a lot of the problems in the Chinese economy. But to me that's a political question and less of an economic problem, because they know what to do. It's simply because they are state assets, that the problem inherently deals with politics. To me, you have to get the politics right if you are to lay the groundwork to realize some of these big, bold reforms. So that's how I look at it: First term all politics, second term hopefully that political capital will be cashed in on implementing the more difficult and challenging reforms.

Q: There's also certainly a lot of bright spots in the economy—for example in the tech industry, or advanced manufacturing. But it seems to me through some policy frameworks, such as "Made in China 2025," foreign companies are increasingly being boxed out of them. First, what do you think? And second, how should foreign companies view and prepare for these initiatives?

A: In general for companies that either have been operating in China, or want to enter China right now, I think the most important thing is to psychologically prepare yourself to understand that, at the macro level, China is no longer a capital-scarce country—it's primarily a technology-scarce market. So what it wanted back in the 1980s and 1990s when the first wave of FDI came in was just about capital: putting up plants and getting capital to its joint venture (JV) partners and so on.

But now that's not what Chinese companies want—they want technology. That is obviously a pretty significant change, and each foreign company will have its own strategy for determining the right amount of technology to transfer. For example, maybe you agree to transfer some technology, but keep core technologies in your home country. Just to give you an illustration, take a look at the different strategies between Airbus and Boeing. It is clear that developing commercial airplanes is a big part of China's industrial policy, not just for the aviation industry itself, but as an important national priority. China has had this goal to make a commercially viable aircraft that competes with the Airbus 320 and the Boeing 737 class of jets for quite some time. Since China was clear about what it wanted to do, Airbus' strategy was actually to come in and co-build a plant and help China assemble some of the actual aircraft. Boeing chose not to do that. So then the corporate strategy question is: Will that play out in some way in terms of how Beijing thinks of market share for Boeing planes versus Airbus planes? The answer to that is far from clear.

Each company has to decide for themselves what's acceptable to them. For example, will they limit themselves in market share if they are not willing to transfer certain technologies? If you are in a technology intensive and sensitive sector you might be a lot less willing to tolerate that. Or maybe you are willing to transfer under certain conditions, or perhaps develop a new intellectual property licensing regime. That is actually something people haven't talked about too much: Can we come up with a more innovative IP regime where both sides, both the Chinese JV partner and the foreign entity, share the fruits of their innovation labor so to speak? New ways of managing IP like that are not being regularly tested at this point, but I think there is some potential there.

Q: Your job is to understand China as it is now, but it is also to make predictions. Of course that doesn't always work out. You wrote a piece in 2012 that casted doubt on the future of China and Hollywood, and of course reality turned out differently. So in that light, what are your thoughts on the fraught nature of predicting anything with regard to China?

A: What's that famous Yogi Berra quote? "It's tough to make predictions, especially about the future." So I take his point, it is indeed very hard! If you recall in my book a few years ago, *In Line Behind a Billion People*, we stayed away from concrete predictions, and instead tried to paint a few likely scenarios with various levels of probability.

In terms of the China field in general in the last few years, in the United States and to a lesser extent in Europe, the bulls and bears have been arguing non-stop with each other about the state of the economy, or the state of politics. They argue about whether the economy is going to collapse by tomorrow, or that China will be the biggest economy by "X" year. But I think the thing that is actually important to take from all that debate is that it is increasingly harder for people to zero in on what the key issues in China are. And the reason for that is the noise-to-signal ratio has gotten much, much higher. There's a lot more noise now, and it takes a lot more work to find the signal. And that's kind of how I view my job—anyone that has been doing this for some time is trying to figure out what the true signals are, and what are the less relevant factors that people just ought to dismiss. I try not to pay too much attention to the bulls and bears fighting with each other about what exactly GDP growth might be, for example. That kind of debate, to me, doesn't help with actually understanding what's happening in the Chinese economy very much. If anything, it obscures more than it elucidates. Because there is more uncertainty in China than we have seen in some time, in part because of what Xi Jinping has tried to do, the range of outcomes has become wider, and so it's certainly more difficult to figure out exactly what could happen next. But this also means it is all the more important to think harder about what are these key variables that people really ought to be paying attention to, what are the real signals they need to highlight, and cut out the rest of the noise to really zero in on a few credible scenarios that make sense given the body of evidence.

To me the best way is to look at it at this point is to be as evidence-based as you possibly can. Of course that is often hard because data is a problem in China, and there are other factors. But to me that's really the only viable way at this point. The level of noise itself makes it even more important for experts and analysts to really counter that effect with sharp, evidence-based credible analysis. We need to make sure we look at any issue in China in a more balanced, objective way.

I try not to pay too much attention to the bulls and bears fighting with each other. If anything, it obscures more than it elucidates

Q: Why do you think the noise has increased so much? Do you mean noise in the data itself, or the noise of people pushing different perspectives on China at very high volume?

A: One important factor is the democratization of the China field—anybody can come in and say something about China now. Pundits comment on China, news media comment on China. The cost of entry for having a view on China is so low that basically anybody can have one. And then of course news cycles move fast, markets move fast, so there's a lot of trying to catch up and keep pace with news cycles and markets that don't necessarily include context. Much of that stuff to me is just noise. It doesn't necessarily lead you to any clearer understanding of what's actually happening.

Somewhat related to that point is China's status as the world's second-largest economy. It's gotten a lot more "popular" in the global imagination, just like the United States has been for a very long time. And so just like people all over the world have an opinion on the United States, a lot of people now also hold some kind of opinion on China, rightly or wrongly. If you are a large and successful economy, and you are out there with a huge global footprint, people are going to have to grapple with you and scrutinize your policies and moves. That's one of the challenges for China, and I don't think the Chinese government quite realizes that yet, or at least it hasn't done much to deal with it. A good question to ask is: Why have Americans said in Pew research surveys in the past few years that China is the biggest economy in the world? That's inaccurate. But a lot of people thought that was the case, and there was a reason for that. China is increasingly being thought of as more powerful and significant than perhaps it wants to be, or is comfortable being perceived.

It's a Given

The State of Chinese Charity

By Ida Knox

Image by Lisa Ye

Last November 11th, as billions of dollars in sales were being racked up during Alibaba's eighth annual Single's Day online shopping spree, the company's founder Jack Ma saw his name flying around the internet for a different reason: A child from a poor family with an uncanny resemblance to him had suddenly become an online viral sensation. Internet users throughout China were calling for Ma to help this "Mini-Ma," culminating in reports that Ma had pledged to cover the cost of the child's entire education through university.

The report turned out to be false, but the premature joy expressed at Ma's supposed largesse served to highlight the shaky realities of charity in China. While China ranks second only to the US in number of billionaires, it ranks 144th out of 145 countries on the 2015 CAF World Giving Index, which measures engagement in charity and willingness to help strangers. Similarly, the Hurun Report, a Shanghai-based wealth-research firm, reported that in 2014 China's top 100 philanthropists gave $3.2 billion—which sounds impressive until you learn that the sum is less than the amount given by just the top three givers in America.

And the charity gap isn't limited to China's top 1%. China's per capita GDP is about one-seventh of America's, but according to the *Economist*, China's per capita giving is roughly one-hundredth of America's.

"This whole sector is underdeveloped compared to other sectors," said Zhong Zhenxi, the Executive Director of Shanghai Roots and Shoots, the local branch of the global nonprofit focused on environmental education and humanitarian care.

The numbers aren't encouraging, but there are reasons to believe charity is on the rise in China. Although Jack Ma declined to fund the education of his diminutive double, he did host the inaugural Xin Philanthropy Conference in Hanghzhou last year, which brought together luminaries like former UN Secretary General Ban Ki Moon to discuss philanthropy issues. Moreover, Ma created a charitable trust with a partner five months prior to Alibaba going public in 2014, seeded with $50 million in share options. Those trusts are now worth nearly $3.5 billion, and are doing tangible good, for example through its rural education projects, which subsidizes schools and cultivates teachers.

Jack Ma at the inaugural "Xin Philanthropy Conference" in 2016

"Each rural teacher will be given 100,000 RMB ($14,454) and each rural schoolmaster will be given 500,000 RMB ($72,270)," says Ge Shangqing, who helps manage the effort. The grants give teachers that have shown outstanding commitment to education the means to continue their work. "Teachers and schoolmasters will also have access to skill improvement and leadership promotion training."

State of Giving

One factor that plays into China's low rank is relative poverty—until recently people simply did not have a lot of discretionary funds available to donate. In addition, generosity in China is different from the West.

"[Charity] was a concept that no one was familiar with," says Zhong. "In our culture we understand that we're supposed to help our family members and our neighbors, but to help people that are complete strangers to us, that's not a custom."

The question becomes how to translate a traditional cultural approach that stopped somewhere around kindness to the modern concept of charitable giving. This has been made more difficult by high-profile fraud cases.

"We have [had] some bad cases… that led to some distrust in the whole nonprofit sector," Zhong says. "If there's a scandal about any charity or any individual abusing another person's kindness, it hurts us all."

Few can forget Guo Meimei, a teenager in 2011 who caused one of the biggest scandals in the social media era by fraudulently claiming employment by the state-run Red Cross Society of China. More recently, tech giant Tencent launched its "99 Public Benefit Day" in 2015, a charity fundraising project that collected RMB 600 million in just three days, but faced heavy skepticism about where the money was really going, highlighting the problem of transparency.

"There's a lot of suspicion in China around charity, more than a lot of other places that I've seen," says Ange Cruz, former Director of Charity Link, an organization that provides networking opportunities for over 50 NGOs in the Shanghai region. "There have been a lot of scandals in the past, but also… people like to give a lot of credence to gossip here."

Generosity is the Law

Another factor in China's relative lack of charity is strict government regulation, which has presented various problems when it comes to giving away wealth. In fact, the China Philanthropy Research Institute estimated that about 80% of donations by the wealthiest Chinese go to charities outside mainland China because the legal framework makes organizing a charity troublesome, including an insistence that virtually all NGOs take on government partners.

But last year, China passed a new charity law that has very important implications, both positive and negative. According to IRIN News, a portal for the humanitarian community, the law "includes improved fraud protection, relaxed registration requirements, and incentives such as tax benefits," which it says may encourage charitable giving in China. The new law also removes the need for a government sponsor, replacing it with regulations for legal compliance and competent governance. Other regulations include a 10% cap on administrative spending and potential tax breaks.

The law is not without precedent or need. China currently lacks the basic institutional infrastructure necessary to promote philanthropy, with nine out of ten charitable organizations failing to meet basic standards for transparency, according to a recent report from Peking University's Center for Participation Studies and Supports, that evaluated 93 charities across 31 Chinese provinces.

However, although regulation is necessary, the law has also prompted harsh criticism, particularly in that it still requires government registration.

"It's been really difficult because [some NGOs] are not registered, and then this law brought forward that the organizations that they work for should be registered," says Cruz. "Corporations are not willing to take the risk now that they know the government is paying attention to the non-profit sector."

Impulse Giving

However, one unquestionably positive development is a surge in charitable activity by ordinary people boosted by technology.

In 2016, The China Charity Alliance (CCA) reported "a 127% increase in small-scale donations made via China's top four online donation platforms last year." In fact, over $140 million was donated through the top four platforms run by internet giants Sina Weibo, Tencent, and Alibaba subsidiaries Ant Financial and Tmall.

"The most positive thing about China's modern philanthropic environment is just the level of enthusiasm from people from all sorts of backgrounds," says Toni Friedman, the charities specialist at Community Center Shanghai. The center runs three charities: Giving Tree, which has donated over 100,000 bags of school supplies and winter clothes to children in need, River of Hearts, which helps place donated items, and Charity Link. "I feel like people are always trying to find ways to give back, which is awesome."

When it comes to encouraging charitable donations, Friedman says what leads to a successful campaign is "being able to show donors the direct impact of their contribution, and connect them personally to your cause."

Organizations like Teach for China do just that by bringing volunteer teachers to understaffed schools. In seven years, TFC has worked with over 90,000 students in Yunnan and Guangdong.

Philanthropy on Weibo, China's answer to Twitter, has also grown in popularity. Campaigns have raised up to $6 million. It hasn't been without struggle, as Ge notes, "People often challenge or query the charitable fundraising projects, even for the certified online fundraising platforms."

But donations are coming in, and although Weibo charity only makes up a small part of China's overall giving, it speaks to a general shift in the culture—people want to give back.

"What we've seen over the past year is a shift in giving," said Tom Stader, the founder and Board Chair of The Library Project, which has donated to over 2,000 libraries throughout China in the past ten years. In 2016 alone they donated to 274 libraries in 53 regions, a total of over 1,376,650 books. "We've seen a shift in giving from foreign currencies to Chinese yuan. There has been an uptick in Chinese volunteers and a huge uptick in Chinese companies wanting to get involved as donors and volunteers."

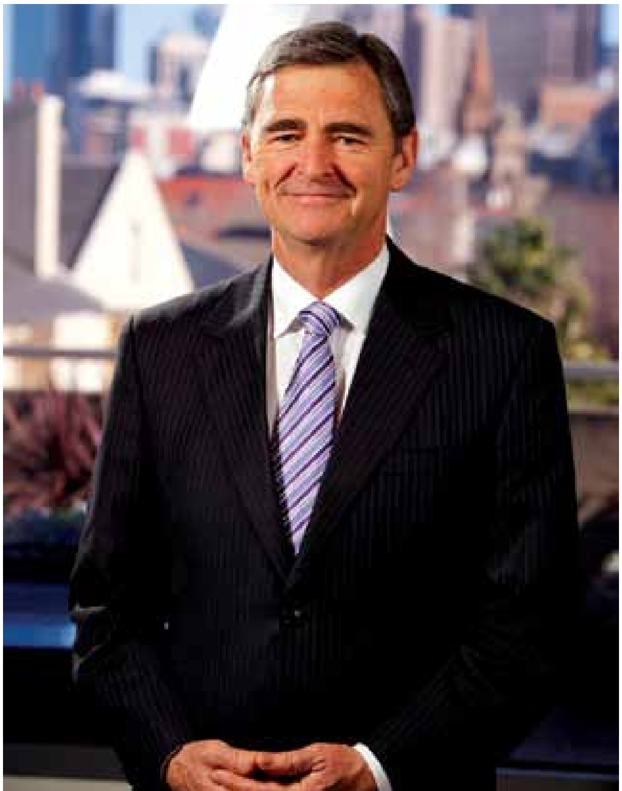
Stader adds: "The last 12 months have been nothing but positive with regards to the direction that the country is going."

Zhong, whose 18 years working with NGOs in China have made her optimistic, feels similarly.

"People's mindsets have changed over the years," she says. "They find peace and happiness in giving, and they want to set an example for their children."

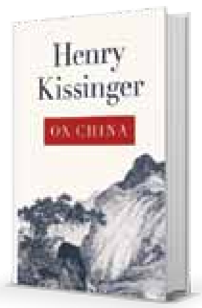
In Service of Knowledge

John Brumby recommends books on China

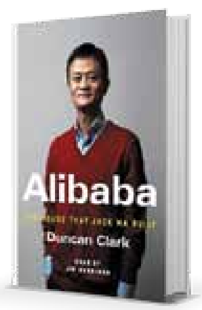


John Brumby is President of the Australia China Business Council, and former Premier of the Australian State of Victoria, serving from 2007-2010. He is also on the Australian local board of directors of Huawei. Brumby is the author of The Long Haul: Lessons from Public Life, *which offers practical lessons from his over thirty years in public service, and insights into the challenges facing Australia.*

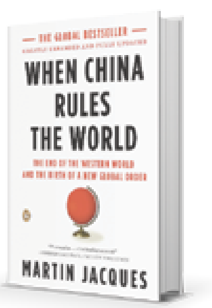
Riding the Asian Super Cycle, by Graham White is billed as an insider's guide to the next great growth surge, but it's really an economic story about global transformation. The central message from the book is that the huge growth in China, Indonesia, India and Korea is a long, long way from finished and will drive the next great growth surge for Australia.



I often quote a small passage from Henry Kissinger's *On China* where Kissinger makes the point that China sees itself not as a rising power, but as a returning power, returning to the position it has held throughout most of human history. It's important for people to get the message that right up until the industrial revolution, China was the most populous and largest economy in the world.

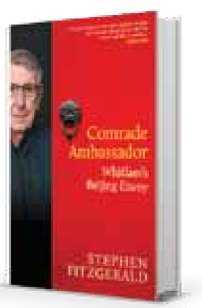


Alibaba: The House that Jack Ma Built, by Duncan Clark, tells the story not just of an extraordinary company, but also an extraordinary individual. Jack Ma came from humble beginnings, and managed to build a global powerhouse. I'm particular interested to see how Alibaba will develop further—with hundreds of millions of people on the website each day, it could also be that in a few years Alibaba becomes the world's biggest media company.

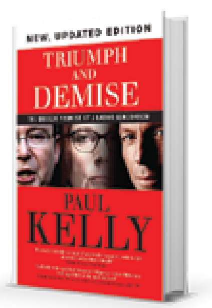


When China Rules the World, by Martin Jacques

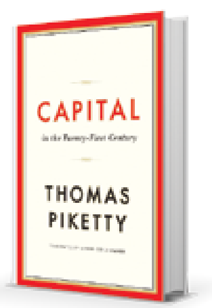
China in Ten Words, by Yu Hua



Comrade Ambassador, by Stephen FitzGerald



Triumph and Demise, by Paul Kelly



Capital in the Twenty-First Century, by Thomas Piketty