CKGSB KNOWLEDGE

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GOING FOR GREEN

How is China doing on its goal of cleaning up?

- CKGSB Case Study: Adream Foundation
- China's role in South-East Asian e-commerce
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Building Relationships

As the 2nd China International Import Expo drew to a close toward the end of 2019, President Xi Jinping reiterated his aspirations of strengthening China's relationships with its global trade partners. "Distances between countries are getting shorter, and interactions among countries are growing, hence the possibility of differences and frictions," Xi said. "The right solution lies in consultation and cooperation."

In this issue of *CKGSB Knowledge*, we take a closer look at China's relationships, particularly with its neighbors in Asia. **"Delivering Convenience"** (page **35**) explores the growing e-commerce market in Southeast Asia and how China's tech titans Alibaba and Tencent have set their sights on the region. **"Blueprint to Success"** (page **47**) discusses how China has consolidated its largest shipbuilding companies to better compete with the likes of Japan and South Korea, and an interview with **Kriengsak Chareonwongsak,** Thai politician and founder of the first future studies research institute in Southeast Asia, explores China's growing role in ASEAN and what we can expect to see in what experts have dubbed "the Asian century."

This issue also brings you other great interviews, including a conversation with **Terrence J. Sejnowski**, a pioneer in computational neuroscience. He explains how machine learning has already fundamentally transformed the nature of human life (page **16**). **Reid Hoffman**, the co-founder of LinkedIn, looks at how companies can "blitzscale"—achieving scale in an incredibly short period of time (page **40**). And **Joe Schott,** President and General Manager of the "happiest place on Earth"—Shanghai Disney Resort—explains how Disney has adapted to the Chinese market (page **23**).

In observing China's relationships with the world at large, certain industry-specific developments are shaping the way that the world views China, with **"The Future is Now"** (page **43**) providing a deeper understanding of how China has sprinted ahead in the international race to roll out 5G telecommunications. With the United States stepping back from the world's fight for a more sustainable future, our cover story **"Green China"** (page **7**) looks at how the Middle Kingdom has quickly transformed its landscape from "airpocalyptic" to wholesome and ask—is China on the verge of becoming a world leader in green energy?

"Biopharma Boom" (page **19**) discusses how recent developments in China's pharma sector have captured international attention, with the biopharma industry now being one of the largest in the world. Another industry where China is set to make a mark is sportswear, with homegrown brand Anta aiming to become the next Nike. Read more in **"Going Global"** (page **51**).

There are also domestic challenges and opportunities to be considered. **"A Balancing Act"** (page **27**) explores how China's economy today is balancing domestic consumption with exports and looks at the future of the "factory of the world" aspect. Rising unemployment and a possible demographic crisis are problems Beijing has been facing. **"Jobless & Picky"** (page **11**) provides a deeper look into youth unemployment and why many young Chinese people are opting not to settle for just any job. The Snapshot (page **66**), in addition, provides a macro perspective on the country's massive employment market and the changes that have taken place over the last decade.

Finally, there are now more pet dogs and cats in China than ever before. **"The Power of Pets"** (page **62**) looks at the reasons why pampered pooches have suddenly become such a common sight on the streets of China's biggest cities.

As always, this issue of CKGSB Knowledge presents plenty to think about and discuss. If you have any comments or opinions to contribute, we would love to hear from you (lzhou@ckgsb.edu.cn or ckgsb.knowledge@ckgsb.edu.cn).

Yours Sincerely,

Zhou Li
Assistant Dean, CKGSB
Editor-in-Chief, *CKGSB Knowledge*

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

GREEN CHINA

China is quickly cleaning up its environment and is now on the verge of becoming a world leader in green energy—but it is also the world leader in burning coal

By Colin Peebles Christensen

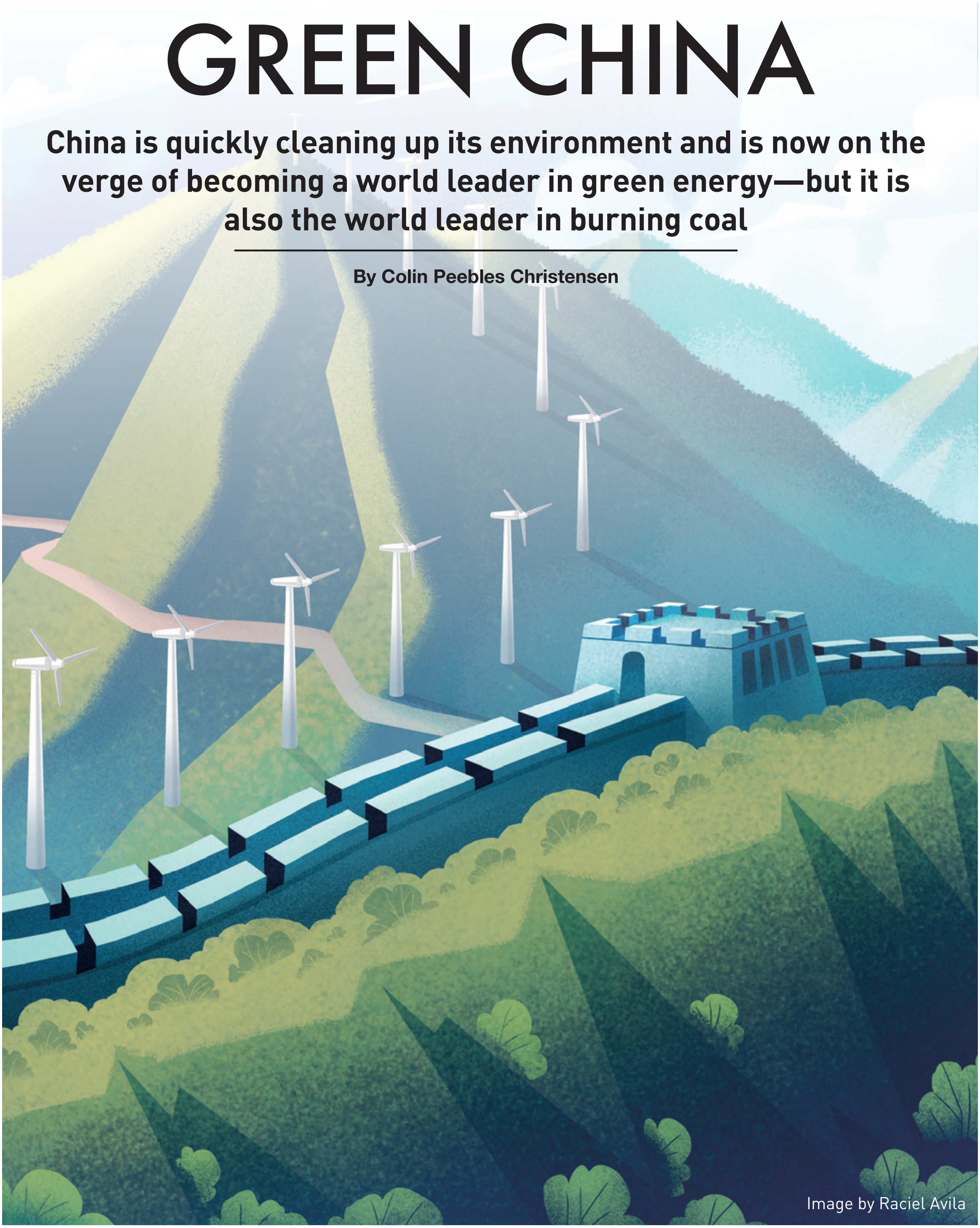


Image by Raciel Avila

For years, China topped the world's worst environmental rankings, but it is now leading the way towards a greener and more sustainable future

In the winter of 2013, most of northern and eastern China was blanketed in a deadly smog, with Beijing's Air Quality Index (AQI) reaching as high as 993 in mid-January of that year. New York around the same time had an AQI of 19. Slow moving air streams carrying toxic industrial discharge blackened landscapes and choked residents in the biggest cities. It was a pollution event so bad that it was dubbed the "Airpocalypse."

Since then, China's leaders have been on a cleanup mission, introducing initiatives to improve air, soil and water quality, incentivizing the use of green technology, investing heavily in renewable energy and introducing green financial systems such as the world's largest carbon trading scheme. In terms of air pollution in particular, the effect has been remarkable. The skies cities like Beijing and Hangzhou have shed much of their grayscale.

As the United States under President Trump seems to retreat from the global climate battle, China's leader Xi Jinping has instead doubled down on China's commitment to the Paris Agreement emission targets. Xi promised, in a joint statement with France in 2019, to strengthen China's environmental commitment and global governance. So, is China ready to take on the role of global environmental leadership?

Green reversal

For years, China topped the world's worst environmental rankings with pollution being blamed for causing 1.2 million premature deaths in 2010, according to the 2010 Global Burden of Disease Study, published by *The Lancet* a British medical journal.

Around 500 million people lacked safe drinking water in 2007, and only 1% of the country's 560 million city dwellers at the time breathed air that was safe by European Union standards. But since launching its "war on pollution" in 2014, the government has successfully re-routed the country onto a cleaner path.

Between 2013 and 2017, average concentrations of pollution particle matter PM2.5 dropped by 33% in 74 cities nationwide—improving health conditions and pulling cities like Beijing lower on the world's most polluted lists. A global total of $288 billion was invested into renewable energy in 2018, with China leading investment worldwide for the seventh successive year, spending $91.2 billion, compared to $48.5 billion in the US.

"In 2017, China invested more in renewable energy than the next three global investors put together," says Barbara Finamore, founder of NRDC's China Program and author of *Will China Save the Planet?* Those are the EU, the United States and Japan. "Even with a cut in subsidies, China invested twice as much in renewable energy than the US."

From a low start, China has created the largest solar program in the world, with one out of every three of the world's solar energy panels now located in the country. Gargantuan solar parks such as that in Tengger Desert in Ningxia, the world's largest, helped China churn out a whopping 130 gigawatts of solar-powered electricity last year. China surpassed its 2020 solar panel targets in 2017, three years ahead of schedule, and is predicted to also overshoot its end-of-decade targets for wind energy.

"China is the global leader in installed capacity and annual generation of renewables," says Yvonne Yujing Liu, an associate at Bloomberg New Energy Finance.

Green technology and green finance have also undergone a rapid evolution, starting with a push into electric vehicles in 2013 and the launch of green bonds—corporate bonds raising money specifically for environmental projects—and green insurance in 2016.

In addition, China has created one of the world's most ambitious afforestation campaigns, with an 80% woodland expansion seen over the past four decades. Around 7.1 million hectares of trees were added last year, and the government is predicting total forest coverage of 26% by 2035.

Efforts to improve the condition of land and water sources have made strides too, though the results are more mixed. "Several years ago, water [pollution] could still be a very serious problem in rural areas," says Chen Lu, a Zhejiang resident and project coordinator for a rural environmental nongovernmental organization. "But now, because of measures implemented by the provincial levels, the water is improving quite rapidly and significantly."

China's overall water quality improved in 2018, with 70% of groundwater samples taken from around the country deemed fit for human use, up from 67.9%, the environment ministry said. Rune Svarverud, a professor of Chinese Studies at the University of Oslo focusing on environmental pollution, notes the remarkable turnaround from the multicolored, chemically-stained rivers of the 1980s and 1990s. But, he says, it is the easily cleaned-up pollution that has been addressed. "Now it's a lot harder." That is particularly evident in the widespread pollution of soil. But new targets aim to make 90% of contaminated farmland safe by the end of 2020.

A climate paradox

The country's green advancements are clear, but ironically, China is also the leader in the burning of coal, consuming around half of all the coal used globally every year. Between 2000 and 2018, its annual carbon emissions nearly tripled, and it now accounts for about 30% of the world's total, according to AP News. The sheer size of China's energy demands has made the switch from coal to renewable energy difficult to balance out.

Use of coal peaked in 2013 after decades of double-digit growth, and then decreased for three years—thereby cutting global CO2 emissions. Since 2017, however, coal usage has risen again. Coal as a share of China's energy mix fell to 59% in 2018, but overall consumption still grew 1%.

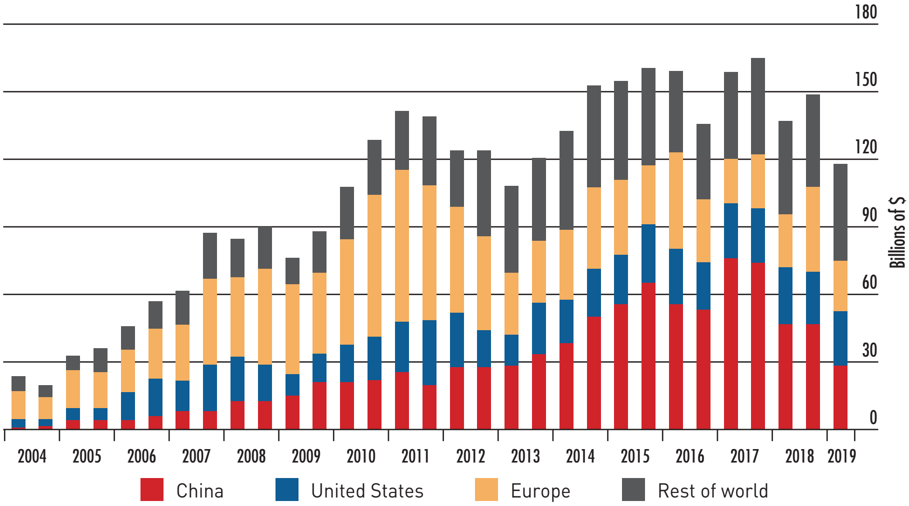
"We are witnessing many contradictions in China's energy development," says Kevin Tu, a Beijing-based fellow with the Center on Global Energy Policy at Columbia University. "It's the largest coal market and the largest clean energy market in the world."

China's slowing economy, now with a growth rate of around 6%, will inevitably further hinder the transition to greener energy sources. There will be less money to invest in the development and expansion of renewable energy sources, and policymakers are doubling down on support for coal and other heavy industries—the traditional backbones of the energy system and economy.

Recent media reports and satellite images also indicate that China is building, or planning to build, new coal power plants with a total capacity of 148 gigawatts—nearly equal to the entire coal-power capacity of the European Union—and due to come online within the next few years, according to an analysis by Global Energy Monitor, a San Francisco-based nonprofit.

The growth of the electric vehicle market has made a big splash, with China currently accounting for 45% of all electric cars on the planet and an incredible 98% market share for electric buses, according to Finamore. Homegrown automakers such as BYD and Nio have also spread clean energy transport abroad. BYD has so far exported 50,000 electric buses worldwide and has set up assembly plants in Brazil, Netherlands and the US. China also leads in electric charging infrastructure and battery production, which has brought the price for batteries down by around 85% since 2010. The country's huge domestic market provides strong support for new energy vehicles.

POWERING UP | China leads the world in clean energy investment



Source: *The Economist*

Government efficiency

Since 2014, the state-led cleanup has been swift and China's centralized governing structure—far less hamstrung than the more diverse structures found in many other countries—is often given credit for much of the success. Even in China, public support for government policies is not something that can be ignored, but "decision-making processes at a national level are clearly simpler," says Svarverud.

Over the last two decades, China has enacted a large amount of legislation on issues ranging from radioactive pollution to desertification, with many of the new laws going from concept to implementation in record time. These new policies, such as those that serve out severe punishments for companies whose actions do not align with the nation's new green ideals, have changed the environmental landscape of China completely.

Zhang Kai, Climate and Energy Project Manager at Greenpeace East Asia, says the Environmental Protection Law from 2015, for example, has been the most important environmental policy of the last decade, largely for increasing the financial pain for polluters compared to the 1989

> **Even with a cut in subsidies, China invested twice as much in renewable energy than the US**
>
> Barbara Finamore
> Author of *Will China Save the Planet?*

law. "As there is no maximum limit for the fine, environmental authorities can now pose an existential threat to noncompliant enterprises."

Domestic speed bumps

But China still faces a string of environmental challenges of which coal-reliance is probably the main one. "China is still overwhelmingly dependent on fossil fuels, for almost 85% of total primary energy consumption," says Michal Meidan, director of the China Energy Programme at the Oxford Institute for Energy Studies.

Moreover, environmental efforts enjoy little public participation. In the city of Guilin, 16-year old Howey Ou conducted a rare climate "strike" in May, and was praised by environmental activist Greta Thunberg as a "hero." But the general public in China remains passive. Top-down environmental governance and a lack of alternative voices in the media landscape may partly explain why. Despite international support, Ou's efforts soon ended when she was told by the authorities that she did not have the necessary permits.

In general, local residents view environmental issues from a local rather than a global perspective—what Svarverud calls a "not-in-my-backyard" mentality—and cleanup efforts sometimes meet with objections. Protests and lawsuits have blocked waste-incineration plants in a number of locations across the country. Local governments also seek to duck Beijing's eco-directives when they hurt their interests, often because they impact on tax revenues or limit the ability of local governments to hit growth targets. The central government can push large-scale plans forward, as they are not on the front line when it comes to public dissent, but local governments are significantly closer to on-the-ground public opinion.

"Local governments always have to make difficult decisions between economic, environmental and social trade-offs," says Genia Kostka professor of Chinese Politics at the Freie Universität Berlin.

Kostka. "Over the past years, environmental concerns have gained in priority. However, at the same time China's economy is growing more slowly, which makes it hard to enforce all environmental standards."

Beijing is reforming incentive systems by scrapping economic targets in certain "green zones," Kostka says, "But most localities continue to have the trade-off, and economic incentives still often trump others. Partly this is because local governments depend on tax revenue to pay for social services and goods. So, the economy comes first."

Still on the whole, environmentalism is on the rise in Chinese society. Taoism, a philosophy native to China which contains profound lessons about ecology, appears to be making something of a comeback, and has been publicly name-checked by Chinese leaders to back up Chinese eco thought.

Business opportunities

China's efforts to clean up deadly smog over the past six years has also had another positive side-effect, what Finamore calls the "largest market opportunity of the 21st century." Without China, Finamore believes the solar and wind power industries and electric vehicles would be "a tiny, very expensive and niche market."

Instead, the country's large-scale investment in solar panels has brought power costs down by 94% in the last decade. "In many parts of the world, it's now cheaper to build a new wind or solar plant than to continue running existing coal plants," says Finamore. Wind and solar are starting to beat coal on price. This has been good news not only for a business-savvy Chinese population, but for the world in general.

The International Energy Agency predicts that the offshore wind market will reach a $1 trillion valuation by 2040 and Wood Mackenzie, an energy research and consultancy, foresees solar and wind outcompeting coal-fired electricity by 2026.

With China's environment in better shape, and the US retreating from climate cooperation, the question is whether China will also take on a larger role in international climate diplomacy.

"Even though an increasing number of smaller and developing countries are joining the green campaign and growing very fast, I don't expect any other single country would be able to take away the leading role from China," says Liu.

China might have to make further progress on the cleanup at home before directing its attention globally, Svarverud reckons. But with the US unwilling and the EU currently incapable of climate leadership, he says it might be useful for China to step in.

"I have confidence in this," says Lubin Wang, a 23-year-old resident of the Hangzhou. "Because many policies have already gained positive results. And I remember the G-20 summit in 2016, [when] they told us to shut down all factories near Hangzhou, the sky was very clean and blue. So, our government has the potential and also the capacity to combat environmental issues."

JOBLESS & PICKY

Youth unemployment rates are rising, but everything is not as it seems

By Mable-Ann Chang

Image by Raciel Avila

Youth unemployment is on the rise globally, but there are factors which make the problem in China unique

With the economy slowing, robots and artificial intelligence (AI) expanding their roles and competition growing for good positions, the reality of life after graduation is stressing out Chinese students even more than their exams.

In 2019, a record number of graduates entered the labor market—8.34 million—according to the state-run *People's Daily*, up from 8.2 million in 2018 and significantly higher than the 6.1 million in 2009. Added to that is the slowing growth in the economy, now down to around 6% a year, and a much more cautious approach by companies to taking on new staff.

"I feel quite worried about finding a job after I graduate," Suyang Jin, a broadcasting student at Nanjing University, told *CKGSB Knowledge*. "Many of my classmates feel the same way. Companies are often not willing to offer recent university graduates opportunities, as they're usually looking for people with work experience. I also don't think there are enough jobs for everyone, because China has such a huge population and there are only a limited number of jobs available."

Zhenghong Zhang, another student approached by *CKGSB Knowledge*, agrees. "Finding a job now is difficult." The 21-year-old student at Southeast University is planning to delay her entry into the job market by pursuing a master's degree.

"It's because of the oversupply of job seekers. The population is large, and the number of graduates is increasing each year, but the number of jobs has remained limited. The pressure to compete is therefore also increasing each year," she says.

The structure

The official unemployment rate, updated quarterly, stood at 3.61% in September 2019, little changed for the past two decades. That number sounds good, especially given China's huge population, but the true unemployment rate is difficult to peg, with different agencies reporting varying figures over the years.

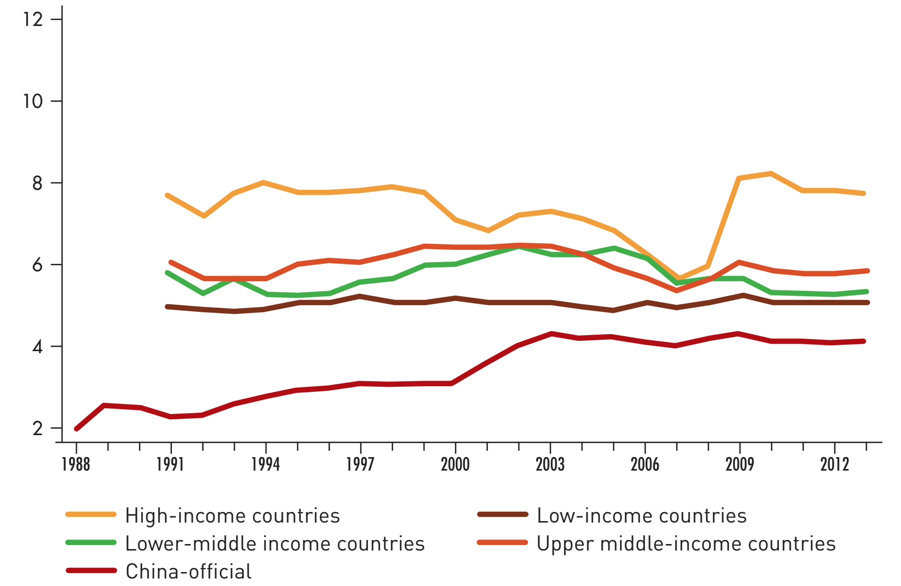
"The statistical agencies are not good at tracking the unemployment rate," says Andrew Polk, co-founder of Trivium China, a Beijing-based research consultancy. "It's partly because it is such a sensitive issue. If unemployment is on the rise, China doesn't want any easily observable signals. It's also the most populous country in the world and is still in a way underdeveloped and changing rapidly, so it's just really hard to measure unemployment."

Francis Bassolino, managing partner of

New university graduates in the eastern province of Jiangxi attending a job fair held by the Education Sector Employment Guidance Center.

UNEMPLOYMENT RATES

China's official unemployment rate has been consistently low



Source: *Financial Times*

Alaris Consulting, also raises the question of how to define unemployment in China. "The unemployment rate is really driven by the State's definition of employment," he says. "The connection to reality is tenuous."

"If someone has a job that could be done in one hour but they're taking eight hours to do it, is that full employment? I've seen as many as six people doing the job that a single person should be doing, and I wonder about the long-term viability of that. I don't believe that the unemployment figures are an accurate reflection of true unemployment in society, which is probably closer to 20% if you use a rational economic metric to calculate it."

Employment and unemployment rates for graduates are even harder to pin down. The China Institute for Employment Research (CIER) index, reported that in 2018 there were 1.41 positions available for each graduate, down from 1.54 in 2017. But a survey of more than 88,000 Chinese graduates conducted in the early months of 2019 by the online job platform Zhaopin, found that nearly nine in 10 thought it was difficult to find a job.

The speed with which the economy has changed in recent years contributes to both the unemployment rate and the lack of clarity around the issue. "You see that with young people job-hopping quite frequently, which ultimately contributes to a high level of structural unemployment," says Polk. "It is common for young people to jump in and out of the workforce and to not necessarily be sitting for months looking for a job."

The so-called "gig economy"—short-term freelance work with no full-time employment benefits and security—has become a significant factor in China's graduate job market, with both positive and negative implications.

"The rise of the gig economy has contributed toward a higher level of employment," adds Polk. "It also relieves some of the unemployment stress that youth may be feeling, because they know that they can take up a quick job in the gig economy to make some money to get by without having to tie themselves down to anything long-term."

Official reports and anecdotal evidence point to the existence of lots of jobs being available in China's dynamic economy. The state-run *China Daily* reporting 7.52 million new jobs being generated in urban areas in the first six months of 2017 alone. But Chinese graduates are facing a much tougher environment compared to that of their peers just a few years ago in terms of solid full-time jobs with good career potential.

"There are many jobs at the lower rungs of the unemployment ladder for those with mediocre to non-existent degrees, but longer-term employment prospects are limited, particularly when you're looking for jobs that offer upward mobility," says Bassolino. "Youth unemployment in cities is really a choice because there are plenty of low-skilled jobs around. But I don't think it's appreciated how grim the employment world is going to look for the young people of today after they're 45 years old."

A unique aspect is that unemployment is more prevalent amongst highly educated youth in China than the overall population. Data from the official China Household Finance Survey shows the unemployment rate of university educated youth to be 16.4%, while those with a primary school education is only 4.2%. In other words, the higher the level of education received, the higher the probability of not finding employment or accepting a job. This is in direct contrast with trends in the UK and the US, where higher education is associated with better job prospects.

"There are simply many more university students graduating each year than there are white-collar jobs," says Polk. "I think it's more of a structural issue than it is of people having overly lofty career expectations. Literally not enough jobs exist in the right parts of the economy."

But the graduate unemployment problem is also tempered by complex social factors.

A crisis in the making

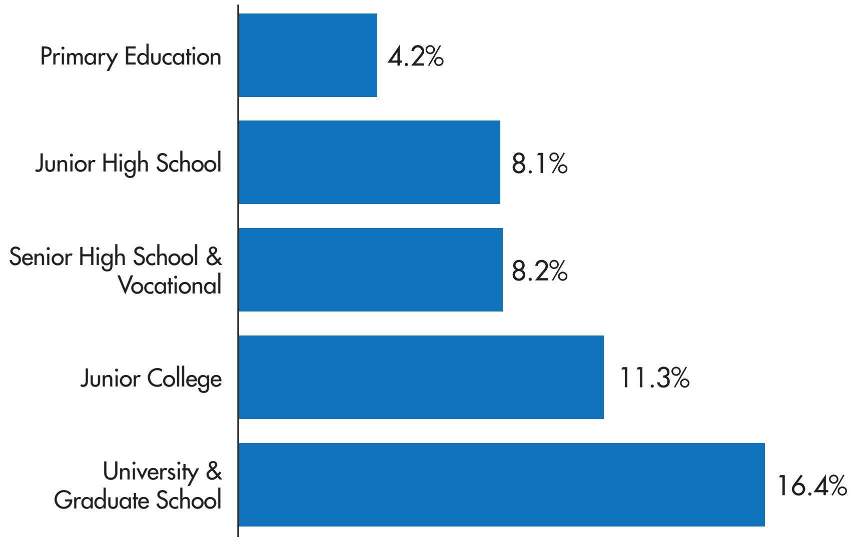
With a rapidly aging society and a total workforce that is starting to shrink, China is facing a demographic crisis. In 2018, the old-age dependency ratio, which is the ratio of people 65 and older to people of working age, grew to 16.8%, up from 11.3% in 2008, according to the National Bureau of Statistics. That means that every 100 people of working age are now supporting around 17 retirees, compared to just 11 a decade ago.

The root cause of the demographic

EDUCATION AS A FACTOR

Unlike in other countries, having a university degree in China actually makes it more difficult to find a job

Unemployment rates for the 21-25 age group, broken down by education level



Source: CNBC

crisis is the one-child policy—the official program initiated in the late 1970s by the central government to limit the number of children a family could have. Large parts of the policy were formally relaxed in 2016, but most people in the labor market are only children and bear the weight of caring for parents, grandparents and children alone. On the other hand, only children can look forward to becoming the sole recipients of the assets of their forebears.

"The one-child policy was a double-edged sword," says Bassolino. "Many young people are set to inherit enormous wealth, mostly in property, especially in first-tier cities and provincial capitals, which allows them not to have to work. But for others, it's created an undue burden in how they will be responsible for caring for many family members on a single stream of income."

An automated future

As China develops and upscales its economy, an increasing amount of AI and robotics are being introduced into business activity, which is pushing down the need for human hires in all areas. Accounting firm PricewaterhouseCoopers, estimates that AI and related technologies, such as autonomous vehicles, drones and robots could displace around 26% of existing jobs over the next two decades, rather higher than their 20% estimate for the UK.

China already has the most manufacturing robots installed of any country in the world, and a third of the global total. That proportion is set to rise in the coming years. "The development of robots and AI will definitely affect the number of jobs available for young people," says Jin.

On the other hand, PwC's report says the automation trend could also create more additional jobs by boosting productivity, real income and spending levels. Their estimate is that the net impact could be a boost to employment of around 12%, equivalent to around 90 million additional jobs over the next two decades.

"Part of the reason you have this push into AI and robotics by the government is because they know they have an aging and shrinking workforce," says Polk. "And they have no choice but to begin replacing people with technology unless they change their immigration policy. My guess is that China will increasingly turn into a more services-oriented economy and it will create more white-collar jobs, while blue-collar jobs will increasingly be done through automation."

The growth of AI and robots raises the question of whether youth are learning the right skills for the future world of employment.

"In many ways, China is ahead of the game," says Terence Tse, associate professor of finance at the ESCP Europe Business School's London campus. "You can see it in how they're emphasizing new fields of study such as teaching kids how to code. Of course, not everyone becomes a coder or engineer, but it sets them on the path of understanding what coding and algorithms can and cannot do."

Bassolino, however, disagrees: "Young people will struggle in the job market in the future because the education they're receiving is not preparing them to add value to society. But overall, AI and robots haven't affected employment yet, as they're often used in sectors such as manufacturing where young people don't want to work anyway. Robots replacing people in the service sector is still a long way off."

Social factors

The family is another element of the equation. Young people can generally rely upon a high level of support, which means that they don't necessarily have to take a less-attractive, lower-paying job, but can stay at home until the job market changes and the right job emerges.

"In the West, most young people do not expect their parents to take care of them after they graduate, and so there is a greater sense of urgency to look for a job," says Tse. "I also believe that the level of independence of kids in the West is higher than in China, meaning that they are typically willing to actually venture out further and find their own path."

Polk has a similar view. "The family structure in China is very close here, so even if families aren't particularly wealthy, there is more of a family safety net here than

Peking University graduates gather for a group photo on campus

in other countries." Parents always want to provide for their children, he explains, but that comes with the expectation that, when that child becomes independent and the parents get older, care goes in reverse, with the child becoming responsible for taking care of their parents.

The result is a surprising level of complacency among many young people, which is reflective of the enormous gains that Chinese society has seen over the past few decades. And many are happy to spend time online and disengage from the formal job market.

"If they're not working, the boys are playing video games and the girls are sending inane gossip back and forth," says Bassolino. "They are wasting time. There is some productivity in how they create small stores online, which do have the potential to grow, but because it's such an informal economy, it's difficult to know what it is worth."

While there is no solution in sight to China's fundamental problem of slowing economic growth and growing numbers of graduates, as long as the family system remains supportive, the country will dodge a bullet. And the likelihood is that the importance of the family will remain a solid feature of China's social landscape well into the future.

"Even if a 'child' is now 30 years-old, in the eyes of parents, they are still a baby," says Tse. "For kids, there is almost always the backup plan of resorting to your parents for help when they run into problems."

> **There are simply many more university students graduating each year than there are white-collar jobs**
>
> Andrew Polk
> Co-founder
> Trivium China

The Future of Machine Learning

Terrence J. Sejnowski, a pioneer in computational neuroscience explains how machine learning has already fundamentally transformed the nature of human life

AI and the "deep learning" revolution have brought us autonomous vehicles, greatly improved online translation, fluent conversations with bots such as Siri and Alexa, and enormous profits from automated trading on global stock exchanges. Deep learning networks can even play poker better than the world's best professional players.

Terrence J. Sejnowski is a professor at the Salk Institute for Biological Studies in San Diego, California, where he directs the Computational Neurobiology Laboratory, and director of the Crick-Jacobs Center for theoretical and computational biology. His research in neural networks and computational neuroscience played an important role in the founding of deep learning.

Sejnowski is the author of *The Deep Learning Revolution*, and with Barbara Oakley, he also created and taught *Learning How to Learn: Powerful mental tools to help you master tough subjects*, the world's most popular online course on the subject.

Q. Your book discusses applications of deep learning, from self-driving cars to trading, but which parts of the economy will be most impacted and in what kind of timescale?

A. Every sector of the economy is going to be affected in much the same way that the Industrial Revolution enhanced physical power through the invention of the steam engine, which led to the creation of factories and electricity, and eventually transformed all of civilization. We're now living in a world where every aspect of commerce, entertainment and social interactions has been affected by those developments. AI is a similar transformative technology.

Which impacts are going to be the most important, no one knows. It's too difficult to predict. This can be illustrated by the development of the internet. When it was introduced in 1995, nobody could have imagined how it would affect every aspect of our life. The internet has transformed entertainment, shopping, social media and even politics. These technologies have unimagined consequences.

Q. To what extent is it going to fundamentally change the nature of human life?

A. Any new technology can be used for good and bad. It's something that can be seen with the internet. When it first came out, everybody was enthusiastic about how it was going to allow information to be freely available and how we could now talk to people in different countries. That was the good part, but the bad has also become clear with people now able to spread misinformation quickly. It can be very hard for people to know what's true. This reflects on human beings, as it's human beings doing the damage, and not the technology.

All these technologies take decades to go from proof of principle to something widely disseminated and scaled up. Scaling up is the most difficult part because it requires a tremendous amount of infrastructure. When automobiles were invented, horses still used in the street. Streets were made of dirt and mud, but once cars were common, streets had to be paved. Decades of work went into creating roads that cars could drive on. Building a car was just the first step, but to create infrastructure that a car can use, ensure its safety and to make enough cars for people is a hundred years' worth of work. It was a process that couldn't be sped up, as scaling is constrained by the physical reality of how much must be done and created.

Part of the reason why it feels as if AI has expanded so quickly is that a lot of the infrastructure was already in place, which in this case would be cloud computing. Edge devices like cell phones take advantage of that because you're communicating directly to the cloud. AI is a computation-intensive technology. In order to be able to take what we have now and expand it so that it has more capabilities means that we have to expand the cloud. That's the equivalent of making superhighways in the air that have much more bandwidth and a new class of chips. Again, that's a long process.

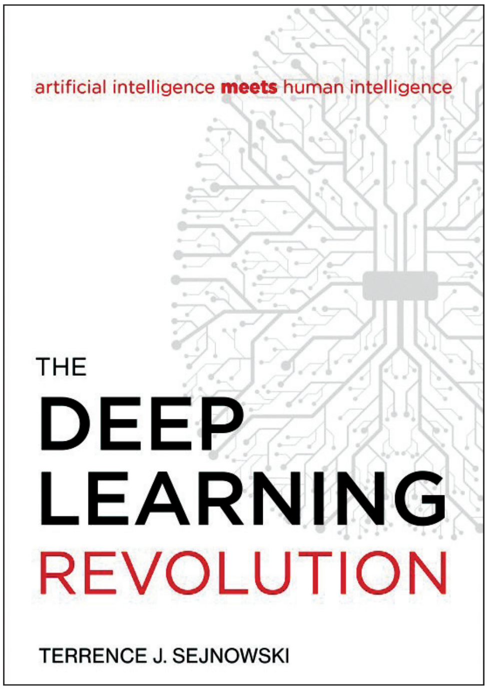
Q. How complex is the human brain compared to the deep learning machines?

A. If you look at the biggest deep learning networks, they have hundreds of millions of weights and people are beginning to design ones that have a billion. Deep learning is a simple model of the cerebral cortex, which is a thin layer that's around five millimeters thick on the surface of your brain. If you look at just a single cubic millimeter of cortex, it contains a billion synapses. So the biggest deep learning network is just a tiny piece of your brain.

That shows you how far away we are from scaling up. We still have another factor of a million before we get up to the computational complexity of the human brain, and it may be even worse because we are using simple processing units while nature uses complex neurons. There is additional processing going on within each neuron that is adding computational power to the whole network. Neuroscience has made a lot of progress in understanding what those extra potentially useful computational principles are.

How quickly and in what way do you see the combining of technology and biology? And what needs to be done to make it happen?

A. It's something that's already happening, but we're limited by two things. First, by what we know about the brain, and second, by the computational power available. As I mentioned, the infrastructure still needs to be put in place, which is something that is improving quickly. There are about a hundred startup companies currently designing new machine learning chips. Google already has a TPU tensor processing unit that has improved things by a factor of more than 10-50 in efficiency. An entirely new generation of machine learning chips is being developed and it's going to make things even more efficient. That's billions of dollars of infrastructure development being built—everybody's come to realize that this is a new type of chip worth investing in. It's going to be a huge market.



Q. What do you see as the appropriate role of government oversight and involvement in deep learning?

A. Traditionally, companies are shortsighted in terms of projects. They'll invest in a project where they can see the pay off in just a few years. That's where governments come in, when it's necessary to have a long-term goal that may take decades. A lot of government support that goes into basic research may not pay off for 50 years.

An example is cancer research. Back in the 1960s, Richard Nixon declared a war on cancer and pumped a lot of money into the NIH. What came out was a much deeper understanding of the problem. They were able to show that cancer is a genetic and heterogeneous disease. They could prove that a whole lot of different pathways lead to cancer in different parts of the body.

Fast-forward and here we are. There are several cancers that have been cured, such as Non-Hodgkin lymphoma. It took 50 years to go from proof of principle of what the underlying problem was to the point where we can actually design cures for these incredibly devastating diseases. The same is true for technology.

If you look at computers, they were invented in 1956 and it's taken 60 years to get to the point now where they are powerful enough to actually solve difficult problems. You have more computing power in your cellphone than supercomputers did back when I got my first job, which cost $100 million. That was the era where we did the pioneering work. We had these very slow computers, but they were fast enough so that we could do simulations and test algorithms and we managed to prove a principle. But it took 40 years to go from proof of principle to the point where it becomes practical.

Q. To what extent is deep learning being used for defense and security purposes?

A. I don't think anybody knows what the government is using it for. But I can assure you that they're very interested in the technology. Military applications would be ones that have to do with guided missiles and making smart bombs smarter. One of the interesting problems is that, when there is a war, humans are the ones on the front line. Now autonomous vehicles and airplanes are being created to collect data, but the problem is that they're controlled by humans on the ground. So, what they're probably working on is to put deep learning into airplanes so that it can start making its own decisions.

Q. Are there any differences in how companies in China and the US are thinking?

A. I don't believe there to be significant differences. All of the knowledge is out there in public because it's all been generated by academics. Even friends of mine at Google, like Jeff Hinton, they're allowed to publish their new work. In fact, none of the early algorithms were patented. And we did that purposely because we felt that this was not something we wanted to profit from personally. We thought that it was more important for other researchers to have access to the same insights and the results of the experiments that we did. It eventually paid off, because we created a community that shared knowledge and grew. I'm sure there are companies who are working on applications that are proprietary, but all the basic research is out in the open. And I think that's true in China too.

Q. Do you think there is a difference from a commercial perspective in how companies in China and the US think about deep learning or AI technology?

A. It is possible. Let's use the example of facial recognition. Apple has facial recognition on their phones, but it's not being used in public to track people like it is here in China. That's an example of a difference in the application of existing technology along with the issue of access to data. However, I think that both countries have large data sets. I was at a meeting where I gave a talk and someone from the audience was saying that they were having trouble getting financial data. It's having access to the data that makes a big difference. Some companies have more data than others and that gives them an advantage.

Q. Big Data can provide huge value in terms of social benefits, but to be successful there needs to be a significant gathering of personal data. What is your view on this moral dilemma?

A. I think privacy is a luxury; it's great if you can get it, but most people can't afford it. There was an interesting study with the question 'How much would you be willing to pay Google to be able to use their search engine?' being posed. It was interesting because most people aren't willing to pay anything for it because they're so used to getting it for free. They're basically saying that their privacy has no value whatsoever and I think that most people feel that way.

There are others that feel strongly about privacy and are willing to spend hundreds or thousands of dollars on protecting it because they can afford it, but a lot of people don't have the money to do so. It may be different in other cultures, as some might feel vulnerable and want to avoid giving away information, but for other cultures it's not a problem as everyone feels that it's not something that will hurt them. That's where the problem lies. Because this is all so recent, we don't know how it can hurt people. But we can already see a few problems, for example, with medical data. If it becomes widely available for deep learning, you can imagine that insurance companies will use the data to avoid insuring people who are predicted to have serious health problems.

There could be some new data set out there that nobody has yet thought of, and when it's accessed and applied to AI, it is going to have consequences for the future that we can't imagine. Look at how the internet created these incredible opportunities and problems that nobody thought of. What I'm more concerned about is the unknown of unknowns.

Q. The question is a cliché, but it's an important one: Will AI and robots end up controlling everything?

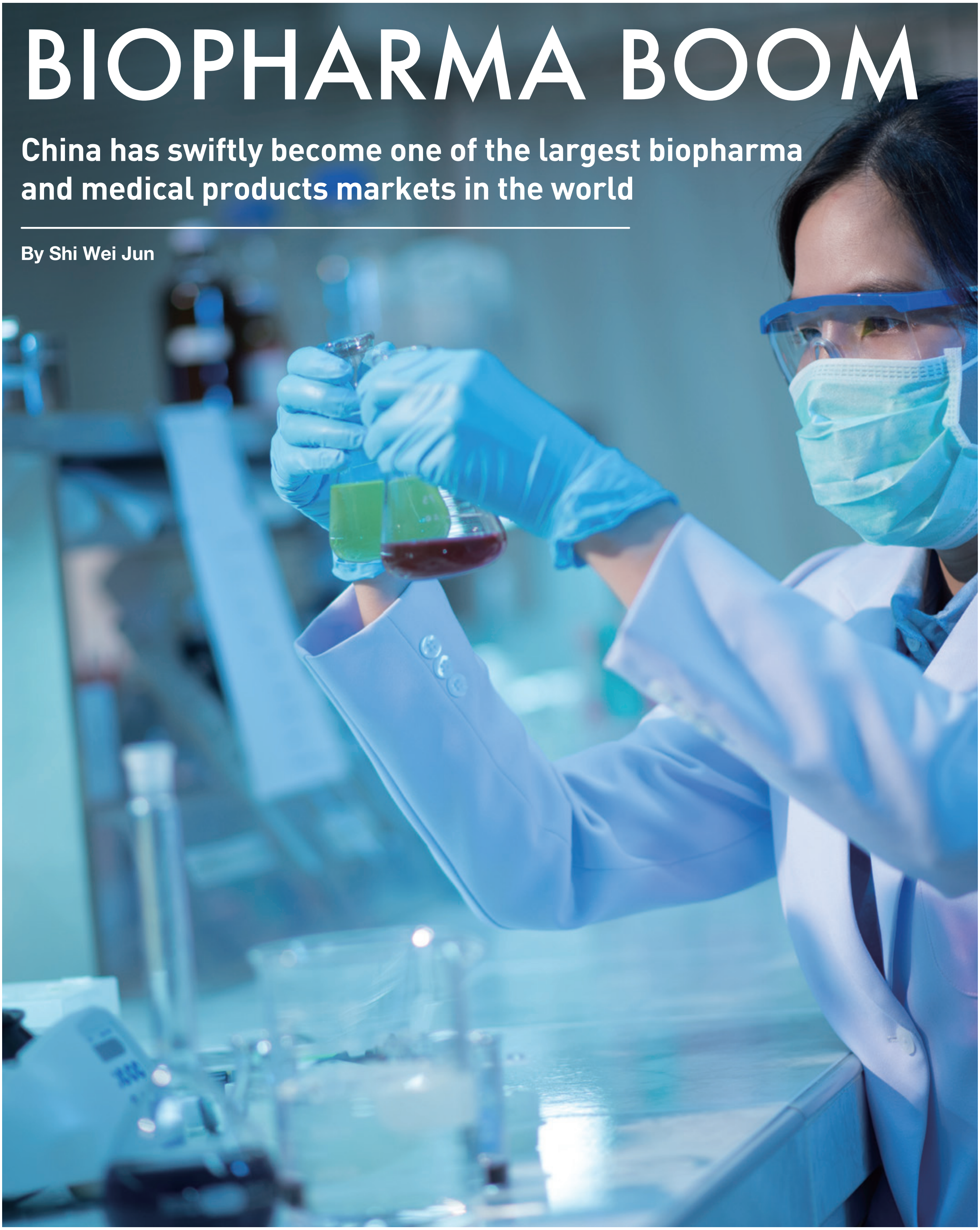
A. We have to put it into perspective. Humans created AI and robots, so we set the rules. If the robots get loose, it's our fault, and so I'm pretty sure we're going to be careful. It's going to take a lot longer to create robots than AI because the infrastructure for creating a body similar to ours is much more complex than the software that people are using to create deep learning networks. Even creating something that has the dexterity of a hand is so incredibly complex that we're nowhere near that.

I can't make a good prediction for when this would happen, but I'm pretty sure it's possible and I don't see any reason why it wouldn't happen in our lifetime. It's going to depend on computer power and we're still a million miles away from having the power of the human brain, so maybe it'll take another 40 years, who knows?

Q. How do people significantly younger than you approach and view AI compared to those in your generation?

A. They don't have to struggle the way we did. Everybody believes what is going on in AI right now. When you're working on something that nobody believes except you, it's a lot more difficult to make progress, because you're on your own.

They're also living in a time when there's a consensus about value in research and where money should be invested. That having been said, we still need visionaries. We still need young people who are willing to take risks. Most entrepreneurs fail, but the ones who make it have a massive influence. Young people are willing to put their careers on the line and that's what's going to propel the future.



BIOPHARMA BOOM

China has swiftly become one of the largest biopharma and medical products markets in the world

By Shi Wei Jun

China's biopharmaceutical market is bigger and more innovative than ever before. Will Chinese biopharma soon be able to rival the likes of American and European industry leaders?

Seaweed pairs well with sushi, but using marine algae to treat Alzheimer's disease? It turns out the ubiquitous marine organism and the degenerative brain condition seem to actually be an even better match than the well-known culinary one.

Green Valley Pharmaceuticals, a small firm based in Shanghai, drew global attention last November by announcing that its seaweed-based drug for treating Alzheimer's had won conditional approval from China's drug regulator, making it the first Alzheimer's drug to have received such approval globally since 2003. The commercial production and launch of the drug were set in motion at the end of 2019. Later the same month, Beijing-based BeiGene announced that the US Food and Drug Administration (FDA) had approved its revolutionary blood cancer drug, offering a Chinese cancer therapy to American patients for the first time.

The announcements highlighted the progress that China's promising biopharma industry is making, with a growing legion of firms hoping to take on the world's biggest pharmaceutical companies. But they face significant obstacles – the release of Green Valley's Alzheimer's drug Oligomannate generated industry skepticism because the drug's clinical trials were not published in full or subjected to peer review.

The biopharma field covers medicines and drug products manufactured within living organisms like bacteria, cells and yeast, and is a subset of drugs produced by a wide range of biological methods. Pharmaceutical drugs, meanwhile, also include chemical synthesis as well as biological means of production.

The rise of Chinese biopharma has major implications for health care both in China and the rest of the world. China is importing ever more new drugs, but homegrown innovators are also poised to start exporting drugs and therapies. Local heavyweights, including Jiangsu Hengrui Medicine and Zhejiang Hisun Pharmaceuticals, are breaking new ground, as China seeks to become a global leader in new medicines and life sciences.

Gaining strength

"China's biotech sector is having a moment," said Brad Loncar of Kansas-based Loncar Investments. "I really think what's going on there is just like what our biotech sector was in the '80s and '90s."

China's biopharma market was worth $130 billion in 2018, ranking it second only to the US, according to management consultancy McKinsey & Company. The sector is highly fragmented and encompasses close to 200 companies, according to Vicky Xia, Beijing-based senior project manager at industry consultancy BioPlan Associates. The most innovative firms are clustered in the Yangtze River Delta near Shanghai, while some have emerged in Beijing as well. Among the biggest players are Fosun Pharma, Sinopharm Group and Wuxi Biologics, all of which are publicly listed in Hong Kong.

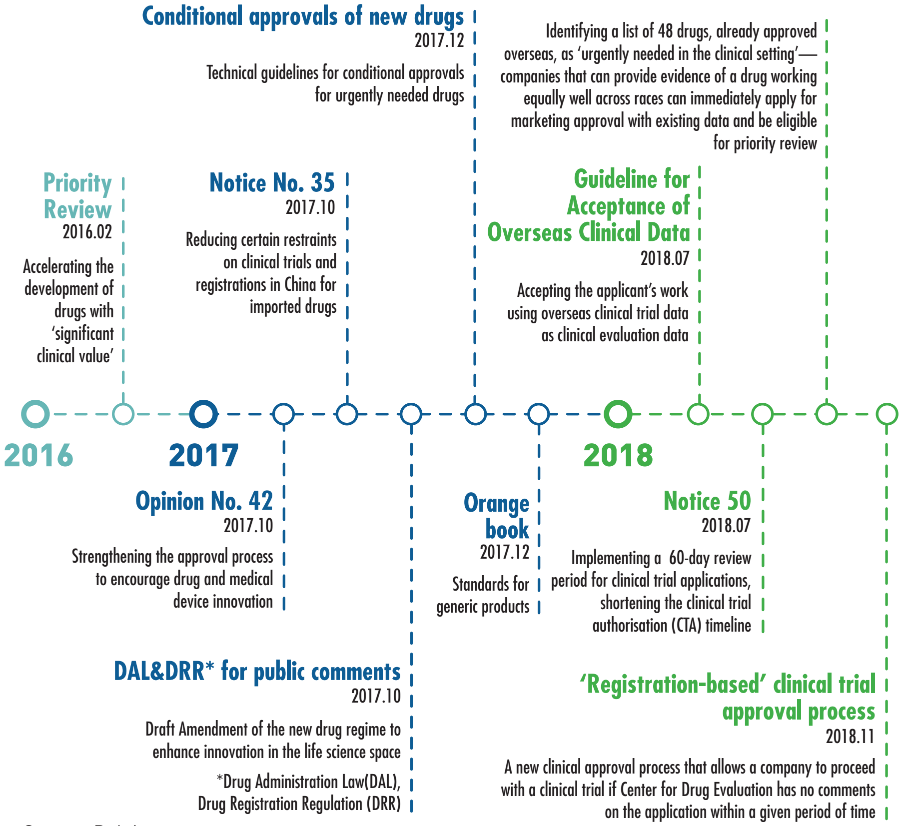
Virtually all drug development in China used to be generics—low-cost copies of brand-name drugs—but the government has been coaxing Chinese firms to adopt a stronger innovation mindset. Far from making copycat drugs, companies like BeiGene are conducting world-class science and developing cutting-edge drugs.

The goal of these Chinese biotech startups is to eventually rival the likes of Pfizer and Roche, but for now, the biopharma divisions of the Big Pharma companies based in Europe and the US still dwarf their Chinese counterparts. Pfizer's biopharma business reported revenues of $28.9 billion in the first nine months of 2019. By comparison, drug sales by Hebei province-based CSPC Pharmaceutical Group reached RMB 13.4 billion ($1.9 billion) in the same time period, while Sinopharm Group from Shanghai reported sales of RMB 8.84 billion in the first half of 2019.

While Chinese biopharma companies are relatively small, they are growing quickly. BeiGene, the inventor of the new blood cancer drug, saw total revenue nearly triple in the first nine months of 2019 from a year previously, to $371 million. Revenues for CSPC Pharmaceutical and Sinopharm also surged in the first six months by 28% and 23% respectively.

REGULATION TIMELINE

Changes in regulations have benefited biopharma



Source: Deloitte

Behind the boom

The growing business of these companies reflects momentum within the overall market. China's pharmaceutical spending is tipped to top $170 billion by 2023, although the growth rate of the overall market may be slowing. "The biopharma sector in China is expanding at a healthy growth rate, but it may not grow as rapidly as it has in the last decade," says Xia.

Chinese drug makers can look to expand by taking market share from foreign drugs, but with rates of diabetes and cancer rising sharply, China also has a clear need for more new low-cost therapies. Cancer—already the country's leading cause of death—is predicted to kill 3.04 million Chinese in 2020, an average of 8,300 every day, compared to 1,640 in the US. The high number of cancer victims explains why Chinese biotech companies have piled into oncology research.

A big factor behind China's biopharma boom is the government's work to foster more innovation in the manufacturing-intensive economy. "There's been a government push behind biotech," says Zhu Jielun, chief financial officer of I-Mab Biopharma, a Chinese "unicorn" developing drugs for cancer and autoimmune diseases. "The biotech industry has grown because the government wants to actively encourage it, so there are tax incentives, there are concessions. There are also some things that they can put in place to foster the development of this industry."

The government has actively supported innovation in drugs and medical devices, says Sun Jie, an associate professor at the Shanghai Academy of Social Sciences' Institute of Applied Economics. He says the National Medical Products Administration (NMPA)—the overhauled successor to China's FDA (CFDA)—and other departments have issued policies streamlining the approval process for drugs and strengthening intellectual property (IP) protection.

Another catalyst has been a major revamp of how drugs are procured for China's public hospitals. In November 2018, the government asked drug makers to submit bids to supply 31 commonly used generic drugs to public hospitals in 11 major cities. The winning drugs were covered by state health insurance, meaning Chinese citizens pay a lower cost thanks to government subsidies.

A year later, the government expanded the centralized bulk-buy program nationwide, adding 70 new drugs to the state insurance list, 52 of which were imports from major pharmaceutical companies such as Johnson & Johnson, Novartis and Roche. The remainder were from domestic drug makers, including Hengrui and Innovent Biologics. The average reduction in the cost of the 70 drugs was 61%, according to the regulator.

The introduction of competitive bidding by global and local firms successfully clamped down on runaway drug prices for Chinese patients and gave Chinese biopharma companies an opportunity to show that they are capable of drug discovery and development rivaling international Big Pharma players. In the 2018 pilot scheme, the government awarded contracts for 25 of the 31 most common generic drugs, and Chinese suppliers landed 23 of them.

Separately, the government has reformed its drug approval process, allowing new products created by multinationals into the country earlier, and sometimes even faster than in the United States. For instance, AstraZeneca's best-selling lung cancer drug, Tagrisso, was approved in March 2017, more than a year ahead of the US.

Another factor contributing to China's biopharma boom is how the government is cutting red tape and fast-tracking approvals for drugs that have already been greenlit by regulators in Europe, Japan or the US. This combination has helped to channel tens of billions of dollars of investment into biotech companies, further spurring innovation.

Then there is the so-called "silver tsunami" of China's aging baby boomers who will require access to affordable health care in the coming decades. "The huge population changes have brought a huge demand for medicine," says Sun.

China is ageing faster than other low- and middle-income countries, with the number of people aged 60 or above forecast to reach 487 million by 2050, or more than one-third of the population, according to the National Committee on Ageing. This daunting demographic shift threatens to overwhelm China's already overburdened public hospitals, making the hunt for new cost-effective treatments more urgent than ever before.

"China has a big market and the population is growing older," says Xia. "It is also urbanizing, which will create greater demand for drugs and health care services, so it wants to reduce the costs of health care. If domestic companies can launch an innovative drug, it's assumed that it will be less expensive than those developed by multinational companies. It is also likely that the Chinese government would favor drugs from domestic companies when expanding the national reimbursement drug list," says Xia.

Biopharma is getting a helping hand from another industry close to Beijing's heart—technology. Sun says the collection and analysis of medical big data from a population of 1.4 billion provides unique support for clinical decision-making. "Of course, this impacts on the use and security of data, which needs to be considered systematically," she cautions.

Team China

Investors have followed in the wake of government support for Chinese biotech. Venture capital and private equity investment in Chinese life sciences companies reached a record $17.3 billion in 2018, up by nearly 50% from 2017, while China healthcare-focused funds raised $42.8 billion in 2018, according to industry consultancy ChinaBio.

Capital markets are also an important source of funding for China's biopharma sector. In April 2018, the Stock Exchange of Hong Kong allowed listings by research-stage biotech companies yet to generate either revenue or profit, which gives early investors a route to exit and outside investors a way into startups at an early stage. Six Chinese biotechs listed in 2018 and raised a combined HK$24.8 billion ($3.18 billion).

But China's pharma firms face a range of challenges in catching up with the international giants in terms of consistently innovating high-quality drugs. There is a shortage of experienced management, a limited talent pool and patchy IP enforcement. A rapidly evolving regulatory environment that is still not transparent enough complicates things. And while China's companies are eager to expand drug sales overseas, they mostly lack the required market experience.

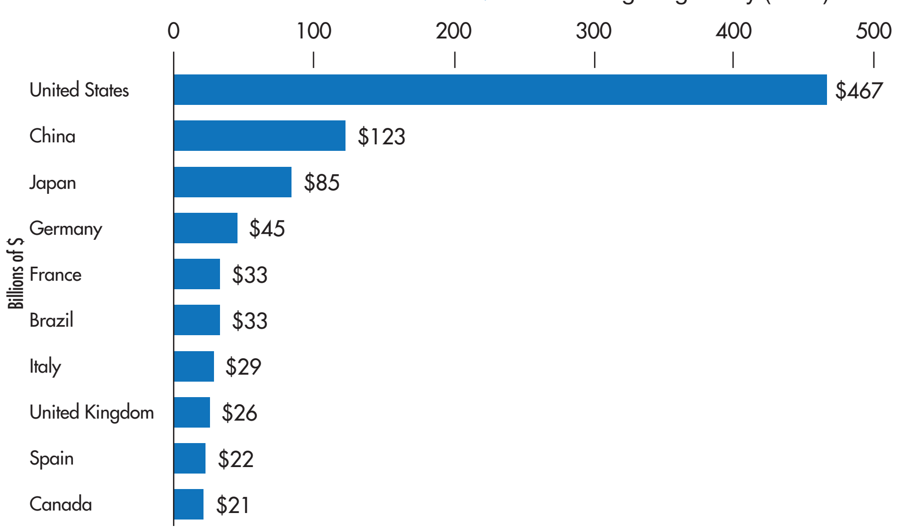
There are also longstanding challenges with data integrity and clinical trials management. "Forged data is a big issue," says Xia. "People would say that the data was not reliable and couldn't be reproduced. There were a lot of complaints about that."

In July 2015, the CFDA ordered pharma firms to double-check all data from China-based clinical trials, and most of the pending drug applications were withdrawn by the companies that had submitted them rather than face the test.

"Some of the data was not reliable or reproducible. That's why the domestic drug makers withdrew their applications," says Xia. "With the campaign reform going on, the data quality will improve. But when will it become fully reliable, that's a sensitive question."

The issue of data veracity is reflected overseas too. Western researchers reacted cautiously to the conditional approval of Green Valley's Alzheimer Oligomannate drug, given the lack of evidence to show the drug was safe and effective. The case also raised questions about the extent to which the Chinese authorities will be willing to give foreign scientists access to the big data that underpins the new drugs.

BIOPHARMA'S BIGGEST | China's biopharma market is the second-largest globally (2017)



Sources: LEK Consulting, Seeking Alpha

Looking to the future

Chinese biotechs currently export almost no drugs and therapies to the international market. This is likely to change, and as innovation expands and practices in China become more streamlined, innovative China-developed drugs will start to make inroads into foreign markets.

Industry insiders are optimistic about the outlook for Chinese biopharma and hopeful that its momentum can be sustained. "I think that with the current reforms, Chinese biopharma will maintain its healthy growth rate, with a more friendly approach to innovative drugs," says Xie. "We can see that the government is enacting reforms to establish an ecosystem that will make innovative drug development easier in China than it used to be."

Bringing the Magic

Joe Schott, President and General Manager of Shanghai Disney Resort discusses how the resort has adapted to resonate with Chinese consumers

Seeing 11 million visitors within its first year of opening in mid-2016, the world's newest Disney resort has had a warm reception in mainland China and is determined to continue bringing the "magic" into the lives of Chinese people. With an eighth themed land in the works and 2020 being the Year of the Mouse, according to the Chinese zodiac, Disney has no plans to slow down.

A 38-year veteran of The Walt Disney Company, Joe Schott has held various roles of progressive responsibility and worked in a number of Disney resort destinations across the globe. He began his career in Florida as a front-line Cast Member (Disney's term for employees) in operations at Walt Disney World. Although he spent most of his time based in Orlando, he has also worked outside the USA for nine of the last 12 years, most notably in China, France and Japan.

The Shanghai Disney Resort is one of the largest foreign invested projects ever undertaken in China and represents the largest foreign investment in the history of The Walt Disney Company. In this interview, Schott looks at how Chinese culture is reflected in Shanghai Disney Resort and at trends that the company has seen in its guests.

Q. How do operations at Shanghai Disney compare to other Disney resorts internationally?

A. First of all, we're humbled by our warm welcome to China and are fortunate enough to have not only received a warm reception from the government and our partners, but the guests who visit the resort as well.

We spent a lot of time in the market beforehand doing meaningful research on consumer trends, and what we focused on at the beginning was not only what consumers would learn about Disney, but also what would be uniquely Chinese. We always call our work authentically Disney, and distinctly Chinese. We're constantly looking to emphasize things that are familiar to people and to also to show respect to the home country that we're in.

What we've become known for is having an immersive experience where our guests can live out the stories that they've seen in Disney films. This is the place where they can see their dreams brought to life. So that means that we have to focus on innovation, particularly in the way that we deliver our final product to the Chinese consumer. But we've remained focused on things like the delivery of high-tech and innovative attractions such as TRON Lightcycle Power Run and Pirates of the Caribbean—Battle for the Sunken Treasure. There's a lot of context below the surface that people don't notice, but simply experience.

Q. What kind of trends are you seeing in terms of visitors at Shanghai Disney Resort? How do these trends compare to Disney resorts in other cities?

A. In general, the trends that we see are pretty similar to our other international parks around the world. Our guests all get excited about seeing the characters and the stories and that's really what the heart of it all is. People really resonate with the social messages conveyed in Disney movies, such as being courageous and thoughtful.

When you think about China in particular, guests here usually experience things through a multigenerational family, so you have to offer things that appeal to every member of the family. To give you an example, this park is the only park in the world that has a huge garden area in front of the castle, and that was designed for the older members of the family. Seeing beautiful scenery is one of the elements that is attractive for them and we believe that we've got to have something for everyone.

Disney has its own subway station in Shanghai

With China having the largest mobile phone market in the world and Chinese consumers being very mobile phone-centric, we really had to center most of our services on the mobile phone. We had a practice everywhere else in the world of distributing paper Fastpasses for example, but here we quickly made this an online service within our first year of operation. What was amazing was that there was an 80% adoption of the new process in one night when we launched our digital Fastpass service in fall 2017. It just shows how connected this audience is. We provide other features such as real-time queue times as well as recommendations via our mobile app too, which has been available to our guests since our opening day.

Chinese consumers also enjoy sharing things on social media. Things like photo opportunities are really important, so we intentionally create photogenic food items such as a dish with Mickey Mouse carved into the vegetables or even an egg that has a Mickey Mouse in the yolk. We therefore think about photo-worthy shots in just about everything we do.

Another thing that you need to know about Shanghai Disney is that guests arrive very early, especially in the summer. So we introduced early park entry and extended operating hours to allow our guests to make the absolute most out of their day.

Q. How has the economic downturn in China impacted Disney, if at all?

A. This is one of the most important markets that we have, and from our standpoint, coming to mainland China was incredibly important for the company in general. We leverage a lot of resources to make sure that we're thinking about the long-term view, as opposed to the short-term view, and when you're thinking long-term, you make different decisions to those you would make in the short term. We're building something to last forever and when we make a decision to invest at this level, we don't pin that decision on one time economically, we think long term about a market; we really take a long view. So, whether it's here or in other parts of the world, current or near-term economic circumstances typically don't cause much anxiety with us.

Q. What unexpected operational problems has Disney faced in Shanghai and what solutions have you found for them?

A. It's been an exciting three years since we opened. We have continued to learn in this market, trying to understand consumers' behavior and their habits. Feedback has been a key issue. For example during our initial research, we used the marketplace standard to determine the child admission discount—height—however it became clearer, especially over the last year, through feedback and engagement with government partners that it shouldn't be the only criteria used. We made the change this fall and it has been very well received by our guests and provides discounted park admission to more young guests. Over time we have become more proactive when it comes to making changes. That's just an example of one of the many modifications that we make based on the type of feedback that we routinely receive.

Q. How has the opening of various Chinese theme parks impacted business at Shanghai Disney?

A. We are very happy to see that the market in general has responded quickly to the theme park experience, creating consumer demand all over China. What sets us apart is that the Disney brand has a long legacy, and the quality of the products we put forward is part of our signature. The physical experience that guests have with their friends and family is what's most important to us. It's something we believe guests will see, and understand that we're unique in that respect.

Q. To what extent are augmented reality (AR) and virtual reality (VR) technologies going to play into the development of Disney resorts in the future?

A. Our Imagineers—that's what we call those that create new products for us—are always looking at new technologies to create three-dimensional experiences. We're not as focused on AR and VR because we're more focused on creating real life experiences that extend our stories. It's much more magical to walk into an actual world than it is to see a digital rendering of that place.

Another thing that we have to think about is that AR and VR experiences are really not as scalable to large groups of people as a three-dimensional experience could be. When you're on our Pirates of the Caribbean attraction, you get that sensory reaction to how amazing the environment is around you. You can't duplicate that with digital renderings.

Q. To what extent is Chinese culture reflected in the Shanghai Disney offering and what is the likely trend for the future? Will the Chinese element increase?

A. We're trying to integrate the incredibly unique and historical culture of China into our development and operations. The ways you can see that manifest itself on a routine basis is through the celebration of Chinese festivals, with the most well-known one being Lunar New Year. We try to include Chinese culture in our core entertainment, such as through the projections we cast on the Enchanted Storybook Castle during the daily nighttime spectacular. We really want this to be something unique for the people of Shanghai and for the people of China to enjoy. We routinely celebrate Chinese festivals because we want to create moments that are relevant for friends and families.

Q. "Mulan" is about to be released which is Disney's first China- centric movie. To what extent is "Mulan" visible at the Disney resort and what reaction does it get from visitors?

A. "Mulan" is loved all over the world as a unique and courageous character, and in that respect you're going to see a lot of focus placed on her no matter where you are in the world. With the movie coming, we get this opportunity to emphasize a truly Chinese heroine that has all these great qualities. We feature an entire parade float during our daily parade and she's also featured in Voyage to the Crystal Grotto, the unique boat experience exclusive to Shanghai Disneyland that features classic Disney storytelling. With the film coming out next year you can expect to see more new experiences in the park.

Q. To what extent is Disney representative of American culture? How does Disney view its role as the holder of so many iconic American characters and to what extent are these characters conceived and viewed by Disney as being international?

A. We consider our brand to be more international than representative of any one country. For example, stories like Cinderella and Beauty and the Beast come from Europe and are very distinct. We also have fictional places like Arendelle where our stories are based, so we try and be as diverse as we can. Disney stories and characters really resonate with the core values of Chinese people and are well received, that's why we emphasize them in our daily operations.

Q. You mentioned that you have characters that resonate with Chinese guests, which characters are the most popular?

A. All of our characters are extremely popular here at Shanghai Disney Resort. But there is one group of friends that resonate the most with our guests, and this is Duffy and Friends. The characters are extremely popular, specifically in this part of the world. You only see them on the same scale in Tokyo and to some extent in Hong Kong as well. These loveable friends are adored by Chinese guests because of their playful demeanors and cute appearances.

Elements of Chinese culture appear throughout the Shanghai Disney park

> **We always call our work authentically Disney, and distinctly Chinese**

Q. Could you tell us more about the expansion plan announced for Shanghai Disney Resort?

A. We're always expanding and investing in our products and experiences. When we opened, we had six themed lands and within the first year we announced that we were adding a seventh, which is the fastest overall expansion of any Disney Park in the world. We've also just announced plans for Zootopia to be built, which will be our eighth themed land, and it recently started main construction. This decision wasn't taken lightly, and we routinely received feedback that guests wanted to be able to see Judy and Nick in particular, as Zootopia was one of the most popular animated films released in China. This is a huge investment for us and something that we're very excited about. We also have our fifth anniversary approaching and it's amazing to think that we're going to be 5 years old! It's going to be an opportunity for us to look back and also introduce some new experiences that we haven't yet announced.

Q. Besides the expansion plan, what else can we expect to see from Shanghai Disney Resort in the near future?

A. The year 2020 is the Year of the Mouse, so we will be featuring Mickey and Minnie Mouse in all kinds of ways. We have some surprises planned for Spring Festival which will be announced soon. For the rest of the year, we have our seasonal events calendar and we continually invest in new experiences to keep giving guests relevant reasons to visit. We are incredibly optimistic about our future in China. There are incredible opportunities here for us to continue growing and to be a positive influence on the service sector. We continually strive to bring happiness and joy to families in Shanghai and across China.

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A BALANCING ACT

China's economy today is driven more by domestic consumption than exports. To what extent are exports still vital to China's growth?

By Jens Kastner

Image by José Luna

Despite the rise in domestic consumption and the impact of the US-China trade war, exports are in fact still an important driver of the Chinese economy

China's phenomenal growth and rising prosperity over the past four decades was kickstarted by export manufacturing. This remains a crucial part of the economy even though domestic demand is becoming ever more important. But China's export industries are being challenged by a growing list of issues, including economic growth rates elsewhere, protectionism, rising costs, security concerns and trade restrictions.

Exports as a proportion of China's total economic activity have been shrinking for years, and maybe soon in absolute terms too. This has significant consequences in terms of China's trade balance, but also domestically in terms of employment rates and tax revenue flows.

Domestic consumption playing a bigger contributor to economic growth than exports is a positive sign in terms of the growing maturity of the economy. World Bank data confirms China is now significantly less export-oriented than it was a decade ago. The contribution of exports to gross domestic product (GDP) declined from 36% at its peak in 2006, to 19.5% in 2018. This is low compared to, for instance, South Korea where the export contribution in 2018 was calculated at 44%.

But China is still the world's largest exporter by value. The country shipped $2.294 trillion worth of products around the globe in 2018, according to statistics reported by the International Trade Centre. About half of exports by value—47.8%—were delivered to other Asian countries, while 22.4% were sold to North American importers. China shipped another 19.1% worth of products to Europe. Africa took just 4.21% of the total exported goods and South America 4.17%.

The top categories for exports are electrical equipment and machinery, including computers and smartphones, accounting in total for over $1.1 trillion in 2019, or around 44% of total exports. Clothing amounts to around 6% of exports and building materials and furniture account for 4%.

"The trajectory of export growth matters much in areas like employment and tax revenue, especially for provinces that still rely heavily on the manufacturing-for-export industries, such as Guangdong, Jiangsu and Zhejiang," says Nick Marro, China Lead Analyst of the UK-based Economist Intelligence Unit (EIU). "This dependency will likely persist for some time, even as China works to develop the domestic services market as a bigger part of its economy."

China's accession to the World Trade Organization in 2001 super-charged its export industries and was a key milestone in the country's astounding economic rise, but the area seeing big increases these days is online domestic retail. The latest Singles Day, a Chinese shopping holiday that falls November 11 every year, generated RMB 268 billion ($38.2 billion) in sales in 2019, up almost 26% from the previous year and coming close to the $42.8 billion earned through cross-border trade in that month.

In 2018, domestic consumption contributed 76% of GDP, compared to only 50% in 2013, according to data from the Australian-based financial services company ANZ. Growth in domestic consumption has been the driving force behind income growth, industrial upgrades, job creation and the revolutionized service sector. The country's services sector is being transformed by the fast growth of instant credit verification, inventive mobile consumer applications and mobile payment systems.

"Hot areas in service consumption frequently emerge, and the innovation capability of sectors including culture, education, tourism, sports, elderly care and home service sectors is constantly improving," Chen Lifen, an official with the Ministry of Commerce, told the state-run Xinhua News Agency in October.

Julian Evans-Pritchard, Senior China Economist at UK-based Capital Economics, says China has cushioned itself from the impact of a slowing export sector by relying more on domestic growth drivers, most important of which is the construction of housing and infrastructure.

"Although incomes are rising, there still are many people whose incomes rely on the export, infrastructure and property sectors, especially in inland regions," he says.

But prospects for significant growth in infrastructure and property are no longer bright, and despite the benefits that a rise in domestic consumption has brought, China's role as the "factory to the world" is still fundamental to its overall economic health. This role is becoming difficult to sustain in the face of all sorts of macroeconomic and geopolitical headwinds, including the China-US trade dispute.

Exports increased by just 0.5% in 2019 from a year earlier, according to China customs data, a sharp fall from a rise of 9.9% in 2018. And while a China-US "Phase One" trade deal was signed in January, the prospects for the sector in 2020 are not considered rosy, which has big implications for the wider economy.

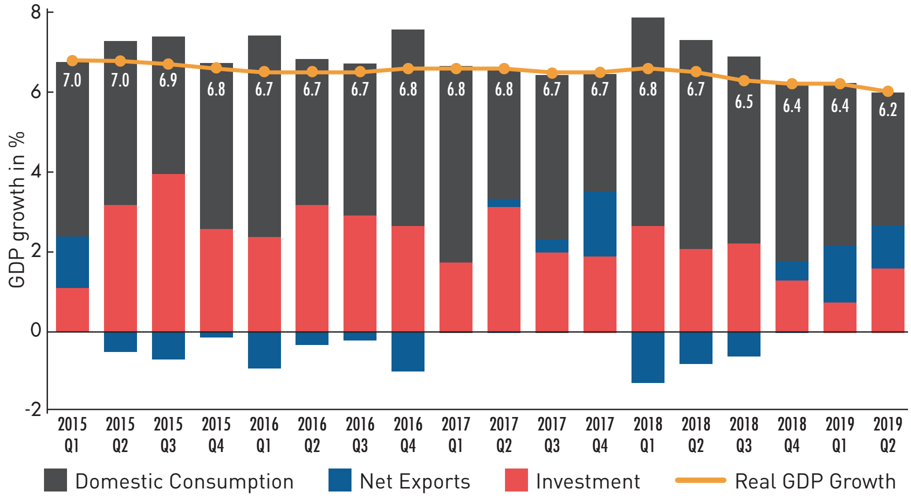
"Domestic consumption has increased significantly over the past decade but its role as 'factory of the world' still remains in place," says Fraser Howie, co-author of *Red Capitalism: The Fragile Financial Foundations of China's Extraordinary Rise*. "Exports still make up nearly 20% of GDP, down from a decade before but still a hugely important part of the economy. Tariffs on those exports and hostility to 'Made in China' will have a corrosive effect on the economy. At a time of domestic deleveraging trade conflicts are a knock upon a bruise."

The imposition of the tariffs by the US government on Chinese imports has had a chilling impact on China's export industries, but also on the many companies that over the past decades have become reliant on China-based supply chains. The tariffs and confrontations have convinced many companies of the need to diversify and create alternatives to China production, in spite of its efficiencies and advantages.

This has contributed to the slowdown in export growth with the shift of manufacturing capacity to places like Cambodia and Vietnam. These are moves also aimed at escaping China's rising labor costs and increasingly stringent environmental regulations, as well as the

COMPOSITION OF GDP

Net exports still make up a significant portion of China's economy



Source: National Bureau of Statistics, Medium

import tariffs the US slapped on Chinese goods as part of the trade war, says David Collins, CEO of Shenzhen-based China Manufacturing Consultants (CMC).

A good answer for exporting companies, Collins believes, is to stick with China and find ways to cut costs and increase productivity through automation and improved management, allowing China-based factories to stay competitive both in China's own consumer market as well as overseas. China's unparalleled production ecosystem in places like Shenzhen and the Yangtze River Delta, and its efficient network of highways, ports and, railways make it difficult for many companies to shift production to other markets.

"Although some companies don't like to face change and rather leave, we believe prospects are bright for those that do change, and this is why we are still here," Collins says. "The government has an ace up its sleeve, as it could relatively easily facilitate the shift from export-oriented manufacturing to domestic market-oriented by reforming the value added tax regime."

Collins explains that as it stands, export manufacturers are spared a portion of the VAT but are not allowed to sell into China without giving up this preferential treatment.

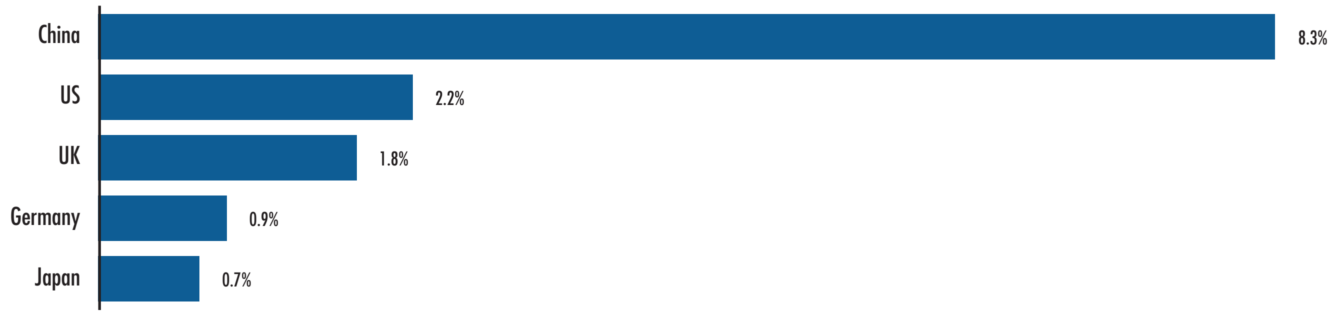
Nevertheless, Renaud Anjoran, a partner at CMC, a UK-based financial derivatives dealer, says that many export-oriented manufacturers are wary of focusing too much on the domestic market. "It is about risk management as selling 40% to the USA, 20% to UK, 15% to France and 10% to Australia and so on is safer than selling 80% to China," Anjoran says. "Among the other factors are the fiercer price competition in their domestic market and the great R&D contribution they get from some of their overseas customers," he added.

Last year, the government allowed the RMB to weaken, which helped exporters. "By allowing its currency to slide, China has partially cushioned itself against the damage caused by the trade war with the United States," said Maximilian Kaernfeld, a researcher with the Germany-based think tank Mercator Institute for China Studies (Merics), in a late-October note. "Letting the yuan weaken has moved the cost of tariffs away from exporters, though it has not removed them completely."

Keeping a balance

While exporters remain crucial to economic health, returning to an export-led trajectory is no longer an option. "China must make private consumption its new major growth driver, which is easier said than done because at the end of the day,

GROWING CONSUMPTION | The growth of domestic consumption in the world's major economies, 2000-2018



Sources: IHS Markit, Quartz

private consumption must also be funded somehow," says Evans-Pritchard.

Other countries that underwent the transition from an export-oriented economy to a consumption-oriented one, such as Japan and South Korea, saw their GDP growth rates declining to a much slower pace than China today. But Evans-Pritchard stresses that Japan and South Korea faced this difficult transition when their levels of prosperity were significantly higher than China's, meaning China's transition will be riskier.

Eyes on the consumer

Data by market researcher Euromonitor International shows that consumers spent $5.3 trillion in 2018, up from $4.7 trillion in the previous year but still far less than the $13.6 trillion their American counterparts spent in 2018.

Chen Yangyang, an analyst with Shanghai-based market researcher CMR, points out that Chinese consumers' desire for a better quality of life has consistently risen. A valuable parameter for this, Chen says, is the annual craze surrounding Alibaba's Single's Day, with the "What will you buy?" and "What did you buy?" questions in the event's run-up and the aftermath replacing traditional weather-related conversation starters.

"From stocking necessities, such as shampoo and tissues, to purchasing high-end products, such as Lancôme skincare kit and Marshall speakers, consumers are getting more and more prepared to welcome [the idea of] 'Buy Buy Buy,'" Chen says.

Notably, 2019's Singles' Day figures were largely driven by increased demand from smaller cities and less-developed parts of the country, as indicated by sales via Alibaba's Juhuasuan e-commerce platform, which targets tier-3 cities and below. It therefore comes as no surprise that a growing number of companies that started off as contract manufacturers for international brands are now developing their own brands to sell directly to local consumers.

"We used to rely on overseas markets but are now making most of our revenue from selling directly to consumers via brick-and-mortar stores," says Huang, the General Manager of Hong Yi Ka Dan, a Hangzhou-based manufacturer of high- and medium-end silk-made scarfs and shirts. "If you look at how eagerly international luxury brands are trying to enter China, you understand how many opportunities there are for companies like us in tier one to three cities."

Persisting dependency

But exports remain important, not least because it earns China the US dollars it needs to pay for critical imports, such as coal, metals and oil.

Impacted by the export slowdown, and also by rising domestic demand for imported goods and outbound tourism, foreign currency reserves rose only marginally in 2019 after a fall of $67.2 billion in 2018. China's current account surplus is also shrinking, from 10.3% of its GDP in the third quarter of 2017, to just 0.4% in the third quarter of 2018. A report from financial services firm Morgan Stanley expects a current account deficit of 0.3% in 2019, widening to 0.6% in 2020, a trend that has significant implications for China in the long term.

Nick Marro from The Economist Intelligence Unit singled out the ability of Chinese companies to service foreign debt, and lending related to the Belt and Road Initiative (BRI) as important aspects to watch in this regard. BRI lending is still mostly US dollar-denominated, making the China-led initiative for the strengthening of the global infrastructure network, or acquisitions of foreign companies along the route, costlier.

The exports business is going to get tougher, with long-term implications for its economy. "We expect shrinking exports will likely be one of the biggest drags on China's economic growth in the coming months, as the tariff impact will be further in place, along with the pay-back effects," Ting Lu, Chief China Economist at Nomura, says.

"Exports may no longer be as significant in percentage terms to the economy, but the importance of them should not be underestimated," says Howie. "Trade is an essential part of fueling the economy via employment and infrastructure but also backing its global ambitions. China has things that all countries want to buy, especially developing countries, Chinese exports go hand in hand with the Belt and Road initiative."

The Asian Century

Kriengsak Chareonwongsak, past member of the Thai Parliament and founder of the first future studies research institute in South-East Asia, explores leadership building in ASEAN

Kriengsak Chareonwongsak has been a member of Thailand's House of Representatives, was on the Executive Board for the Democratic Party and is currently a president or member of the boards of several Thai business and development organizations. He also founded the Nation-Building Institute (NBI), which seeks to increase development through leadership and morality training of senior executives and students.

Kriengsak's many roles in Thai society have made him a popular and highly visible figure, and many of his books have been bestsellers in the country. He is a commentator and columnist, discussing political and economic issues, and his perspectives often feature in the media both in Thailand and internationally.

Q. How do you see China's relationship with ASEAN countries developing?

A. I believe ASEAN and China will have a more integrated relationship and that ASEAN will become increasingly reliant on China. China is ASEAN's largest trading partner and has been for a decade. Therefore, I can only see trade and investment rising to higher levels. The centrality of China's role in ASEAN will become far greater than we have seen.

The (China-US) trade war has resulted in a slower growth rate for China, with the country needing to look for new markets and build new relationships to help alleviate the effects. Anything to do with freer trade and less restrictions between ASEAN and China will help China in this venture. Therefore, I believe that China will place more importance on ASEAN.

A lot of things that China did in the past will have to change, especially in terms of being more outward looking. It is in a position where it is able to relocate some of its industries into a more cost-effective sphere, which is ASEAN. I believe ASEAN and China will form an effective regional supply chain. The whole supply chain will run through China and ASEAN in a more substantive way. Only growing in terms of trade, however, is not sufficient. There also needs to be an increased level of social engagement. There needs to be an increased level of business taking place between the people of ASEAN and China, as it will allow for the two to connect naturally. China has to become more forward looking—they cannot depend on the old model, because the relationship is growing on every front.

President Xi Jinping has stated that he believes in respect, but I think it has to cascade down to all levels so the mindset becomes that of win-win to help preserve the longevity of working together.

There is also the issue of geopolitics, as even though ASEAN is growing in influence, the Chinese are growing far more and have more leverage over ASEAN compared to the US due to the political positioning of China.

When Chinese people come into ASEAN, they have to demonstrate concern for the local people , as China is so big that it is threatening for everybody. Therefore, the gesture of coming in with a win-win attitude will open every heart in ASEAN.

Q. People talk about this being the "Asian century." How quickly do you see that developing? If it is true that Asia is ascending, what is the role of smaller Asian countries in this rise?

A. The US will still be a superpower, but the Western century is slowly declining. I do believe that the Asian century is already here, as it has become a region of strong growth. I call it the time for CIA to rise: C for China, I for India and A for ASEAN. The new CIA is the motive for growth and influence in the whole Asian century. If China and ASEAN are able to form a strong bond, it will be the main force pushing the century forward.

An issue that the Asian century will have to grapple with is finding an appropriate and meaningful way to interact with the EU and US. I believe having ASEAN, which is non-threatening, join China, will alleviate some fears that Western powers may have of the Asian century.

The role of small countries is important. In my opinion, Thailand stands to be a big help to China, because it is in the center of ASEAN from a geographical and logistics standpoint. Thailand connects the older ASEAN with the new. The older ASEAN includes Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand and the newer ASEAN includes Cambodia, Laos, Myanmar and Vietnam. China will do well in the Asian century if they use Thailand as a gateway into ASEAN. The smaller countries in ASEAN cannot match China, but they can be complimentary.

Q. You have done a great deal of work in nation building in various forms. What is your sense of the best process for creating government policies that are effective and sustainable, regardless of the country or culture?

A. There has to be a bottom-up approach. There needs to be strong civic engagement with civil societies that are alert and willing to engage. That will help bring tremendous unity in the region. With a top-down approach, China will be able to go far but not fully.

I created a new institute for Thailand called the Nation Building Institute (NBI), which is basically a people-focused institute that teaches policy advocacy and undertakes training and research. It's a community of civil society workers who have an interest in the prosperity of their country. We have created a senior executive class where many deputy prime ministers, cabinet members, civil servants, supreme court judges, attorney general officials, generals, police, business chairmen and CEOs have taken part, and we have even had monks, presidents of universities and prime ministers.

I believe that the model of the NBI is unique, an innovation of the science and art of nation-building. This program will be a big help in unifying the mindset of people to work toward building a society that is prosperous in a sustainable way.

We have 120 elites taking part in each class, with 1,000 people having gone through the program thus far. We have also extended our work to include young people at university and high school levels. We have established nation-building youth clubs in 2,000 schools and in each school we have hundreds of participants. So you can see that soon there will be millions of young people who understand the need for a bottom-up approach to building a nation.

We have seen the entire world build their countries using the top-down approach and only a few countries have succeeded in using that approach thus far. The majority fail badly, but by using a bottom-up approach first and then integrating the top-down approach, a much stronger and sustainable society can be created.

> **China will lead the way in the Asian century, however they will have to work very hard to build relationships with all 10 [ASEAN] countries**

Q. What role should private enterprise and outside players, including academics, play in the development of government policy? What would the "right level" of involvement be?

A. I believe businesses and entrepreneurs are engines of growth in society. That's why we have to listen to them, assist them, allow them to experiment and also allow them to fail. We have to allow them to really envision what they think is good for society and let them play a role in the enterprising effort. That will make our society stronger.

The same is true for academics, as they are the brains of society—it is important that they are able to exercise their brains. The problem is that academic teaching is sometimes out of date and they are often not involved in the well-being of society or as experienced as they were in the past. I like the Harvard model, where most of the people who are instructing students have experience in the real world by engaging in social development and policymaking.

I believe this is lacking in Asian society, with academia not linking back into government and public policy. I hope that China and ASEAN, particularly Thailand, can allow entrepreneurs and academics to play a role in the development of the state.

Q. To what extent are culture and socio-political systems factors in the development of economy and the maintenance of prosperity? What advantages and disadvantages do Asian countries have versus the Western model?

A. The West is good in many things, but also weak in many. We should marry the best of the West and the best of the East. We should not look down on Eastern society, as I believe Asians have a lot to teach the West. We are a very relational society.

> **It is best to marry what is good in the East with the West and then we'll find the perfect balance**

I just came back from China and every time I've been there, I've been invited by government leaders to dinners and other opportunities to socialize. We talk, we joke and we laugh together. That's not something that happens in the West. Consequently, you don't go very far, as human relationships are a vital ingredient for doing things together in the long term. It is a model of showing care: you let the heart lead and the head will follow. That's why I think the West has a lot to learn from the Eastern model of working together and sharing joint concerns. The West always criticizes the East when we give gifts to one another, because they rarely give gifts, but the gift represents more than material value item. It is an expression of caring for one another.

When doing business, leading with your heart will often take you further than just leading with your head. In my opinion, once again, it is best to marry what is good in the East with the West and then we'll find the perfect balance.

Q. The world seems to be more acrimonious. From a structural and political perspective, why is this occurring? What is the solution?

A. When the world is desperate and people have fears surrounding security, they often grab anything floating along the river. Politically, in the entire world, we've seen people electing unusual candidates to be come presidents, politicians and prime ministers. This is a symptom of crisis. When conventional politicians cannot solve people's problems, society loses hope and looks for alternatives. Consequently, we are facing a difficult situation, but we have to let the whole thing run its course. Eventually people will turn once more back to normality.

With regard to President Trump, I think he is making gains in the short run at the expense of a loss in the long run. That is not useful for the world or even the US. We have quickly started to see the global impact of the trade war, and I hope that we learn that talking nicely as friends and brothers is better than hostility. We should not use the attitude of win-lose, but instead adopt a win-win perspective. We should stay alert and always look for a solution that is win-win for all.

Q. Do you agree that technology is having an impact on public debate? How can we offset the problems that may come from this?

A. People have no time to reflect and think clearly. A constant flow of information is bombarding them. Politics has taken a hit as a consequence. It's easier to influence society now, without necessarily having to reason with the public. Policy has become shallow and is more emotional than cognitively rational. I feel we are in danger because we do not allow modern people to think deeply enough. We need a new kind of politician, a people's politician that is technology savvy yet morally clear in heart. They have to be reasonable, use their brain and their heart at the same time and articulate policies based on evidence.

Therefore, we have to be more careful in releasing information. It will take a new kind of politician to use the media in the right way and release information that is factual, true, balanced, reasonable and digestible. They need to be able to clearly communicate so that people can understand the world. If we don't have that, then people are at the mercy of those who are in charge. We have to be careful in this age where it is impossible to distinguish quickly what is fake.

Q. What role do you think millennials and the next generation play and what should they be focusing on to help develop ASEAN countries?

A. Let's be realistic. In a few years from now, governance will be in their hands. We older people will be off the scene, therefore, we have to mindfully prepare for the future by preparing the youth of today.

My concern is that we have not allowed millennials to be mentored and trained so that they become ready for the rapid changes that are seen in disruptive times. Millennials today are shaped by the era they grew up in—they are people who no longer reflect deeply. They follow their independent spirit; they no longer want to work hard and have no concern for the collective whole. But when you live in a society, you cannot just be individualistic.

We have to bring the new generation to the mindset where they understand that everyone will be severely damaged if people do not consider society as a collective whole. It is our duty to help them see that—without patronizing them but allowing them to think with us and converse with us. The older generation has not afforded the new generation the time required to shape them into good leaders. I'm fearful because we allow the media to raise our children and we don't raise them ourselves anymore. Ultimately, I think that we could still have a bright future if we concentrate our efforts on the new generation who will take command of the society in the future.

DELIVERING CONVENIENCE

The South-East Asian e-commerce market is an emerging battleground for Chinese tech giants

By Matthew Fulco

Image by Pier Giuseppe Giunta

South-East Asia has become the latest battleground for e-commerce companies. Can China's tech giants win by proxy?

In the first hour of the November 11 24-hour online shopping frenzy known as Singles Day, South-East Asia's top e-commerce platform Lazada received a record 3 million orders—double the previous year's number. The orders flooded in from Indonesia, Malaysia, Vietnam and elsewhere, in what is easily the most effective sales event in the region. But for Lazada, its focus on Singles Day may also have something to do with the 83% ownership stake that Chinese e-commerce titan Alibaba holds in it.

In many parts of the world, the idea of online shopping and Amazon go hand in hand, but in South-East Asia, it is players with Chinese involvement that have taken the lead. It was Alibaba that created Singles Day in its home market a decade ago, taking consumerism in China to new heights. In 2019, Alibaba's Singles Day sales reached an unprecedented $38.4 billion, well above 2018's $30.7 billion.

China's e-commerce market remains robust, but the market has matured, causing Alibaba and its competitors to look overseas in pursuit of new avenues of growth. Neighboring ASEAN countries, which include Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam to the south, were an obvious and promising target.

Outgrowing the pond

"The China [e-commerce] market is saturated," says Ben Cavender, managing director of the Shanghai-based consultancy China Market Research Group (CMR). South-East Asia, on the other hand, is on the cusp of large-scale expansion. The region's "large consumer classes and mobile-savvy users" make it a logical choice for China's internet giants as they seek to build global e-commerce businesses, he adds.

Forrester Research, in a report titled Online Retail Forecast, 2018 To 2023 Southeast Asia, forecasted that South-East Asia's online retail market will reach $53 billion by 2023, up from $19 billion in 2018. The most important market is Indonesia, South-East Asia's largest nation by size of economy, land area and population (272 million). Some 90% of the country's internet users between the ages of 16 and 64 report that they already buy products and services online, according to Hootsuite, a social media management platform. But growth potential is still massive: The average e-commerce user in Indonesia spent just $89 online last year, statista found, compared to $858 in China and $1,800 in the United States.

"What's important to remember about Indonesia is not just that it's big, but that it's bigger than the next three most populous South-East Asian countries combined," says Kay-Mok Ku, a managing partner at Gobi Partners, a Singapore-based venture-capital firm.

Those three countries are the Philippines, Vietnam and Thailand, which have populations of 105 million, 91 million and 69 million respectively. Along with Indonesia, they comprise South-East Asia's paramount e-commerce markets.

Three major Chinese players

Compared to China's e-commerce market, South-East Asia is more diverse with fewer restrictions on foreign investment. It's a new ballgame for China's internet giants.

"South-East Asia is an emerging region but also a very open market," says Jessica Liu, a partner at Taipei-based AppWorks, one of Asia's largest accelerators. "It comes back to understanding that no matter if a company is Chinese or from another country, Greater South-East Asia is still a level playing field for all companies."

And while there are numerous e-commerce players competing for the South-East Asian market, the leaders in the game are Alibaba, Tencent and JD.com (although it should be remembered that Tencent has a 20% stake in JD.com), all of which are China-based.

Alibaba's South-East Asian strategy

Alibaba has been among the most aggressive foreign e-commerce firms in South-East Asia, and it has a commanding stake in several of the region's largest local online marketplaces. It initially

FIERCE COMPETITION

Lazada tops the list for e-commerce in most South-East Asian markets, based on monthly active users

Top e-commerce shopping apps by combined iPhone and Android averaged monthly active users, Q1 2019 in selected countries (Indonesia, Malaysia, Philippines, Thailand, Vietnam, and Singapore).

INDONESIA	MALAYSIA	PHILIPPINES	THAILAND	VIETNAM	SINGAPORE
Tokopedia	Lazada	Lazada	Lazada	Shopee	Lazada
Shopee	Shopee	Shopee	Shopee	Lazada	Qoo10 Singapore
Bukalapak	Taobao	ZALORA	AliExpress	Tiki.vn	Shopee
Lazada	11street	Amazon	JD CENTRAL	Sendo	Taobao
JD.id	AliExpress	AliExpress	Amazon	Adayroi	ezbuy
Blibli.com	ZALORA	BeautyMNL	eBay	AliExpress	ZALORA
ZALORA	Lelong.my	eBay	Alibaba.com	Amazon	AliExpress
AliExpress	eBay	Sephora	Chilindo	eBay	Amazon
Zilingo Shopping	Amazon	Alibaba.com	Zilingo Shopping	Alibaba.com	Amazon Prime Now
Amazon	Go Shop	ALTHEA	Joom	LOTTE.vn	ASOS

Source: App Annie Intelligence, iprice

gained control of Lazada in 2016 with a $1 billion investment, which at the time was its largest investment outside of China. In 2017, it increased its stake in Lazada from 51% to 83%.

Following up on its investment in Lazada, Alibaba led funding rounds of $1.1 billion in 2017 and 2018 into the major Indonesian e-commerce player Tokopedia, giving the Chinese company a foothold in the region's largest market. Tokopedia was Indonesia's most-visited e-commerce site from the second quarter of 2018 through the quarter ended June 2019 with 140.4 million visits, according to online shopping aggregator iPrice.

Compared to Tencent and JD.com, Alibaba appears more intent on replicating its China digital services ecosystem with e-commerce at its core in South-East Asia. "It (Alibaba) is bringing a proven model which is ultimately bringing China's retail to the South-East Asian market," says Declan Kearney, the APAC Managing Director of Edge by Ascential, a digital retail insights and consulting provider.

The model has worked well for Alibaba in China, where it understands consumer behavior and can count on regulatory support. Alibaba has built a giant digital bazaar with Taobao and Tmall and provides an easy online payment option, the e-wallet application Alipay, in a country where credit cards have never been widely used. Later, armed with all the user data gleaned from its online marketplaces, Alibaba expanded into online lending with MyBank.

Tencent's South-East Asian strategy

Alibaba's biggest competitor, Tencent, is taking a different approach to South-East Asia. With a 40% stake in e-commerce and game publisher Sea, Tencent is the biggest shareholder in the Nasdaq-listed parent company of the Singaporean online shopping site Shopee.

The investment in Sea is strategic for Tencent as it gives the Chinese company a regional foothold in both online shopping and gaming—the latter being Tencent's largest source of revenue.

Sea is ASEAN's biggest gaming platform with roughly 161 million active users each quarter. Under the deal, Sea has the right of first refusal to publish Tencent's games in Indonesia, Malaysia, Singapore, Taiwan, Thailand and the Philippines.

JD.com's South-East Asian strategy

Meanwhile, JD.com has invested in the Vietnamese e-commerce site Tiki.vn, Indonesian travel-booking platform Traveloka, Thai online fashion site Pomelo, and Thailand's Central Group, a major real estate, retail and hospitality conglomerate. The $500 million deal between JD.com and Central Group involves financial technology (fintech) as well as online shopping.

"Tencent is less focused on e-commerce than Alibaba—they just want to capture digital services, whatever that may be," CMR's Cavender says.

Will These Different Strategies Work?

"In the initial stage, Alibaba can take time to understand how the local e-commerce platforms operate and further improve its control over them. Later, it has the option to increase or reduce its investment," says Rose Chang, an e-commerce industry analyst at the Taipei-based Market Intelligence & Consulting Institute.

Mobile payments are starting to gain traction in South-East Asia, but the economy is still very cash-focused, far more so than in China. "In Indonesia, not everyone has a credit card or even a bank account, so companies like Lazada have localized by allowing cash on delivery," says APAC's Kearney. "We see South-East Asia rapidly gaining on the advancements of China within the next few years."

Alibaba also faces competition in South-East Asia on a level it has never experienced in China. In contrast to South-East Asian countries, "the regulator acts as a promoter in China," says Gobi Ventures' Ku. "It takes a national champion approach."

Indeed, as Alibaba has become dominant in e-commerce, it has positioned itself to also become one of China's leading internet finance platforms. Chinese regulators granted MyBank a coveted online lending license in 2015. The only other company that has so far received one is Tencent-backed WeBank. But these financial operations are effectively confined to the China market, for now.

Alibaba doesn't have an obvious path to fintech dominance in South-East Asia," says Zennon Kapron, director of Singapore-based Kapronasia, a research firm and consultancy focused on the financial services sector. He notes that ASEAN's digital payments space is highly fragmented, with a huge array of competitors, from traditional credit cards to the fintech arms of ride-hailing giants Grab and Go-Jek to the dedicated digital wallets of different e-commerce platforms, like ShopeePay.

Some analysts say that Alibaba could benefit by developing better local strategies, given the uniqueness of each ASEAN country's market. "Investing the time and resources needed to localize will be key (to success)," says Kearney.

Liu contrasts Tencent's approach to South-East Asia e-commerce favorably with Alibaba's. "The typical Chinese e-commerce story [Alibaba's] is about taking a proven model in China and going outside of the China market, and executing to the core strengths of the company," she says. "But Tencent is a totally different story. They are partnering with local companies overseas and using their investment arm to empower the local ecosystem."

When looking at JD.com, Baseer Ahmad Siddiqui, a Kuala Lumpur-based ASEAN software analyst for market researcher IDC, believes that JD Central has the potential to dominate if it lives up to its commitment to provide consumer "peace of mind" with 100% authentic goods and offering them a unique customer experience.

"JD Central may do acquisitions of smaller marketplaces to expedite their customer acquisition, as challenging Lazada's position as a market leader needs a very effective market penetration and customer retention strategy."

Kok Hoi Wong, the chief investment officer for APS Asset Management Pte in Singapore, disagrees, saying the company needs to fine-tune its strategy in its home market before attempting to lead in markets abroad. "JD must get its act right in China, turn it around and make it profitable before it expands internationally," said Wong. Brutal competition among hundreds of e-commerce players means business is tough for all online retailers and "we will see more blood before we see more profit."

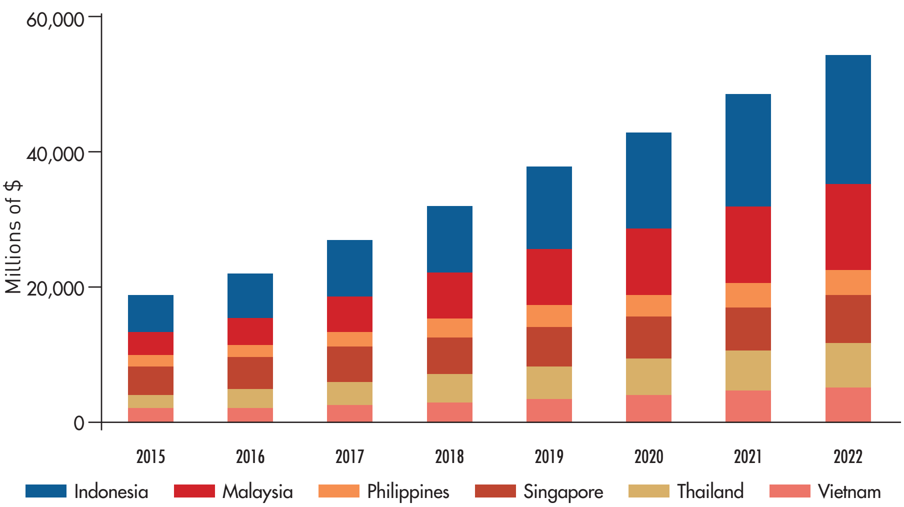
International competitors

A wide variety of other international e-commerce firms are vying for market share across South-East Asia too. These include South Korea's Gmarket and SK Planet, as well as Amazon and eBay from the US. But none come close to the dominance that Chinese e-commerce players have in the region.

E-commerce is fiercely competitive in South-East Asia, and Amazon is struggling to compete in a crowded market. Despite positive media attention around the implementation of Amazon Prime in Singapore, Amazon's presence in South-East Asia lags far behind its Chinese competitors. Its best markets are the Philippines and Thailand, where it comes in as the fourth and fifth most popular e-commerce platforms respectively. Elsewhere, Amazon's footprint is almost invisible—it is ranked seventh in Vietnam, eighth in Singapore, ninth in Malaysia and

THE BATTLEGROUND | Indonesia is the largest South-East Asian e-commerce market

Selected countries e-commerce sales



Sources: Fitch Solutions

The Jakarta headquarters of Tokopedia, the largest e-commerce platform in Indonesia

10th in Indonesia.

Should Amazon step up its presence in South-East Asia, as some analysts expect it will, then competition would intensify. "Amazon has the capability and proven experience of opening up markets," says AppWorks' Liu. "When they go after a market—India for instance—they perform with a high degree of confidence and commitment. They also have extensive operational experience overseas compared to other platforms."

Fragmented victory

Unlike in China, where their respective platforms have gone head to head, Alibaba and Tencent battle for e-commerce market share across South-East Asia only indirectly, primarily through strategic acquisitions. The crossover in ownership among some of these firms also causes some unusual market dynamics. For instance, Lazada and Tokopedia, both backed by Alibaba, are direct competitors in Indonesia.

One South-East Asia-based investor, who spoke to *CKGSB Knowledge* on condition of anonymity, suggests that Alibaba might be interested in taking majority ownership of Tokopedia in the event that the current majority shareholder, Japan's Softbank, is forced to divest some of its shares—a possibility if the company needs cash. "Alibaba might be able to take over Tokopedia for a good price," the person says.

Softbank posted a massive $6.5 billion loss in the third quarter of 2019 following weak performances by ride-hailing giant Uber and office-sharing startup WeWork, two of its portfolio companies. It was Softbank's first quarterly loss in 14 years.

If Alibaba assumed control of Tokopedia, it would have a stronger position in the Indonesian e-commerce market and could focus Lazada's resources elsewhere in the region, where it is performing better. Lazada was the No. 4 e-commerce firm in Indonesia behind Tokopedia, Shopee and Bukalapak in the first quarter of the year, according to iPrice.

Tencent-backed Shopee has emerged as Lazada's main regional rival. In the quarter ended March 2019, Shopee became ASEAN's most visited e-commerce platform as website and app traffic increased 5% to 184.4 million visits from the fourth quarter of 2018, iPrice found. During that period, Shopee was the No. 1 e-online marketplace in Vietnam and second in Malaysia, the Philippines and Thailand.

Ultimately, strategic acquisitions give China's e-commerce giants a strong foothold in ASEAN, but it will be difficult for them to dominate all the major markets. Tailoring business strategies for individual ASEAN markets will be essential as consumer tastes differ greatly from China and there is much diversity within the region too.

Gobi Partners' Ku believe that the experience of Japanese companies expanding internationally in fields including auto production and electronics manufacturing in the late 20th century, could be instructive for China's e-commerce giants in South-East Asia, "The Japanese have gone through this," he says. "When they first started going overseas, they brought all of their systems from Japan, and they found that what worked in Japan, didn't necessarily work elsewhere—so they adapted."

The Key to Successful Scaling

Reid Hoffman, co-founder of LinkedIn, looks at how companies can achieve rapid growth and the best way to manage the process

For most of the world, the terms "Silicon Valley" and "startup" have long been synonymous. But Silicon Valley's dominance as the "home of the startup" is being challenged across the world, and none more so than by China, which has more "unicorns" (startups valued over $1 billion) than any other country.

What is the secret to these startups' extraordinary success? Contrary to the popular narrative, it's not their superhuman founders or savvy venture capitalists. According to a new idea it's because they have learned how to "blitzscale."

Reid Hoffman is an American venture capitalist, author and entrepreneur, and is best known for being the co-creator of LinkedIn and former chief operating officer of PayPal. He is currently a partner at the leading Silicon Valley venture capital firm Greylock Partners.

Hoffman has written several books, with his most recent being *Blitzscaling: The Lightning-Fast Path to Building Massively Valuable Companies*, which he co-authored with Chris Yeh. It argues that the secret to starting and scaling massively valuable companies is *blitzscaling*, a set of techniques for "scaling up at a dizzying pace that blows competitors out of the water."

In this interview, Hoffman explores blitzscaling in the Chinese context as well as the main factors that determine which startups are set for success and which will crash and burn.

Q. You came up with the term 'blitzscaling.' What does it mean?

A. *Blitzscaling* is the pursuit of rapid growth by prioritizing speed over efficiency in the face of uncertainty. This approach is the unsung reason that Silicon Valley has created the majority of the world's most valuable technology companies over the past 25 years, despite a minuscule population of around 4 million people.

***Q. What was it that inspired you to write* Blitzscaling?**

A. I've heard many people say that the secret to Silicon Valley, or China, is that they are great places to start companies. But the knowledge of how to start a company has been distributed throughout the world, thanks to the internet. The real challenge, and value, comes from being able to scale a company, and little has been written about that important subject. When Chris Yeh and I wrote *Blitzscaling*, we started by organizing and refining the lessons we had learned from a lifetime of working in Silicon Valley.

But the more we explored the concepts of blitzscaling, the more we realized that the story of lightning-fast growth was incomplete without including the lessons and stories of scaling in China. That is why our book opens with the story of WeChat's launch as well as with the story of Airbnb's decision to blitzscale, why China is the only place in the world that gets its own chapter, and why we've dubbed China "the land of *blitzscaling*."

Q. Some say that China's current tech business model of going for scale first, regardless of revenue or profitability, sounds very much like how Silicon Valley operated 20 years ago. Is it a valid approach?

A. *Blitzscaling* says that it makes sense to prioritize speed and scale ahead of revenue or profitability when pursuing the leadership of a valuable winner-take-most market. The approach is valid as long as those market dynamics apply. That was true in Silicon Valley 20 years ago, and is true in China and Silicon Valley today.

But while Silicon Valley practices rapid scaling in some unique and amazing ways, China is the place outside of Silicon Valley where I've learned the most powerful blitzscaling techniques. Why China? Like the United States, China offers a large domestic market, which allows native *blitzscalers* to build substantial scale and momentum before taking on the challenge of globalization. But there are ways in which China is a superior environment for blitzscaling.

For example, China's population and education system result in an abundance of skilled labor and technology experts. In areas like robotics and artificial intelligence, China is probably ahead of the rest of the world. But perhaps the strongest factor is China's culture of speed. All of this combined results in some of the world's most stunning examples of *blitzscaling*.

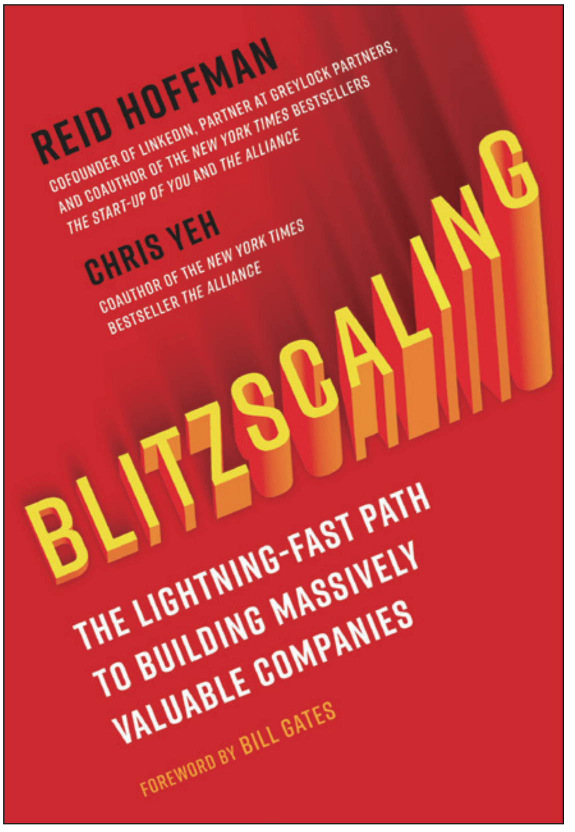
The dedication of Chinese entrepreneurs to extreme speed results in a pace of work that makes Silicon Valley's "internet time" workaholics look slow.

Q. How did learning about China shape your business mindset?

A. In launching LinkedIn China, I had the honor and delight to learn about the Chinese approach to *blitzscaling* from world-class Chinese entrepreneurs, executives and investors. Sadly, this is something that few in Silicon Valley get a chance to experience. The people I met in China invest a lot of energy into learning from what goes in Silicon Valley, but few entrepreneurs from Silicon Valley or around the world invest the same energy into learning from the Chinese. This is a huge missed opportunity.

When I travel and speak in China, I find that most of the members of my audiences are familiar with the latest developments in Silicon Valley. Most Chinese executives speak and read English and are reading the latest English-language news on a daily basis. How many American or European executives read Chinese and are staying abreast of developments in China?

When Western entrepreneurs wait for an innovation to make its way into the English-language press, perhaps because a Silicon Valley company has started rolling it out, China's blitzscalers have already built a major advantage using a one-year head start on the global market.



Q. The past 20 years has seen enormous dynamic change, largely generated by the internet, as you mentioned. To what extent do you think change will continue on the same trajectory in the years to come?

A. The internet revolution has been going strong for nearly 25 years, with no signs of slowing down. I believe the trajectory will be the same or even faster in the future.

Q. What are some examples of companies that have successfully 'blitzscaled'?

A. Consider Tencent's WeChat service, which is probably the most interesting communications tool in the world.

Fast Company called WeChat "China's app for everything," and the *Financial Times* reported that more than half of its users spend over 90 minutes a day using the app. To put WeChat in an American context, it's as if one single service combined the functions of Facebook, WhatsApp, Facebook Messenger, Venmo, Grubhub, Amazon, Uber, Apple Pay, Gmail, and even Slack into a single megaservice. You can use WeChat to do run-of-the-mill things like texting and calling people, participating in social media, and reading articles, but you can also book a taxi, buy movie tickets, make doctors' appointments, order dinner for the night, pay your rent, play games, send money to friends, plus so much more. All from a single app on your smartphone.

Yet what's even more amazing was the speed and aggressiveness with which WeChat grew. Pony Ma authorized the WeChat project after a single late-night phone call. Two months later, starting from scratch, a small internal team launched WeChat. Fourteen months after that, WeChat registered its 100 millionth user. WeChat is a testament to the power of rapid, decisive action.

Another amazing blitzscaler is Xiaomi, and its founder Lei Jun. Xiaomi has an innovative business model where it sells its smartphones at cost as a distribution strategy to build a powerful platform. It then monetizes the software that runs on the platform, as well as the very profitable business of selling accessories to its smartphones and other core hardware products.

Xiaomi achieves its results thanks in part to a relentless approach that makes Silicon Valley seem soft. Lei Jun told me, "You American entrepreneurs are lazy. The vast majority of my company is still working at 9 o'clock on a Saturday night." In some ways, he's right. Chinese blitzscalers work with an intensity that few in Silicon Valley can match. Rather than staying open during the standard American business hours of 9 a.m. to 5 p.m., Xiaomi operates on a "996" model—get in at 9 a.m., leave the office at 9 p.m., and work six days a week.

I saw the same thing at LinkedIn China. To make a tight deadline for our "Red Horse" project, our China team leader Derek Shen simply moved the entire development team to a hotel for two weeks so that its members could work around the clock without any of the distractions of normal life.

Q. What are the main factors that differentiate between startups that are set for success and those that crash?

A. In my book, *Blitzscaling*, we lay out four key growth factors and two key growth limiters that describe successful companies. The successful companies that are tackling large markets, can tap into high scalable distribution channels, sell a high-margin product and leverage network effects or other user lock-in to win a winner-take-most market. In addition, to sustain their growth, they need to have achieved product-market fit, and have a way to solve the challenges of operational scalability.

Q. What is there for Western tech companies to learn from the development and operational models of China tech companies?

A. Wise entrepreneurs can learn about emerging business models by observing what emerges from the feverishly competitive and experimental markets in China. Many business model innovations that have enabled new *blitzscaling* businesses have started either in China, or more broadly in Asia, such as the dizzying rise of digital goods. Any non-Chinese entrepreneur with plans to innovate in areas like mobile payments and consumer robotics ought to learn to read Chinese, or face starting the race to blitzscale with a multi-lap handicap.

Chinese leaders and entrepreneurs should be proud of the amazing advances that they've achieved. But I hope that they will also find in *Blitzscaling* some valuable lessons on alternate ways to scale and manage growth. The biggest opportunity is for Silicon Valley and China to work together and combine their respective strengths. According to Andrew Ng, it took a combination of ideas from both sides of the Pacific to drive breakthrough progress in speech recognition. Silicon Valley companies like Nvidia provided the graphical processor units (GPUs) to power machine learning networks, while progress came from combining Silicon Valley's expertise in GPU programming with China's expertise in supercomputing.

> "China is the place outside of Silicon Valley where I've learned the most powerful blitzscaling techniques

There is no telling what kind of wealth and progress might emerge out of future collaboration between the leading innovators in these two ecosystems.

Q. When it comes to starting a new company, what are the opportunities and challenges like now compared to when you first started doing it?

A. In comparison to the late 1990s, the infrastructure to build companies is much more effective and efficient, ranging from tools like AngelList for raising capital to Amazon Web Services for operating a massively scalable product. The challenge is that more competitors (and potential competitors) exist than at any other time in history. The would-be blitzscaler needs to sprint much faster than 20 years ago.

Q. How does China's Greater Bay Area and Silicon Valley compare when it comes to innovation and opportunities in the startup world?

A. China and Silicon Valley share a number of key strengths, including a massive domestic market, highly educated workforce, and ready access to capital for blitzscaling. One of the areas in which China has rapidly closed the gap with Silicon Valley is in the supply of executives with blitzscaling experience; the success of companies like Alibaba and Tencent have educated a cadre of capable executives and potential founders. Meanwhile, China also has a number of advantages over Silicon Valley, including its strength in manufacturing, and a much larger labor pool.

THE FUTURE IS NOW

China has surged ahead in the 5G race. How is the competition shaping up?

By Kevin Livingston

The rollout of 5G is making global headlines, with everyone now wanting to connect to the internet with the new technology, and China is at the forefront. How is the race shaping up?

The battle over the installation of the next generation of telecommunications equipment around the world can sometimes seem almost as intense as the Cold War that followed World War II and for a good reason—the stakes are high because 5G technology is likely to change life and business fundamentally around the world.

The new standard offers speeds up to 100 times faster than 4G, and latency (the delay between sending information and that information being received) up to 120 times lower. The 5G standard also promises to transform our daily lives with smart cities, self-driving cars and medical breakthroughs, as well revolutionizing military and security technology. The main players over who will control the future of 5G technology are China and the United States.

On the Chinese side, the most prominent player is Huawei Technologies, China's biggest telecoms equipment firm, which has been accused by the US of placing backdoors in its telecommunications networks installed around the world, providing data access to Chinese intelligence services. The US has launched a campaign to stop countries installing Huawei equipment, but Huawei has categorically stated that "there is absolutely no truth in the suggestion that Huawei conceals backdoors in its equipment."

"I believe the US government is right to be cautious," says Adam Segal, an expert on Chinese technology policy and the National Security and Director of the Digital and Cyberspace Policy Program at the New York City-based Council on Foreign Relations. "There will be vulnerabilities in all 5G networks, and countries have to be able to trust the manufacturer."

"The Huawei case is simple. Networks are about trust—the world doesn't trust China's national companies (rightly so)," tweeted Kyle Bass, Chief Investment Officer at Hayman Capital Management, a Texas-based Hedge Fund.

The United States has mounted a strong campaign to convince countries that Huawei poses a threat, and both Huawei and the Chinese government have worked hard to get countries to include Huawei in 5G rollouts. The issue has placed many countries in the uncomfortable position of having to choose between the United States and China. Who is your best friend?—That is the question people have to ask themselves.

The top global telecommunications equipment vendors offering 5G solutions are Huawei and ZTE from China, Finland's Nokia, Korea's Samsung, Sweden's Ericsson and Qualcomm from the US. The US market is the world's biggest for telecoms equipment and it is now clearly off-limits to Huawei. Australia has blocked both Huawei and ZTE from providing equipment for its 5G network, and New Zealand has blocked a mobile company from using telecoms equipment made by Huawei over national security concerns, but not Huawei directly. Vietnam, China's neighbor, chose Ericsson to build its 5G network.

The European Union told its members that they should limit so-called high-risk 5G vendors, a category that includes Huawei, but stopped short of recommending a ban on the firm. Britain has announced a compromise arrangement that will provide Huawei with some access to 5G contracts not related to sensitive areas in the core of its system. Brazil has announced it will include Huawei in its 5G network rollout despite US pressure, and so has Cambodia, a close ally of China. "It is competition, and other countries are trying to avoid making a choice between Beijing and Washington for as long as they can," says Segal.

Racing to the top

Huawei's advantages in the competition include the significant support it receives from the Chinese government, and also the huge commercial opportunities provided by its home market, from which other vendors are largely barred. China is projected to have 460 million 5G connections by 2025, which would make it the largest 5G market worldwide. It is also rolling out 5G equipment at least as fast as the other providers.

China Mobile has already created the world's largest 5G network by building over 50,000 base stations nationally by the end of 2019. And despite the intense international pressure on its business, Huawei has recently released a highly competitive 5G phone and posted significant revenue growth.

But while Huawei has been roundly denounced by the US as an evil telecom empire, subsidized to the tune of $75 billion by the Communist Party according to the *Wall Street Journal*, it is actually Sweden's Ericsson that is the largest provider of 5G hardware globally.

Segal says he is not convinced that 5G is such an existential threat to the West. "There is no US company that does all the things that Huawei does, and China is rolling out base stations and 5G networks faster. But we are still waiting to see what the services that ride on top of 5G are, and the US will be competitive there," he says. "Also, there are some alternatives, especially O-RAN (Open Radio Access Network), where the US could promote more competition."

O-RAN is a mobile telecommunication system that implements radio access between devices such as a mobile phone, a computer or any remotely controlled machine, and provides connection with its core network. It is also bringing together many of the world's leading telecom providers who want to develop openness in access networks. The founding of the alliance was forged between five main operators—AT&T, China Mobile, Deutsche Telekom, NTT DoCoMo and Orange.

Patents

The key use of 5G's faster network speeds will be to connect billions of devices, from mobile phones to household appliances, cars and streetlights. Over time, experts predict, all economic activity will be influenced by the new 5G infrastructure, accelerating the digital transformation of companies and society.

The rollout of 5G has been described by the European Commission as "one of the most critical building blocks of our digital economy and society in the next decade," as it will be the main driver of the Internet of Things (IoT).

Patents are one of the key factors at the heart of the dispute. Qualcomm's dominance of patents related to 4G telecoms technology almost resulted in the complete shutdown of the Chinese firm ZTE in 2018 when it was denied access to all US technology as a result of accusations that it had broken US sanctions related to business dealings with Iran. Huawei has put a huge amount of effort and money into developing its own 5G-related patents, and has the most patent applications filed, but for now does not hold the most 5G patents.

"Nokia and Korean companies LG and Samsung have the most ETSI-declared 5G patents, says Aaron Wininger, a Silicon Valley attorney and director of the China Intellectual Property Practice at the San Jose, California-based law firm Schwegman Lundberg & Woessner. "While Huawei has the most declared patent families, their granted patents are lower than [Finland's] Nokia, LG and Samsung." ETSI is a European organization that sets industry standards.

The declaration of a patent application is no guarantee that it will be accepted, and many patents are never declared. "Also, it takes several years for patent applications to be examined and granted, so it'll be hard to judge who the true leader will be, although based on numbers alone, Huawei might take the lead eventually," Wininger adds.

US companies Apple and Qualcomm are also important patent players, with Apple having last year bought Intel's modem business. "Qualcomm and now Apple have large patent portfolios in the space," he says.

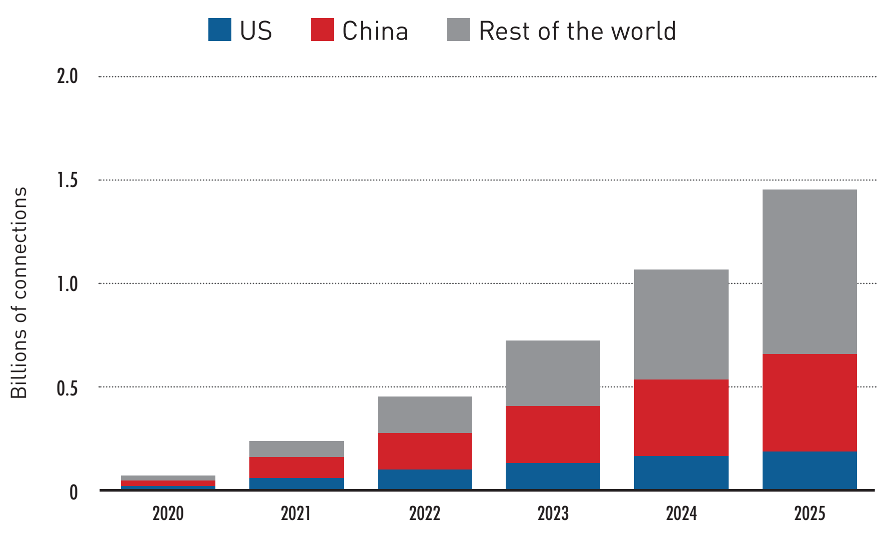
The cost

Telecom providers in Asia, Europe and the US are already marketing and selling 5G packages even though implementation of the service remains slow and spotty, both in terms of infrastructure and 5G-capable appliances and applications. But one way or another, 5G is expected to be widely available in many markets by the end of 2020.

The first mobile phones that support a 5G network have been available in major markets around the world since last September. Apple is widely expected to announce 5G smartphones later this year, with chips supplied by Qualcomm. Huawei and Samsung, on the other hand, began selling 5G-enabled smartphones in 2019.

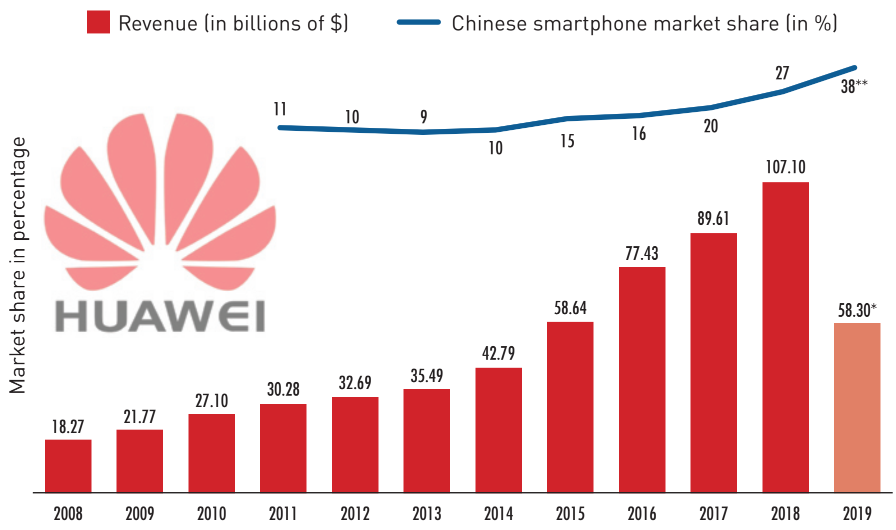
CHINESE CONNECTIONS

China is expected to have a third of the world's 5G connections by 2025



Source: GSMA Intelligence, Belt & Road News

RISE OF HUAWEI | Revenue and domestic smartphone market share of the Chinese tech giant



Converted from Yuan Renminbi * first half of year ** Q2 2019

Source: Huawei, Canalys, Statista

The economics of 5G for telecom companies is still not clear. The current 4G standard was launched in 2009, but many telecom providers have struggled to recoup the massive investment that was needed to create the network. According to a 2018 report by business consultancy McKinsey & Company, mobile operators are therefore approaching the 5G launch with a mixture of "resignation and anticipation."

"They know that it will open opportunities to capture value from new 5G use cases and the widespread adoption of the Internet of Things (IoT)," the report stated. "At the same time, they are keenly aware that they'll have to increase their infrastructure investments in this technology. Meanwhile, operators will still have to upgrade their 4G networks to cope with growing demand. In an analysis of one European country, we predicted that network-related capital expenditures would have to increase 60% from 2020 through 2025, roughly doubling total cost of ownership during that period. This conundrum raises important questions about investment strategy and future profits for mobile players."

Some consumers have also expressed concerns about 5G in terms of 35.49 potential 35.49 spying and health issues. In California, some local authorities have banned 5G based on cancer concerns.

Unlike China, the US has so far not put any government funding into the technology, leaving it to the private sector. The low US unemployment rate is hampering this effort, along with the US government's unwillingness to offer a financial boost.

US Democratic presidential candidate Andrew Yang recently wrote on Twitter: "The race to deploy 5G is on between the US and China—this is a race we must win. I would scale up federal investments and coordination and fund the training and apprenticeship of tens of thousands of technicians."

"It's almost a crisis," Jonathan Adelstein, president of the Wireless Infrastructure Association, recently told the news service Politico. "Because if it's not a crisis today it will be by tomorrow if we don't act now. You can't just invent a new workforce overnight. The lack of a properly skilled workforce is a top obstacle we're facing right now to winning the race to 5G."

China, meanwhile, has pumped billions of dollars in the construction of its own domestic 5G network, according to a report put out by the Center for a New American Security.

"China can much more quickly redeploy labor," Adelstein added. "They have much cheaper labor and much more readily available labor than we do. So, if they make it a national priority, they can use state instruments to quickly ramp up and clear blockages to broadband."

The situation in the United States might be changing, however. In January, Congress debated three bills with bipartisan support aimed at creating a national strategy to build out networks, secure the networks from cyber-attacks and steer international wireless policy.

"All three of these bills are important for securing America's wireless future," Energy and Commerce Committee Chairman Frank Pallone, Jr. and Communications Subcommittee Chairman Mike Doyle said in a joint statement.

What's next?

The US and China signed a trade deal in January under which China agreed to "end its long-standing practice of forcing or pressuring foreign companies to transfer their technology to Chinese companies as a condition for obtaining market access, administrative approvals, or receiving advantages from the government," according to a US government announcement.

But the fundamental competitive nature of the relationship, especially in the area of technology and particularly highlighted by the 5G global rollout, means that the deal is unlikely to solve the problem.

"Assuming China follows through, this would represent an enormous change to Chinese practices both at home and abroad," says Christopher Balding, an associate professor at Fullbright University in Vietnam and a well-regarded China analyst. "Realistically, this is unlikely to change Chinese behavior and will likely be one of the examples used when this deal blows up."

But then in a twist to the whole 5G story, China announced in November that development has already begun on 6G. It's a brave new world.

BLUEPRINT TO SUCCESS

China is consolidating its shipbuilding industry to supersize state-run business and dominate globally

By Cathleen Lechevalier

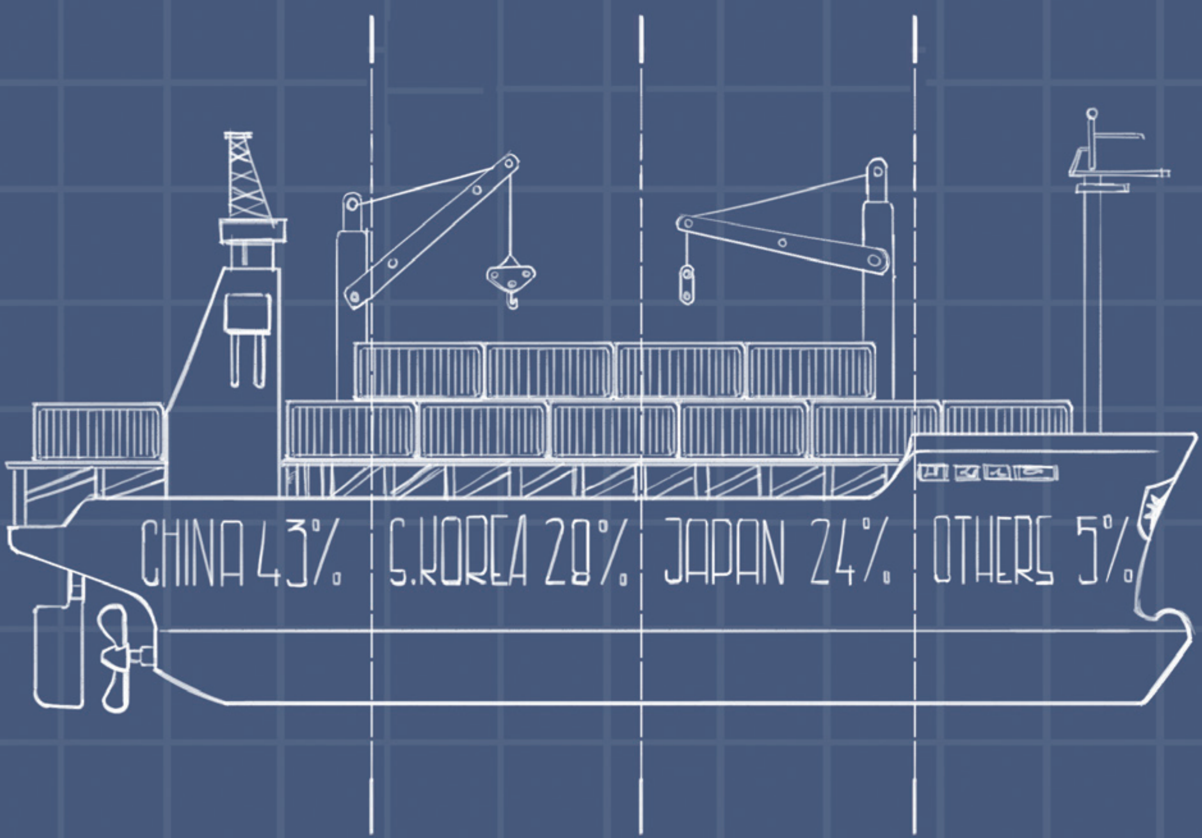


Image by José Luna

China has taken the lead in the global shipbuilding industry, followed closely by South Korea and Japan. Will they be able to hold on to their top spot?

The H1416, the largest container vessel in the world, was launched from Shanghai's Wai Gao Qiao shipyard last year and the world's largest Liquefied Natural Gas (LNG) carrier is currently under construction in the northeast China port of Dalian. In fact, more than four out of every 10 of the large ships sailing around the globe today were made in China.

It appears to be full steam ahead as China aims to take an even greater lead in the world shipbuilding industry. "China is now the world's biggest shipbuilding nation," said Kevin Oates, managing director of *Marine Money*, at the 2019 China Ship Finance and Offshore Summit in Shanghai. But there are also some difficult crosscurrents that China has to overcome if it is to consolidate its hold on the top position in global shipbuilding, including technology where it is in some cases behind, and costs where its main shipbuilders suffer from over-staffing.

In the lead

In 2018, the world merchant fleet totaled 1 billion deadweight tons (DWT)—a measure showing how much weight ships can carry, comprising over 50,000 vessels with a value of $851 billion, according to the Norwegian Shipowners' Association. The vast majority of these ships are general cargo carriers, followed by tankers, container ships, passenger ships, bulk carriers and LNG tankers, mostly built in one of three places—China, Japan or Korea. Europe, the only other serious player, contributes a small fraction of the total number of ships internationally.

China became the leading shipbuilding country in 2017 when it launched ships totaling 23.6 million gross tons, followed by South Korea with 22.6 million and Japan in third place with 13 million. China, Japan and South Korea together produced over 90% of all ships launched in 2017.

In terms of the types produced, China dominates in the production of bulk carriers—China's market share in 2018 was 62% for bulk carriers—while South Korea dominated in oil tankers, with 50% of launched tonnage in that category. The market for containers ships is pretty evenly split between the three countries. And the market is expected to continue to grow.

An age-old industry

China has been a big player in shipbuilding for more than 2,000 years. Chinese ships capable of carrying about 1,000 tons started appearing around 1,000 BCE, and in the early 15th century, oceangoing junks were trading with Southeast Asia, India and even East Africa. But the voyages were halted after the death of the Ming Emperor Yong Le in 1424, leaving a vacuum in global shipping which European sailors filled in the centuries that followed.

The Portuguese and Spanish, followed by the British, the Dutch and the French, sailed the world and created huge empires in an era of colonialism that only ended after World War II. For a long time, the Americans and British dominated shipbuilding, but Japan leapt to prominence in the 1960s, then Korea in the 1980s and China in the 1990s. The key drivers of shipbuilding growth in each case were ample steel production, availability of skilled labor, technological developments and large-scale government support.

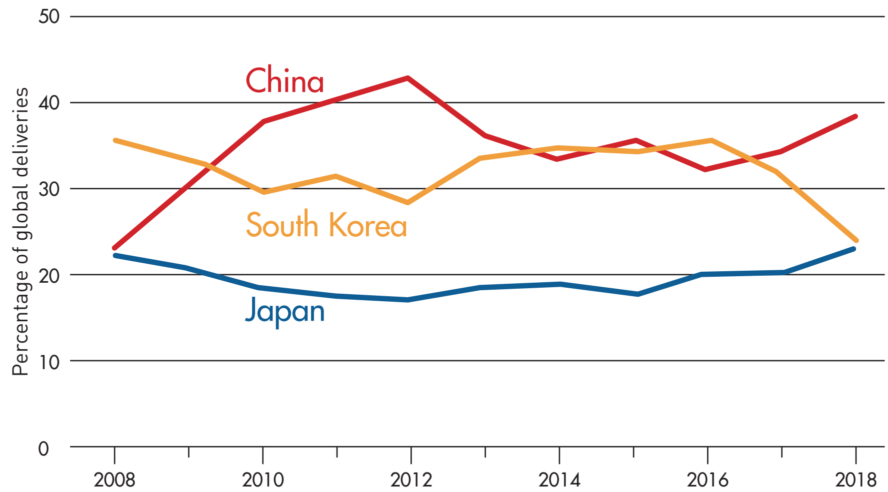
"China has become a leading shipbuilder due to its policy and support mechanisms for the shipbuilding industry," says Nitin Agarwala of the National Maritime Foundation, a think-tank based in New Delhi. "It all began with the US, changed hands to the Europeans, then the Japanese followed by the South Koreans and now the Chinese."

The deep-sea drilling boom has also contributed to East Asian dominance, with China and South Korea providing 80-90% of hull parts for semi-submersible vessels. But the export-oriented nature of the three economies was also a crucial factor.

"Shipbuilding has been a key part of the economy in East Asian countries," says Sara Hsu, associate Professor of Economics at State University of New York. "Because these economies either were or are large exporters of manufactured goods to the rest of the world."

DOMINATING THE SEAS

China is the current leader in global ship deliveries*



Source: *The Economist*

*Vessels of 1,000 gross tonnage and above

China Inc.

While China, as a country, leads the shipbuilding market, the two largest shipbuilding companies in the world in 2019 were both South Korean; Daewoo Shipbuilding and Marine Engineering and Hyundai Heavy Industries. The China Shipbuilding Industry Corporation, state-owned, was the third largest.

After nearly 10 years of planning, Beijing in late 2019 announced plans to merge the country's two largest shipbuilders—Shanghai-based China State Shipbuilding Corp. (CSSC) and the China Shipbuilding Industry Co. (CSIC)—in order to cement the country's position in the industry's international rankings. The merger creates a shipbuilding titan with combined annual revenues of up to RMB 1 trillion ($141.5 billion) and capable of building vessels ranging from container ships and oil tankers to warships.

The tactic of consolidating state-owned enterprises (SOEs) to achieve greater efficiency and sometimes global advantages has been seen in a number of sectors. China began restructuring its SOEs in the 1980s, to introduce greater efficiency into companies that operate at home with the protection of monopoly control of the market. In the 1990s, there was a trend toward breaking up large SOEs into smaller units that to some extent competed with each other, but in the past decade, there has been a shift back toward mega-mergers to control debt, improve management, reduce unneeded production capacity and make the companies more efficient to fight for global market share in their sectors.

Mergers, such as the one being rolled out in the Chinese ship-building industry, effectively flattens competition as it is impossible for ordinary companies to compete with what is essentially the government. This has been a point of contention between China and Europe and the US for many years, because it gives Chinese SOEs a big advantage over private companies.

"Globally speaking, mergers are how the government creates champions to succeed in [the] global market," says Xinling Wang, research manager at advisory firm China Policy in Beijing. "Unlike Western officials, Chinese officials believe big companies equal success. They would pay little attention to issues such as having a monopoly."

It is important to note, however, that China is not alone in consolidating its shipbuilding industry—South Korea has also been planning a merger of Daewoo and Hyundai. Japan lodged a WTO dispute against South Korea in 2019, claiming that large government subsidies and significant state involvement in the industry were contrary to market regulations.

Weathering storms

The shipbuilding merger in China is clearly aimed at ensuring the country can maintain its lead in the global industry and provide a buffer in the face of growing economic headwinds. China's economy has been slowing over the past few years and is expected to slow further, and the industry faces many challenges including shrinking profit margins.

"The policy right now is to strengthen state industries by consolidating them into two or three large companies," says Penelope Prime, founding director at China Research Center, Georgia State University. "In China, the leadership wants to increase control over key industries and resources."

Product specialization and shifts in demand for different types of ships also poses a major problem. "A shipyard, if constructing bulkers, manufactured only bulkers and had no capacity and knowledge to undertake construction of any other type of ship," says Agarwala. After the global recession of 2008, "demand for many types of vessels dried up, forcing shipyards to relearn shipbuilding by changing their product of manufacture."

To protect the industry and save the jobs of tens of thousands of shipbuilding workers, "the central leadership undertook a study to merge and consolidate shipyards that could be merged. In fact, China as a nation has gained immensely by this consolidation wherein shippers and shipping companies have grown in China with shipbuilding and trade originating from China."

But keeping shipbuilding costs down and maintaining the jobs and salary levels of workers are often incompatible goals, and competition had forced some smaller, less efficient shipyards to the point of bankruptcy. The answer has often been for the central authorities to insist on mergers rather allowing companies to go under.

"[The] government is most concerned

with the overcapacity in this industry," says Wang. "Mergers and acquisitions have been pushed by officials as a way for profitable companies to take on their loss-making ones, to prevent massive lay-offs and social unrest."

The growth in global orders over the long term has generally fallen. "As global trade expansion slowed … orders shrank significantly after the global financial crisis in 2008," says Wang. "This general trend has not changed." The slowdown led to the consolidation of production around the world into the hands of an ever-smaller number of ever-larger companies.

"The concentration of output peaked in 2008 and [was] at a similar level in 2018, with 20% of shipyards accounting for 80% of output and, remarkably, 6% of yards producing half the ships in [gross ton] terms," says Stuart Nicoll of Maritime Strategies International, an business advisory firm based in London. There is a "slowdown in new building demand, in part due to uncertainty among shipowners about investing in ships with a 20+ year life expectancy at a time of such rapid change."

Competition in the shipbuilding industry is fierce, with China and South Korea battling it out for the largest portion of market share. South Korea was for many years the top player before China took over in 2017.

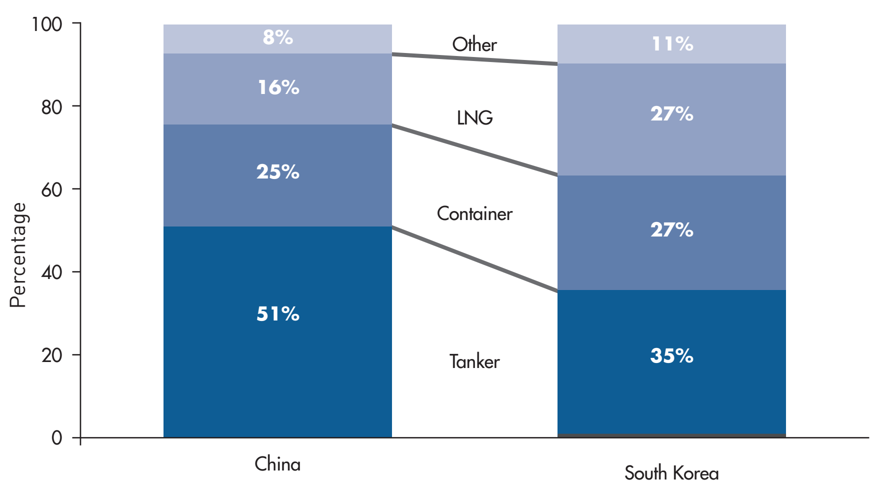
"Demand for ships is driven by ship replacement and requirements for new ships," says Laurent Daniel, shipbuilding expert at the Organization for Economic Co-operation and Development (OECD). "Global GDP (gross domestic product) and international trade, driving seaborne trade, are key factors driving the shipping industry."

China is the unquestioned world leader in many industries, but is not so clearly dominant in shipbuilding due to overcapacity and overstaffing of its companies, technology shortfall and relatively inefficient yard management, all of which have given the shipbuilders in Japan and South Korea a chance to remain competitive. South Korea in particular has developed efficient production processes that keep costs down and leads in the increasingly complex technology integrated into the latest versions of massive ships. The early consolidation of its shipyards into two giants–Daewoo and Hyundai–allowed South Korea to capitalize on its technology advantage ahead of the competition in a wider range of ships.

Shipbuilding is "slow to absorb and move to new technology," says Agarwala. "Newer technologies such as solar power and 3D printing, light weight structural materials … have still not found their way into the shipbuilding and shipping industry due to a lack of human expertise and the inhibition of ship-owners to introduce these technologies due to inherent added costs."

"The challenge for China is to increase production and match the technologies successfully applied by Korea," adds Nicoll. Digitalization is increasing, "manifested by increased remote monitoring of ship machinery to improve reliability. New propulsion fuels, energy efficiency measures, autonomous ships, increasing regulation and decarbonization. These are the watchwords for the industry."

CHINA VS. SOUTH KOREA Types of ships that China and South Korea delivered in 2016



Source: CANSI, KOSHIPA, LEK Analysis

Broad horizons?

Increasing regulatory oversight of ship construction by the International Maritime Organization is having an impact on the industry. "The focus is now heavily on the evolution of more efficient ship designs and, more importantly, the search for low/zero carbon fuels. This issue will dominate the agenda over the next decade or so." This is an area in which China is at a disadvantage. "China's environmental protection has been weak," says Wang. "This isn't a clean industry, though it provides a lot of jobs."

Companies that adapt effectively to these requirements will be in a strong market position, says Nicoll. "Such factors could be significant in terms of effective market power and the impact on price determination. There are opportunities ahead for those companies that can weather the current storm."

And that means China's position as the top player in the shipbuilding industry is not yet secure. Shipbuilding is ultimately dependent on global economic growth, the prospects of which are currently unclear. Pressure to go greener and introduce more advanced technology puts China at a disadvantage, while the large workforces at China's main shipyards, all state-owned, hinder strategic moves into automation and niche technology sectors.

"China needs to embrace these trends to remain successful in the years ahead," says Nicoll.

GOING GLOBAL

Could Anta "Just Do It" and become the world's next Nike?

By Mark Andrews

Image by Raciel Avila

China's national sportswear champion, Anta, has set its sights on becoming the country's new market leader. Will it be able to knock out the likes of Nike and Adidas to reach its goal?

Anta, the leading Chinese sportswear brand, is determined to make itself as well-known and trendy around the world as Adidas and Nike. With it being named an official sponsor of the 2022 Beijing Winter Olympics and President Xi Jinping having been seen wearing the brand, it might be a race it stands a chance of eventually winning.

In the Anta store on Shanghai's renowned Nanjing East Road, sales personnel proudly stress Anta's position as the number one Chinese sportswear brand and pitch their bestselling footwear, a lightweight and low-price sneaker for RMB 369 ($52).

Anta has a 15% share of China's sportswear market, but it is still behind the top global brands: Adidas has 20% and Nike 23%. "During the past November 11 shopping carnival [similar to Black Friday in the United States], Anta achieved RMB 1.83 billion ($261 million) in sales, with 63% growth year-on-year," says Karen Dai, group project director at ISPO, a society that organizes a leading sports fair in Munich each year. "Anta listed number three in the sports category and their kids' line listed number four in that segment."

Anta's game plan is to use the 2022 Winter Olympics to vault over Adidas and Nike to become number one in sportswear in China, a market which is currently worth $43 billion annually, but the company still faces a problem with market differentiation. "Domestically their brand has been well-received over the last decade or so," says Mark Thomas, managing director at sports marketing company S2M Group. "They are in a fairly positive position, but are their products any different to Adidas and Nike?"

On your marks

Anta is a relatively young player in the global sportswear scene. It was established by company chairman Ding Shizhong in Fujian Province in the south of China in 1991. The last few years have seen rapid growth with headline figures for revenues and profits consistently increasing.

This is off the back of a rapid expansion in the sportswear market in China, which is expected to achieve annual growth rates of around 10% both in 2019 and 2020, according to Statista, a business-intelligence portal. Anta in 2018 reported revenues of RMB 24.1 billion, up 44.4% over 2017 .

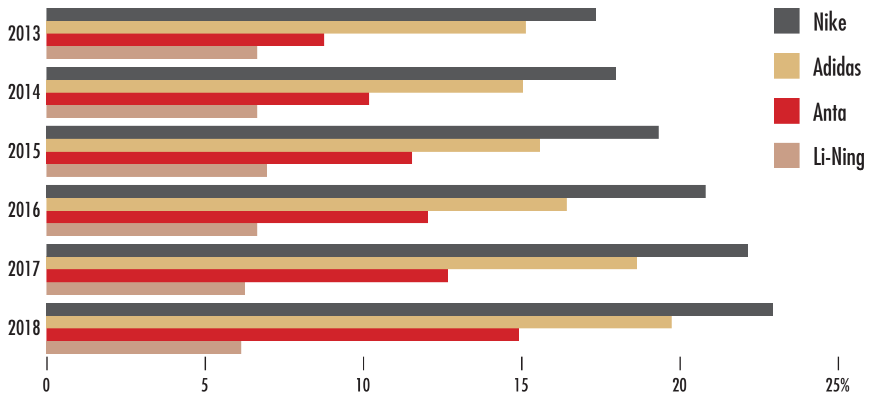
In 2009, Anta bought the rights to the FILA trademark for mainland China, Hong Kong and Macao. The acquisition is a crucial part of the surge in its mainland China business, with an increase in revenues of 79.9% versus just 18.3% for Anta-branded products. FILA-branded goods now account for more than half of the company's gross profit.

"To some extent, it [FILA] is still seen as a cheaper alternative to Adidas and Nike, but Anta has been working hard to create more of an image of a first-choice brand and has been fairly aggressive with its marketing," says Ben Cavender, principal at China Market Research Group. "It has also used brands like FILA to try and move up-market and into street wear." Financially, the latter strategy seems to be successful.

> **Anta has understood how nationalism can benefit them**
>
> Mark Thomas
> Managing Director
> S2M Group

RACING FORWARD

Anta is the leading Chinese player, but is still far behind international brands



Euromonitor International, Bloomberg

FILA is not the only foreign company Anta is using to fuel growth. In 2019, Anta purchased the Finnish company Amer Sports for $5.2 billion, bringing into the fold brands such as Arc'teryx and Wilson.

Another key part of the company's strategy has been building sales through brand attachment via sponsorships that extend beyond local Chinese teams and sport stars to include names such as Filipino boxer Manny Pacquiao and Klay Thompson of the NBA.

The race is on

But the first obstacle to Anta's global ambitions may not be Adidas and Nike but other Chinese brands, in particular Li-Ning, named after the athlete who became a gymnast star at the 1984 Summer Olympics in Los Angeles.

"First of all, Li Ning himself is a celebrity, a well-known sportsman who has won several Olympic medals," says Haru, an online fashion commentator who blogs under the name Haruru. "This is something Anta could never compete with."

He goes on to note that Li-Ning scored a big hit with its range unveiled at the 2018 New York Fashion Week and has garnered considerable street-cred for its cool clothing designs with a modern Chinese feel. Anta today could be seen as being where Li-Ning was around the time of the 2008 Beijing Olympics, of which Li-Ning was a sponsor, although Li-Ning's efforts to capitalize on that event backfired.

"Li-Ning is an interesting case because going back five years, Li-Ning over-expanded its retail footprint in China and tried too hard to copy Nike," says Cavender. "The Li-Ning of 2019 is in a much stronger place. It has embraced being a Chinese brand with unique Chinese design characteristics and has been setting the internet on fire with its street wear."

He notes how Li-Ning had to scale back and re-evaluate before achieving a resurgence. Thanks to those efforts, the company is now booming with profits in the first half of 2019 nearly tripling. Its rise has been reflected in Li-Ning's share price, which has risen around 170% since June 2018, compared to just over 50% for Anta.

Michael Norris, strategy and research manager at AgencyChina, a market intelligence firm, says that although Anta is currently more financially successful, it is Li-Ning that seems to epitomize the concept of "Cool China." "By contrast, Anta's products look and feel more functional," says Norris. Cavender adds, "Anta is seen as a strong option. Still not the first choice for many, but it is definitely now viewed as a quality alternative to foreign brands."

Relay race

Most sportswear companies rely on their own brand, but Anta stands out for its multi-brand approach. Along with the acquisition and licensing agreements already mentioned Anta also has a joint venture with Itochu for the Descente brand, and in 2019 it gained a family of brands from its Amer purchase.

"The multi-brand strategy also brings a growing reputation to Anta," says Dai. "FILA keeps its 80% year-on-year growth rate, and other brands like Descente and Kolon are all running successfully in China."

The multi-brand strategy has helped grow Anta's bottom line, even though it also risks overshadowing the Anta brand itself in the market. Until the Amer Group purchase, Anta was largely dependent on the home market, but with several international brands now under the group's control, it can make bigger forays into overseas markets. The multi-brand strategy has also allowed the company to target different market segments. "Anta is building up their brand matrix, from entry-level sports goods to premium outdoor and ski brands as well as sports equipment from the Amer Group," says Dai.

The China-US trade war, and in particular a Chinese backlash against the NBA in late 2019 related to a politically charged tweet, have helped strengthen Chinese sportswear brands and manufacturers in their home market. This has come at a time of growing national pride and a greater willingness amongst consumers to support local brands.

"Both Anta and Li-Ning have been beneficiaries of the *Guochao* (national tide) trend," says Norris. "Chinese consumers have responded positively to domestic sportswear brands aggressively adopting streetwear influences, while playing up local themes like folklore references or printing "中国" (China) in large characters." He believes that Anta's association with the 2022 Beijing Winter Olympics will, in the short term, help the company to further capitalize on this trend.

"Anta has understood how nationalism can benefit them," says Thomas from S2M. "They've positioned themselves strongly toward domestic athletes, national teams and now as an Olympic sponsor. They're focusing on where there is relevance to their marketing in China because most of their market is currently domestic."

Anta's flagship store in Shenzhen

He notes that purchases by Chinese consumers of sportswear are largely not about using the clothing for sport but are more aspirational. Shifts in Chinese society toward more active and leisure-focused lifestyles have helped build the market for this type of clothing.

While Anta's official sales growth figures have been phenomenal, some market observers, including several short-seller research firms, have identified potential problems in its reported financials. "The numbers behind Anta's growth story have been questioned," says Norris. "Blue Orca, GMT Research and Muddy Waters have each published research interrogating Anta's financial statements."

It is to some extent unclear how the two brands, Anta and FILA, balance the two company's accounts. FILA is certainly much more visible in the market, especially in first-tier cities. "I think the answer is one of scale," says Thomas. "FILA is a genuine global brand, whereas Anta is still pretty much restricted to Chinese domestic markets. Most of their [Anta's] global growth will come from acquisition rather than the organic growth of the Anta brand itself."

Running the world

Anta is aiming to be not just a competitor to Adidas and Nike at home but also around the world, but few Chinese companies have so far managed to make the jump to become globally competitive. One of the only ones to have done it organically is Huawei while most others, including Bytedance, Geely and Lenovo, have done it via acquisitions. In many ways, Anta's approach is like that of automaker Geely, which buys existing brands and operates them as separate entities.

"Outside the core brand, Anta's overseas acquisitions may prove more successful in winning over European and North American consumers than a fully-fledged market entry," says Norris.

Achieving success internationally as well as domestically also has to do with corporate management. According to Thomas, part of the reason Li-Ning failed in its first attempt to go global was that it tried to do too much too quickly without the product lines and quality to support it. Anta, he believes, is in a far better position now than Li-Ning then.

"What (Anta founder) Ding Shizhong understood is that you may have a good idea or concept but you need the right people in your business to run it," says Thomas. "And he has employed a lot of very good, competent seasoned professionals in this market." One notable early appointment was James Zheng, who formerly ran Reebok's China operations, as president in 2008.

The finishing post

Although Anta seems to have positioned itself well, there are still many hurdles ahead to achieve global success. The company is likely to benefit in the run-up to the next Winter Olympics, but it needs to be careful not to repeat the mistakes of Li-Ning and make sure it masters the mainland China market first. "Companies like Nike are effectively marketing organizations that happen to sell shoes, so it is very difficult for an outsider to break into that top position in the market," says Cavender, noting that it may take some time for Anta to be in a position to compete globally.

Through acquisitions, the company has made far greater inroads into the overseas sportswear markets than its Chinese competitors without having to bear the associated marketing costs of trying to take the Anta brand itself global. Tempering the future success of this approach is also the increasingly stringent Chinese government controls on overseas acquisitions above $50 million. However, Anta's Amer Group purchase was subject to these controls and was approved, and so these restrictions may not be unsurmountable.

There is now already some knowledge of the Anta brand overseas thanks to sponsorship of athletes like Klay Thompson, but many of these deals, such as with his associated KT shoe line, have been about riding the popularity of the NBA with Chinese fans. The recent NBA tweet issue shows that such associations can be problematic for a Chinese sports brand, both at home and abroad.

Anta has a plan and they have the determination but getting into the lead position is not going to be easy for two main reasons—the general global perception of Chinese products as being low-quality goods and the deep consumer loyalties attached to Adidas and Nike.

If Anta's ambitions of becoming a global household name are to be realized, it is going to be a long road. "They're not ready for it yet, maybe in five to 10 years' time," says Thomas. "First, they don't have the revenue to get one of the marquee athletes. Adidas and Nike have so much more to spend, and secondly they don't have the distribution channels to benefit from it."

CKGSB RESEARCH REPORT

Applying Business Logic to Philanthropy: Adream Foundation

Structured like a business and operated on commercial lines, Adream is powered by the language of efficiency, and the use of business matrixes and financial models

Supervising Professor: Zhu Rui

Case Researchers: Cui Huanping, Zhu Yunhai

It may not have been the goal of Adream Foundation's founders, Pan Jiangxue and Wu Chong, to rework the philanthropic relationship between donors and recipients, but that is what they ended up doing. Their basic aim was to improve educational quality in China's countryside and inner cities, but given their backgrounds, it was perhaps inevitable that these two financiers would look to inject a dose of efficiency that was sorely missing in China's charity sector when they started in 2007.

Adream found a way to make a mark, not just by scaling up nationwide efforts toward an admirable cause, but also by repositioning philanthropy as a successful and trustworthy financial proposition in a country full of civic potholes. They inherited a linear charity model and invented an integrated resource platform, turning donors, local governments, schools and teachers into impassioned "dream partners."

In many ways the Adream charity operates like a regular company. It offers a range of products, including custom-designed classrooms known as "Adream Centers," lesson plans that form the "Adream Curriculum," a training program for teachers called the "Adream Guide," and "Adream Box," an online support platform for teachers. In the years since its founding in 2007, the foundation has set up 2,973 Adream Centers around China, serving 3 million plus students and teachers.

How Adream started

Before founding Adream, founders Pan Jiangxue and Wu Chong both served as senior executives in the world of finance. In 2007, they resigned from their posts to establish a charity based on their core belief that educational quality was more important than educational hardware. They wanted to enhance the student learning experience and upgrade the students' abilities, attitudes and knowledge in order to enhance the young people's prospects beyond the school gates.

In October 2007, Pan and Wu incorporated the Cherished Dream China Education Fund in Hong Kong, and initially worked with the Shanghai office of Project Hope, a state-backed public service organization, but it proved a mismatch. Project Hope provided funds to local foundations to set up Hope schools and stayed away from construction and operations themselves. The model favored by Pan and Wu involved close monitoring how the money was spent and heavy involvement in project operations.

The Adream Foundation had three guiding principles: Helping people help themselves; using management and financial models, and building effective, professional and sustainable charitable operations.

> In many ways the charity is like any other company in this field

Building a standardized process

Having decided to provide quality education to marginalized parts of China, the Adreamers then considered the "products" to be offered. They originally wanted to set up libraries, but found that remote libraries were hardly being used while classrooms were in strong demand. So, to maximize their value, the basic units of Adream's quality education plan was to build centers equipped with the internet, computers, books and multimedia devices.

These first Adream Centers proved hard to set up in remote areas. The Foundation sent designers to each site to design each center individually, and the centers were then constructed with the help of local education bureaus. But bidding irregularities and problems with the delivery of customized furniture to remote villages made them think again.

In 2010, a more effective construction process was created by which centers have a standardized design and construction, with installation tendered out. School leaders fill in an online application form and provide a floor plan and photographs from three specified angles, and the system generates procurement lists according to a standard template. The central logistics system transports ready-to assemble furniture to the school and the school finds and pays for a construction team to assemble everything using Adream Foundation's construction manual. Teachers and students all get involved, and the Foundation only rarely has to step in to chase suppliers.

Standardization of the procedures created operational efficiency, cost optimization and economies of scale. From 2007 to 2016, the average construction period for an Adream Center fell from 180 days to 27 days. Costs were cut from RMB 110,000 ($15,800) to RMB 57,000 per center. By 2016, 448 centers could be built every year. In 2007, the number had been only two.

Starting in 2009, Adream also partnered with third parties to develop its curriculum. This included East China Normal University's Institute of Curriculum and Instruction and the Hong Kong Jockey Club.

By 2010, the Adream Curriculum had been significantly upgraded, but teachers were still not devoting enough time to teaching Adream courses, and a points-based incentive system was adopted. Teachers could submit reports and comments on the Adream courses and earn credits based on the number of classes they held and the quality of course materials. National rankings were made public, with accumulated credits exchangeable for cash, training, travel and other rewards.

To provide social incentives for teachers too, the Adream Foundation developed Adream Box in 2012 to allow teachers to post pictures of their classes, as well as upload and download course materials. The platform also lets teachers contact each other for advice and assistance. The more active teachers are on the platform, the more points they accumulate. In this way, hundreds of classes across the country can be monitored on a daily basis and course data can be collected and analyzed.

With its network of schools and partnerships with 600 education bureaus nationwide, Adream had succeeded in scaling up, thereby cutting the costs of replication and making the project more attractive to large donors.

Creating partnerships for change

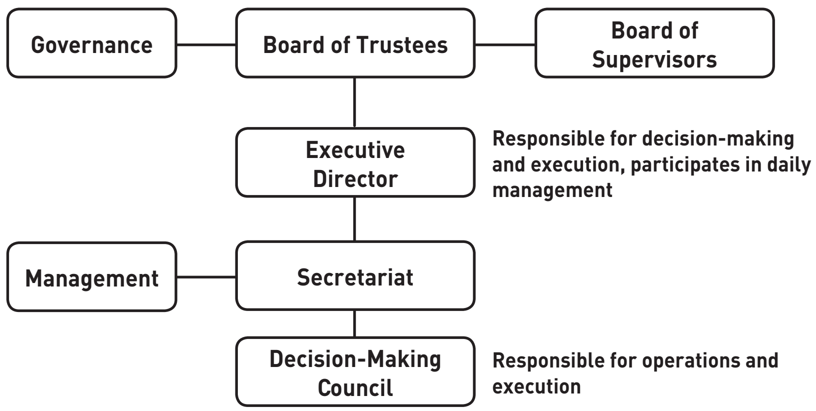
Initially, donors would identify a region they wished to contribute to, Adream Foundation would ask the local education bureau to recommend a school and Adream would work with the school's principal to get the center established. At no stage was there any real screening or evaluation process, and the charity decided to see what would happen if they made this an "organization-to-organization" model. Today, education bureaus make a list of local schools most in need of support. Adream Foundation evaluates them in terms of facilities, teaching philosophy and willingness to dedicate time to the Adream Curriculum.

Adream Foundation then turns its attention to its main source of donations: companies. For partnerships to work, donor companies needed to participate fully. "We want the companies we cooperate with to identify with our philosophy and be able to promote Adream Centers in a sustainable way, rather than just pick donation targets according to poverty indices," said Hu Bin, Adream Foundation board director and former secretary-general. They also have to be ready to commit. "We need each donation to cover the construction of five to 10 Adream Centers to reach economies of scale."

The charity also had to become more flexible about funding models. In addition to the direct funding model, some Adream Centers have been jointly funded by education bureaus and schools, and some by just the schools alone, with Adream coming into provide follow-up services. In 2016, of the RMB 94.75 million ($13.6 million) raised by Adream, government contributions accounted for as much as 24%.

Adream Foundation is no longer a one-way supply channel. It has become a resource integration platform and a decentralized ecosystem, allowing donors, education bureaus, schools, teachers and volunteers to become "Dream Partners"

LIKE A BUSINESS | Adream Foundation's organizational structure



Source: Adream Foundation

and work together to offer competency-based schooling.

Business innovation grounded in corporate governance

"Adream is driven by a strong sense of mission and values, and we operate in a professional way that revolves around the value of quality education," said co-founder Wu Chong. "As a result, we have formed a governance structure similar to that of an enterprise, using corporate vision and tools to resolve allocation problems in the face of limited resources and unlimited demand."

At Adream Foundation, a board of trustees sets strategic objectives, establishes policy and makes investment decisions. The chairman and the secretary-general direct the Secretariat to manage day-to-day affairs. The board of trustees oversees three committees, for Audit & Compliance, Fundraising and Strategy. As Pan Jiangxue said, "Only open, transparent, professional and efficient operations can secure the trust and sustained support of donors and the public. This is the same as the fiduciary duties of financial institutions."

The Foundation developed a functional organizational structure to support Adream Centers, curriculum development, teacher training and post-maintenance.

Adream also set up a multi-level authorization process, with clearly defined levels and periods of authorization. Proposals are submitted by the management team for the Board's approval. In practice, most proposals are implemented only if there has been a unanimous vote in their favor. Corporate governance structures took shape as Adream developed, with ongoing adjustments along the way.

Adream Foundation's impact

The Foundation set out to run a transparent charitable organization, an ambitious yet timely idea in a country where the level of trust in civil society organizations was low. It has become the first charity in China to publish annual reports using the same transparency standards as publicly-traded companies.

Adream has attempted to implement quality education offerings across China using an operational model that was borrowed from the business world. The charity raised RMB 570 million between 2008 and 2017. It built 2,973 Adream classrooms, and brought more than 3 million teachers and students in under its umbrella.

Like a business, Adream has developed internal appraisal standards that measure two sets of KPIs: those followed by each department, and those developed to evaluate the virtual teams operating across China. The latter are evaluated by class opening rates, fundraising targets and student attendance.

In November 2013, Adream launched the Adream Center evaluation project. As part of this, it hired a team of assessors from the Center for Chinese Agricultural Policy, Chinese Academy of Sciences, Center for Chinese Agricultural Policy, Peking University, Center for Experimental Economics in Education, Shaanxi Normal University, and the Rural Education Action Plan 13 team from Stanford University to conduct a third-party independent report into the impact of Adream Centers on students and teachers. The team selected 166 primary, junior high and comprehensive schools from 13 districts and counties of Shanxi, Shaanxi, Hubei, Guizhou and Fujian. Among these, 85 were participant schools and 81 were selected as a control group. The assessment team also conducted a three-year follow-up survey.

The results showed that Adream Courses have had a positive impact in the following ways: First, Adream participants have scored higher than those in the control group schools. Second, attitudes toward the function and value of money were found to have improved due to participation in Adream Wealth Management courses, through which students learned and practiced personal financing. There was also a significant improvement in attitudes with regard to the role and value placed on rights. The Adream Curriculum and life skills learned during the courses have allowed the students to experience the function of rights and change their way of thinking about them.

Despite its successes and praise-worthy expansion, the Foundation has been hampered by various shortcomings and external challenges. As a pioneer, this was perhaps inevitable. Importantly, though, Adream Foundation is well aware of its issues, and is actively seeking solutions to them in line with the vision of its founders using its increasingly responsive and evolving corporate governance system.

This is a summarized text from the full case study, which can be found in the book China in Transition, *published in 2019.*

CKGSB BUSINESS CONDITIONS INDEX

Declining Optimism

Companies in China are still not optimistic about short-term development

The BCI is directed by Li Wei, Professor of Economics at the Cheung Kong Graduate School of Business

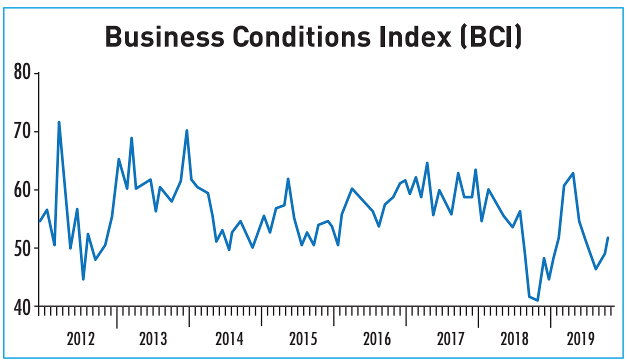
This month's BCI shows a range of complementary ups and downs with three issues dominating.

First, is recent market inflation. This can be chiefly accounted for by the sharp rise in the price of pork, and the knock-on effect on other meat prices, including beef and lamb. Second, is the investment environment, with a significant decline in the BCI investment index. Third, we need to consider the inventory index, because it rose by 5.5 this month to 47.7, just a short step from the 50-point confidence threshold. The long-term performance of the inventory index has been weak, mostly below 50, indicating that surveyed companies have obvious inventory accumulation pressure.

Introduction

Since June 2011, CKGSB has conducted a monthly survey of executives about the macro-economic environment in China called the Business Conditions Index (BCI). The BCI is skewed toward small- and medium-sized enterprises (SMEs) that are competitive in their industries, and so provides a reliable snapshot of business sentiment among successful private companies.

The CKGSB BCI is a set of forward-looking diffusion indicators. The index takes 50 as its threshold, so a value above 50 means that the variable that the index measures is expected to increase, while a value below 50 means that the variable is expected to fall. The CKGSB BCI uses the same methodology as the PMI index.



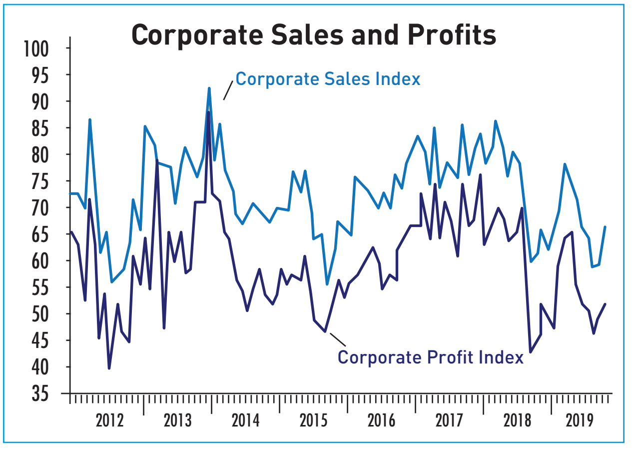
Key Findings

- The CKGSB BCI registered 51.2 in October, a slight improvement on last month's 48.1, and above the confidence watershed of 50.0.
- A significant decline of the BCI investment index has made the investment environment a matter of concern.
- A sharp rise in the price of pork, and the knock-on effect on other meat prices, caused recent market inflation.

Analysis

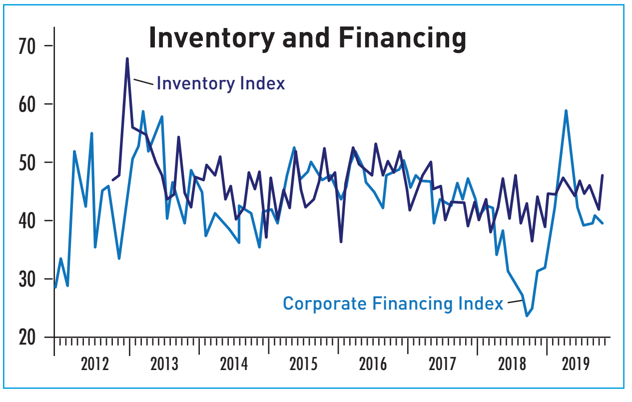
The CKGSB BCI comprises four sub-indices for corporate sales, corporate profits, corporate financing environment and inventory levels, three of which measure future prospects and one, the corporate financing index, which measures the current climate.

In October, three rose and one fell. The corporate sales index leaped from 59.9 to 66.0, and the corporate profit index rose from 49.2 to 52.5.



October's corporate financing index slid back down from 40.8 to 39.2. The inventory index rose from 42.2 to 47.7.

Looking at prices, the consumer prices forecast fell from 53.5 to 50.0, while the producer prices index rebounded this month from 35.9 to 45.1.

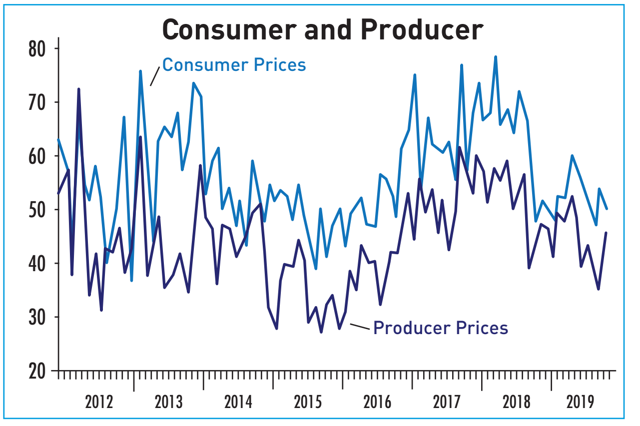


We now turn to investment and recruitment. These two indices have been consistently at the more confident end of the scale since the BCI began. In the past few months, however, both have weakened, especially the recruitment index. In October, the investment index was down again from 62.0 to 60.1, but the recruitment index bounced back from 56.8 to 59.

Conclusion

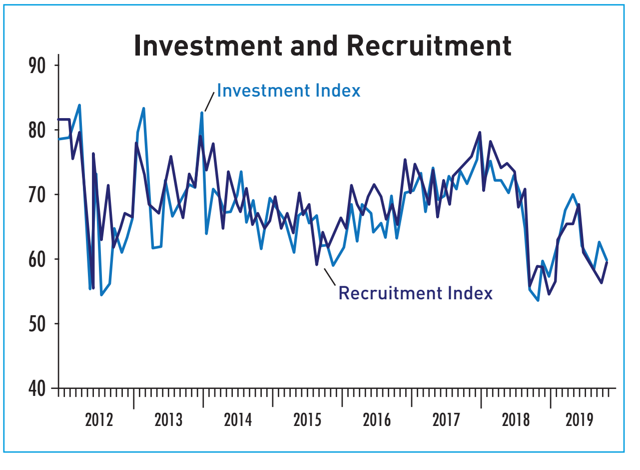
To conclude, at present, whether for consumer or producer products, prices are moving in a relatively stable direction. But using the current data to determine whether this will turn inflationary or deflationary will require more research.

It is important to consider the investment environment due to a significant decline in the BCI investment index. It should be noted that our survey covers students and graduates of CKGSB, most of whom are private entrepreneurs, so this investment outlook mainly concerns their business environment. Given that private firms are the most active and hard-working in the Chinese economy, if they cool down on investment, it means they are not feeling optimistic about short-term development.



In fact, although the environment of private entrepreneurs has not changed substantially, it also has not deteriorated much. For example, the corporate financing outlook has stabilized at around 40 since June, as have employment costs and total costs, having recently fallen below 80—a positive change for business operations.

Given such circumstances, companies are still not optimistic about the future, and keep their purse strings drawn tight instead of investing. Although the corporate investment outlook has not fallen much to date, it is still something that needs to be paid attention to.



When it comes to the inventory index, in a normal market economy, inventory is maintained in case of emergency, but in China, such a large backlog cannot be explained by just one or two factors. The inventory problem may well be an expression of other issues, such as overcapacity. It may only be possible to solve the inventory issue when China's long-awaited economic reforms are finally in place.

CKGSB BUSINESS SENTIMENT INDEX

A Lack of Confidence

With the escalation of the trade war, overall confidence in the current economy is lacking, and the industrial economy is still set to face greater uncertainties

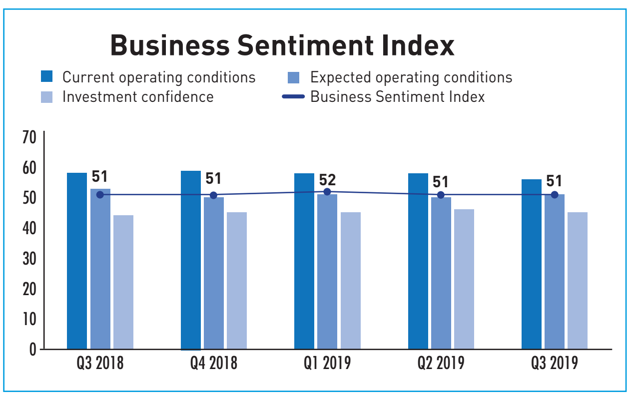
The BSI project is directed by Gan Jie, Professor of Finance at CKGSB

The CKGSB Business Sentiment Index continued to expand slightly in the third quarter of 2019. Real output, on the other hand, contracted, as reflected in production, electricity consumption, domestic and foreign orders, which are mainly driven by private, small and non-state enterprises. Moreover, investment was weak, dropping to its lowest level in four years. Overcapacity was more serious, seeing its highest diffusion index since the survey was launched five years ago.

Introduction

This report is based on data collected from our quarterly surveys of around 2,000 industrial firms in China. Conducted through telephone interviews, this study is now in its fifth year, having launched in the second quarter of 2014. If we exclude the agricultural, real estate and financial sectors from China's gross domestic product (GDP), the industrial sector accounts for 50% of the non-agricultural economy.

Our survey design ensures that our sample fully represents industry, region and company size. As a result, we are able to construct business indices that are, to the best of our knowledge, the most informative ones available about the Chinese economy.



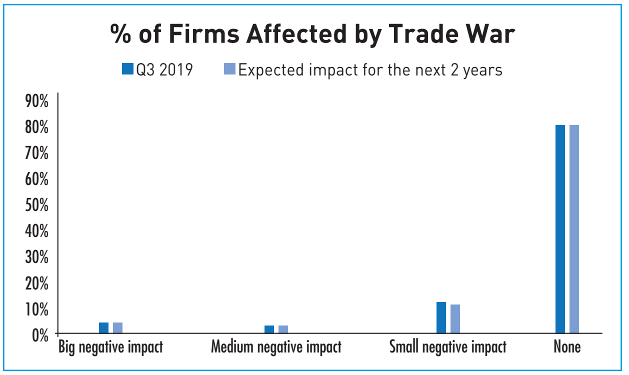
Key Findings

- Business Sentiment maintained a slight expansion, but investment and real output were in contraction.
- The impact of the China-US trade war on the manufacturing sector was the same as that for Q2 at 19%.
- Weak demand is still by far the biggest challenge facing the industrial economy, with 60% of firms surveyed in Q3 citing a lack of orders. Costs were again listed as the second biggest issue, with raw materials and labor costs cited by 20% and 15% of firms respectively.

Analysis

Similar to the previous quarter, this quarter's expansion was mainly driven by state-owned and foreign investment, with diffusion indices of 58 and 55 (compared to last quarter: 61 and 55).

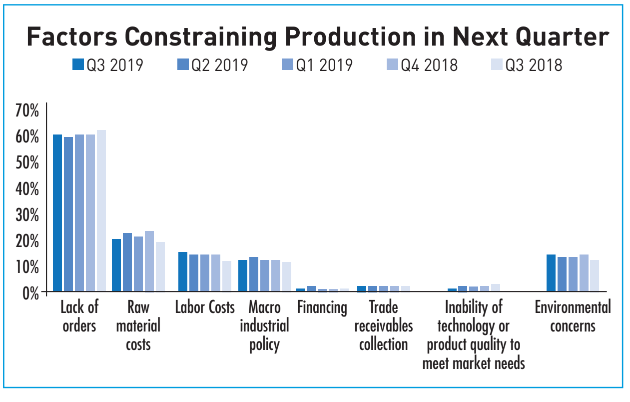
Private firms—the majority of industrial firms—stayed flat (diffusion index: 50). And although the overall Business Sentiment Index expanded, indicators reflecting real output,



including production and electricity consumption, showed a small contraction (index 45-48; last quarter: 46).

Investment was still weak, with the proportion of firms with expansionary investments further declining from 2% in Q2 to 1% in Q3, the lowest in four years.

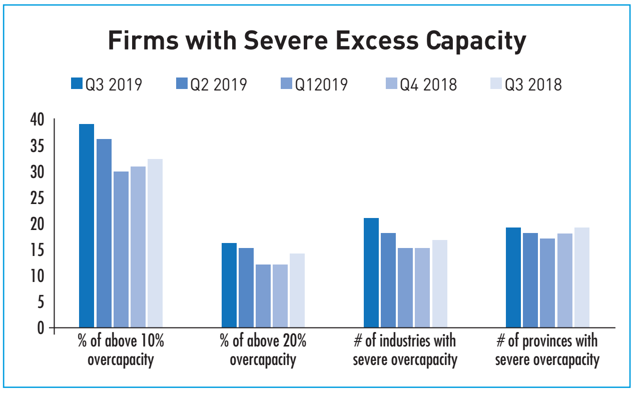
The impact of the China-US trade war on the manufacturing sector was the same as that of Q2. The proportion of affected firms was 19%, while the proportion of enterprises with greater impact was at about 4% (last quarter: 3%). Some 36% of export-sector firms (accounting for 32% of the sample) were affected, with 9% of them being greatly affected. It is estimated that the proportion of enterprises greatly affected will be about 4% over the next year or two.



The top five most affected industries included textiles, furniture manufacturing, wood processing, manufacturing of stationery and educational products (culture and education, industry and beauty, sports and entertainment) manufacturing industry and clothing, with from 33% to 41% of firms in these industries being affected.

Weak demand is still by far the biggest challenge facing the industrial economy, with 60% of firms surveyed in Q3 citing a lack of orders. Costs were still listed as the second biggest issue, with raw materials and labor costs cited by 20% and 15% of firms respectively. 12% of firms cited macroeconomic and industrial policies as limiting factors while 14% of firms cited environmental concerns. Financing was not found to be a bottleneck, with only 1% replying that financing was a limiting factor, a finding consistent with past surveys.

In 2019 Q3, 73% (previous quarter: 71%) of the firms surveyed reported oversupply in the domestic market, with a diffusion index hitting a historical high of 87. The proportion of enterprises with excess capacity of over 10% and 20% also



increased, to 39% and 16% respectively (last quarter: 36% and 15%).

We categorize an industry as having severe excess capacity if more than 10% of firms in the industry report an excess capacity of more than 20%. There are 38 industries and 31 regions in total. In Q3, there was an increase in the severity of overcapacity compared to the previous quarter.

It is also worth noting that the overcapacity situation in the international market was substantially better than in the domestic market, with the diffusion index 9 points lower.

Conclusion

The biggest challenge facing the industrial economy was still overcapacity, with the diffusion index hitting a historical high. Financing was still not the main factor restricting the development of firms. Related to government policy, lending to small businesses improved significantly.

With the escalation of the trade war, overall confidence in the current economy was weak, with a substantial amount of economic uncertainty going forward. Policy should focus on promoting long-term growth, while also taking short-term growth into account. Broad monetary and credit policies should focus on preventing increased financial risks. A lack of core competitiveness has trapped industries in overcapacity for a long period of time. While previous supply-side reforms achieved initial results, the trade war caused industries to return to a situation of insufficient demand and overcapacity. Only through scientific and technological innovation, as well as building long-term competitiveness, can the industrial economy be revitalized.

THE POWER OF PETS

Chinese pet owners are increasingly spending money on products and services to improve the lives of their beloved animal companions

By Mable-Ann Chang

Pampered pooches have become beloved members of many Chinese families, and the pet care industry is booming as a result

According to the old joke, Chinese people love dogs, particularly stewed. But it's a joke that no longer applies—dogs as pets have become the latest fad across China and this has given birth to a huge pet industry.

Dogs in urban China, mostly of small varieties, can be seen wearing tiny shoes, being pushed around in prams and sporting tailored outfits. Many of the dogs eat almost as well as their masters. Pet stores, dog breeders and even mobile app companies all doing great business.

Xinyi Liu, a 29-year-old customer service consultant, wakes up every morning to find her dog's wet nose pressed up against her cheek, and before having breakfast herself, she feeds him and takes him outside for some fresh air.

"I love my dog and see him as a family member," says Liu, speaking to *CKGSB Knowledge*, "He's been a wonderful companion to me for the three years that I've had him."

A passion for pooches

China's overall retail sector is currently weak with the country facing a slowing economy, but pet stores are booming as consumers look to spend on what makes their canine partners happy. The value of the pets' and pet-related goods' market has more than tripled over the last five years, according to the *Nikkei Asian Review*.

A report from business consultancy Frost & Sullivan said the number of pet-owning households in China increased from 69.3 million in 2013 to 99.8 million in 2018, showing an increase of 43.9% over the past five years. And is now worth over RMB 172.2 billion ($25.02 billion) according to CBNData.

At the end of 2018, the report said, China had approximately 67 million pet cats and 74 million pet dogs, and annual sales of live pet cats and dogs totaled over 5 million, excluding adopted and donated ones. In addition to cats and dogs, Chinese pet owners also keep 110 million other creatures as pets, including 84 million fish, 9 million birds, 7 million reptiles and 7 million rodents.

Young women are leading this relatively new pet trend. Women in general account for 60% of online pet product sales while young people under 30 make 40% of online pet-related purchases.

"The pet industry will continue to grow," says Noriko Tamura, co-founder of animal rescue center SCARS in the eastern city of Wuxi. "Younger people will carry this trend into the future and probably pamper their pets more than was the norm in the past."

Pet food, including staple foods, snacks and health products, is the largest segment in the pet market with revenues in 2018 of RMB 38.3 billion ($5.5 billion). Vet care and live animal sales revenues amounted to RMB 119.5 billion, while pet supplies and pet services including grooming and boarding totaled RMB 30.7 billion Industry experts estimate that by 2023, the Chinese pet industry will be worth RMB 472.3 billion.

Pets have been a part of the Chinese landscape since time immemorial, but several trends are contributing to the upgrade in the status of pets—new urban lifestyles centered on apartments, smaller families, rising prosperity and loneliness.

A longstanding companion

Dogs have long been an accepted source of meat in some parts of China, and the traditional Chinese viewpoint would be that there is little or no moral difference between eating a pig and eating a dog. There are still some restaurants that serve dog dishes and markets that offer the meat, although far fewer than there used to be. The Chinese perception of the basic role of a dog, especially among young urbanites, has shifted in the past two decades from working animal or dinner to life companion.

"In the past, people didn't really care about dogs that much, even though most families in the countryside would have a guard dog," says 25-year-old pet owner Hui Sun. "But now I think more and more people consider their pets as friends or family members."

Last year, a man in the city of Yibin in the western province of Sichuan caused a huge stir on Chinese social media when

> **I see many older people with pets, and they seem content to have a companion**
>
> Noriko Tamura
> Co-founder
> Animal rescue center SCARS, Wuxi

he adopted a dog and then cooked and ate it. An annual Dog Meat Festival is held each June in Yulin, Guangxi province. An estimated 10,000–15,000 dogs are consumed, but it has become a chaotic event as animal charities, celebrities and even wealthy Chinese locals swoop in to rescue as many dogs as possible.

Archaeological evidence indicates that the early ancestors of the modern Chinese were already keeping dogs during the Neolithic age, more than 7,000 years ago. Scholars and the wealthy of the past 2,000 years would more often raise canaries and goldfish, dogs were simply not a part of their world as they were in Europe. The concept of owning dogs and cats as pets in modern China is in fact basically an imported concept, and a modern import at that. "This newfound love for dogs is an effect of Western media," says Tamura.

Pampered lives

China's massive pet industry is concentrated in the biggest cities, and includes pet stores, groomers, photography studios, pet hotels, pet-sitting services and even pet funeral services. In short, nothing is too good for the beloved cats and dogs of the growing middle class and wealthy. There are lavish cat hotels that offer four-legged guests in-house gardens and spas with distilled water in their rooms.

"In the past three years, the number of new pet stores in Beijing has grown by 60%," said Lily Tian, the editor of *Pet Industry White Paper*, published by Pet Fair Asia and Doumin.com in 2019.

"Before coming here, I didn't think Chinese people were very interested in having pets," says Arielle Stenhouse, an Australian student in Shanghai, who typifies many foreigners' views of China's relationship to animals. "When I first arrived, I was shocked by how many people were walking around with mini poodles and other well-groomed designer dogs in coats and boots."

The commercial side of the pet market is domestically driven, but there are opportunities for foreign brands as well. According to consultancy Daxue Consulting, three foreign companies have 70% of the pet food market share in China. Effem Food, which is part of Mars Company, holds 26% of the market, and Nestlé Purina PetCare and Royal Canin both hold 21%.

Unlike pet owners in Europe and the US, who prefer to buy pet products offline, online purchasing has become the major retail channel for Chinese pet owners because of convenience, quality guarantees, the wide range of products, plus discounts and promotions.

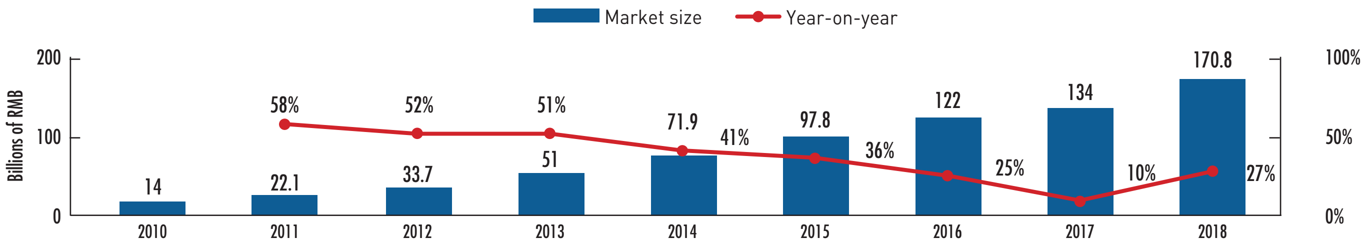
"I buy all of my dog's food and toys online," says Liu. "It works out to be so much cheaper and I also don't have to carry kilograms of food up to my apartment as it's delivered straight to my door."

Chinese pets can live extravagant lifestyles, and even after they eventually die, they are increasingly enjoying unrestrained send-offs with devastated owners sometimes paying more than $1,000 for funeral services. Heartbroken owners even pay up to $53,000 to get their beloved pets cloned.

The dark side to the booming pet industry, however, is the supply chain of breeders that are struggling to keep up with demand for puppies of certain species. Animals bred on pet farms often live in poor conditions and

A man carries his pet dog on his bicycle in Beijing

PET PURCHASING POWER | As pets become more popular, China's pet industry market is growing



Source: Daxue Consulting

are frequently not immunized. Inbreeding is also a major problem.

Cai Chunhong, a social commentator who has long followed animal protection issues, told the newspaper *China Daily* that traders give "problem animals" injections to perk them up and then groom them to ensure a quick sale. Once they arrive at their new homes the effects wear off, and the animals can die within a month. "The new owners think they've failed to look after their new pet properly, but really they've been misled by the sellers," said Cai.

"I was in a night market in Beijing once and saw dogs for sale, but I didn't go and ask about the price because I felt sorry for them," says Sun. "But there were still many people in line showing an interest."

Dog-raising and trafficking is not covered by any specific laws, so the markets operate without oversight. In a recent report on China Central Television, both a local market regulation bureau and agricultural veterinary station said that the pet market falls outside their respective jurisdictions.

Man's best friend

The preference for dog breeds is in flux. The familiar native Chinese breeds, such as the Chow, Shar-Pei and Pekingese are losing out as pet owners have developed a preference for foreign breeds such as Pugs and Poodles. It is somehow felt that owning foreign breeds of dogs is a status symbol associated with affluence and societal position.

"Pets have become a status symbol over the years," says Tamura. "But there also many people who just love animals in general, and own pets that are not just for show."

Sun agrees, but adds, "Some people want to be fancy and purchase special breeds. It has become a sort of competition between pet-owners to see who can have the most expensive and rare breeds."

The psychological motivations behind the growth in pet ownership are many and complex. *Pet Industry White Paper* by Pet Fair Asia and Doumin.com published in 2019 reported that almost one in five pet owners surveyed said they had bought a pet for mental support—a rise of almost 20% compared to 2018. Chinese government statistics confirm that depression and anxiety rates are rising across the country, particularly in cities and amongst the older generation.

But Tamura says this does not match with her experience, "I see many older people with pets, and they seem content to have a companion," she says. "Younger people on the other hand seem to see their pets as an accessory or a means to avoid loneliness."

Sun observes that, "Young people have a tendency of not wanting to get married these days, and so they get a pet to help combat the loneliness of living by themselves."

The stereotype is of Chinese pet owners being younger single urban dwellers. But Frost & Sullivan pointed out that 61% of pet owners are married, suggesting that although pets can keep single people company, a stable economic foundation is still needed for raising them.

Regulations

In the mid-1960s, during Chairman Mao's Cultural Revolution, pet dogs were banned on the grounds that they consumed too much of the nation's limited food supplies and were symbols of Western capitalist elitism. But during the 1990s, restrictions on keeping dogs as pets in the cities relaxed.

In Beijing, ownership of one dog per household was permitted from 1994 with payment of an annual RMB 5,000 ($708) administrative fee. In 2003, the administrative fee was reduced to RMB 1,000 per year, but a height limit of 35 centimeters was introduced. During peak hours, owners are supposed to not use elevators, and dog excrement must be cleared up immediately. Owners who breach the regulations face fines of between RMB 50 to 500.

Rules on pet ownership now vary across the country, but whether pet owners abide by them is a different story.

"There is not enough awareness when it comes to pet regulations," says Sun. "I know regulations exist, but they are not well-developed and people are just not aware of them."

"I rarely see people picking up after their dogs," says Liu. "And several of my friends have two pets or more in their homes."

The China market for pets is getting bigger and it's a trend that will continue. Dogs in China can increasingly look forward to a place in heaven—and that is even before they die.

"I've made use of an animal whisperer before," says Liu. "And when I asked my dog if in our next lives he would like to come back as the 'mom' and me as 'son,' he said no, he still wants to come back as my son in the future."

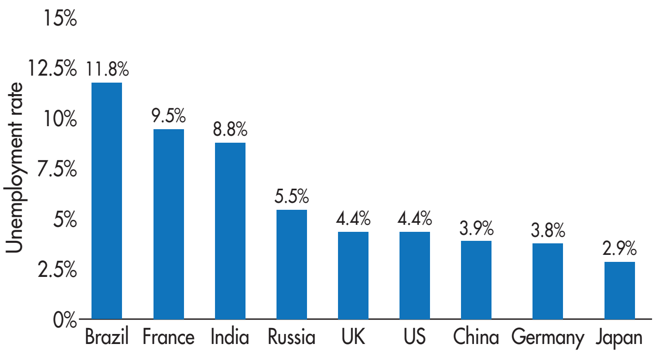
Employment by Market Sector

Amid efforts to stabilize the nation's job market during times of slower economic growth, what does China's employment market look like today?

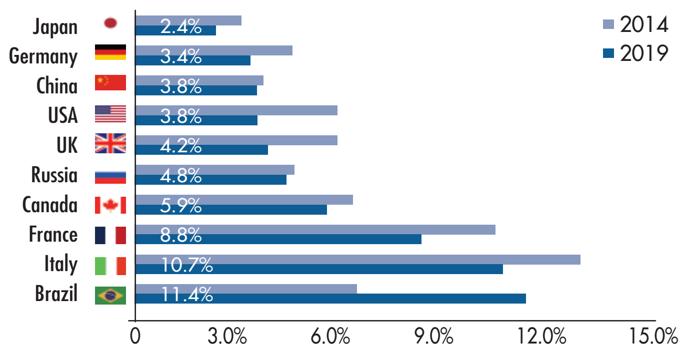
The Breakdown

Despite all the ups and downs in China's economy over the past decade, its official unemployment rate has remained stable compared with other developed countries. Overall, it has stayed within the narrow range of 4.0-4.3% since 2002, even during the depths of the global financial crisis.

Unemployment rates in major industrial and emerging countries in 2017

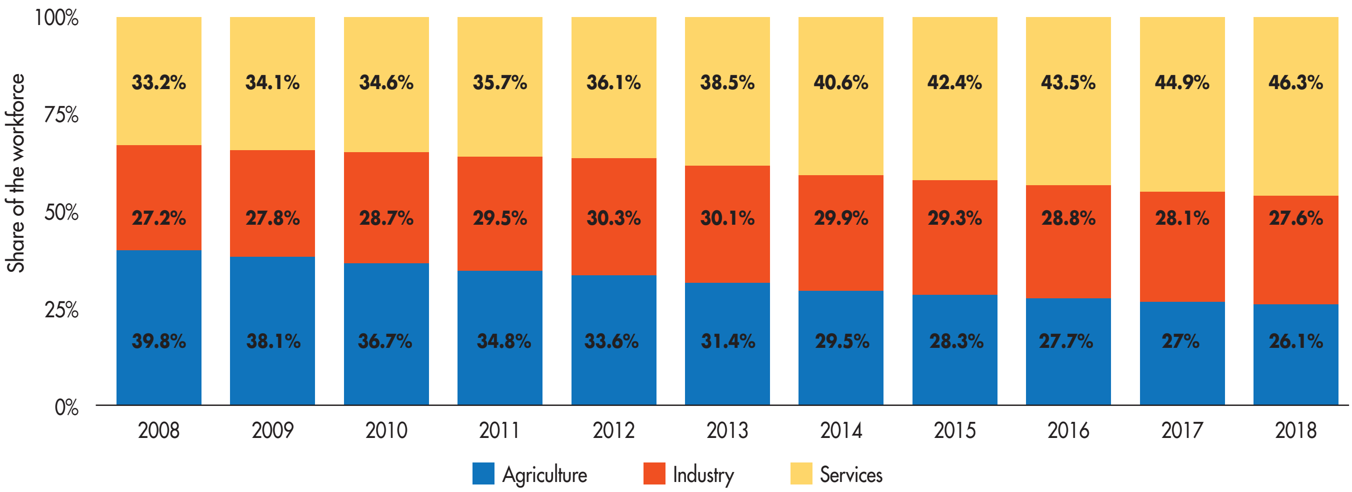


Unemployment rates in the world's largest economies are down (based on 2018 GDP)*



Changes by Industry

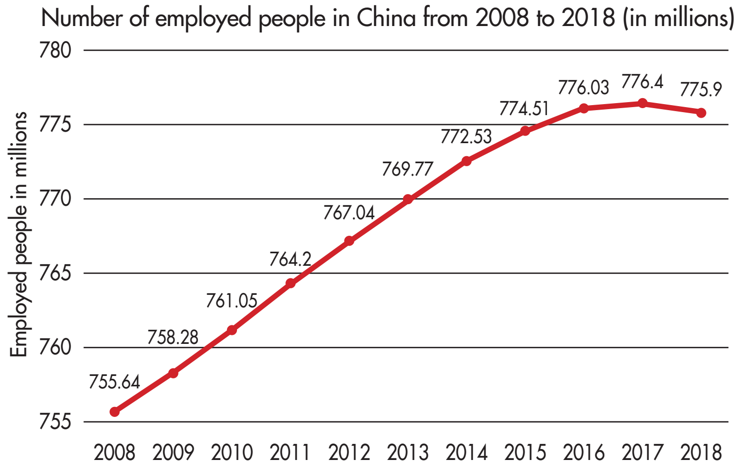
Separated into three main employment sectors, agriculture, industry and services, China's employment market has shown great changes over the past decade. Employment in agriculture and industry has steadily decreased, while the services sector has consistently yielding more jobs. In 2011, employment in services surpassed that of agriculture, to become the largest employment sector in China, contributing 313.64 million jobs to the economy by the end of 2014.



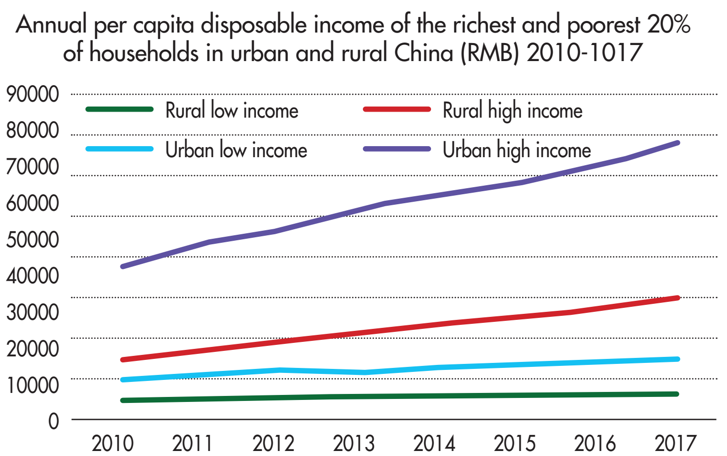
Sources: IMF World Economic Outlook, Statista, Worldwide: CIA, China MCHRSS

Changes Over Time

China's labor force, which refers to the demographic aged 16 and over and capable of working, reached 776 million people in 2018. There were about 434 million people employed in urban areas, while 342 million people were working in rural areas. Even though the workforce has been steadily growing over time, the labor force participation rate, meaning the share of the Chinese working-age population that participated in the labor force, has slightly decreased, dropping from 72.3% in 2007 to 68.9% in 2017.



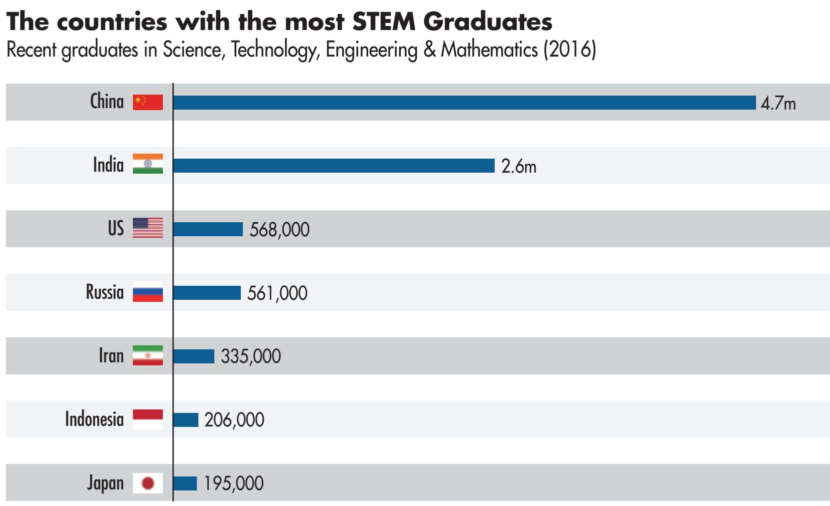
Regional Differences



A key concern in the current state of employment is the still large regional differences across China. There is still an obvious disparity between the western and eastern parts of the country, with coastal cities seeing a significantly higher rate of employment and income per household. In the capital city of Beijing, unemployment measured at a mere 1.4% for 2016, while the national average was 4.02%.

College Graduates

The top 5 most popular industries among Chinese college graduates are Software & IT, Manufacturing, Finance, Corporate Services, as well as Hardware and Networking. However, the employment market is now facing a structural rather than a cyclical problem—China is not creating a sufficient number of high-quality positions to soak up its educated youth.



Sources: China National Bureau of Statistics, Statista, World Economic Forum

The stats you need to know

Macro

Office vacancies skyrocket

Office vacancy rate was at **21.5%** across **17** major cities in Q3 of 2019, significantly up from the same quarter the year before when it was at **16.7%**. The rise in vacancies was mainly due to a drying-up of demand, rather than an increase in supply.

Source: *Financial Times*

Yangtze drought

The middle and lower reaches of the Yangtze river are suffering from the most severe drought experienced in **40 years**, with arable land in the region being adversely affected by temperatures **1 to 3 degrees Celsius** higher than normal.

Source: Reuters

Manufacturing on the up

Manufacturing activity expanded at the fastest pace in almost three years in November 2019, driven by rising stocks of purchased items. The Caixin General Manufacturing PMI, which gives an independent snapshot of the manufacturing sector's operating conditions, rose to **51.8** in November from **51.7** the previous month.

Source: *Caixin*

Business

Citi plans full securities firm ownership

Citigroup aims to split from its current joint venture with Orient Securities, in which it has a **33% stake**, to become the first foreign bank in China to have full ownership of its securities business. In 2018, Citi generated over **$1 billion** in China, out of the **$15.4 billion** total of its Asia revenues.

Source: *The Financial Times*

Car sales continue to slide

A slowing car market has hit the earnings of top automakers, with companies such as Ford posting net profits of **$425 million** for Q3 2019, down from **$991 million** for Q3 in 2018, and Mercedes expecting yearly profits to be significantly below the **$12.2 billion** it posted last year. It reported net profits for Q3 2019 of **$2 billion**.

Source: *The Financial Times*

Leveling the playing field

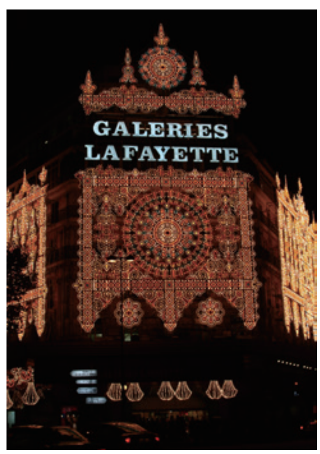
The Chinese government has passed a new law aimed at cutting red tape and leveling the playing field for foreign firms operating in the country. The law on optimizing China's business environment received a warm response from US trade officials amid the China-US trade war.

Source: *South China Morning Post*

Galeries Lafayette in China

Galeries Lafayette, the French department store chain, plans to open **10** stores in China by 2025, estimating that the outlets will generate **$1.1 billion**, or about **15%** of the group's overall sales.

Source: *The Financial Times*



Technology

5G now online

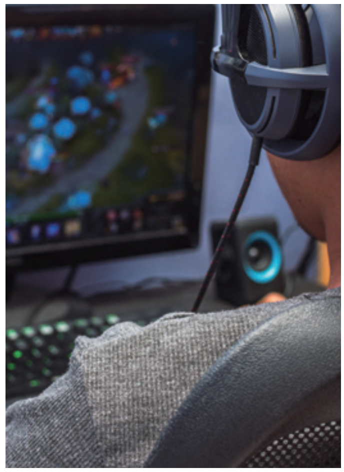
Mobile operators have rolled out **5G** services, as the country seeks to become a global technology leader. The superfast service is now available to consumers in **50** Chinese cities with prices for monthly plans ranging from **RMB 128 ($18)** to **RMB 599**. More than **130,000** 5G base stations will be active by the end of 2019.

Source: BBC

Huawei > Apple

Apple's market share in China falls to **5%** down from **7%** for Q3 2018, as Huawei Technologies captures a staggering **42%** share of China's smartphone market for Q3 2019. China's iPhone market for Q3 2019 is the lowest it's been in **5 years**.

Source: Reuters



eSports world champions

A China-based team called FunPlus Phoenix (FPX) crushed favorites to win Europe's G2 Esports tournament in Paris based on the popular online "League of Legends." More than **15,000 fans** gathered in Paris in November to witness the event which offered prize money of **$1 million**.

Source: *South China Morning Post*

Plummeting P2P

Peer-to-peer lending platforms continue to close with only **646 platforms** reported in operation in September, down from its peak in 2015 at over **3,600 platforms** as regulatory restrictions continue to tighten. Average investor returns plunged to **9.7%** for September 2019, less than half the return offered at the peak of the P2P boom.

Source: *Caixin*

Consumer

Road to riches

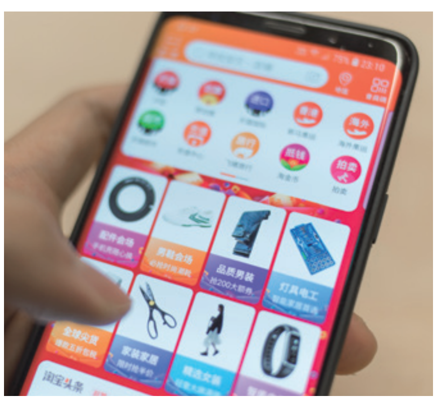
China now has more wealthy people than the US, accounting for **100 million** of the richest **10%** of people in the world. The US follows close behind with **99 million** people.

Source: CNN

For the love of shopping

Popular online shopping day, Single's Day on November 11, in 2019 raked in a **$23 billion** in sales for Alibaba Group within the first **9 hours**. China's e-commerce industry is set to make **$1.94 trillion** in sales for 2019 which is more than **3 times** the United States, which is predicted to see e-commerce sales of **$586.92 billion**.

Source: Reuters



Boosting tourism

Eligible foreign visitors to China can now enjoy **144-hour** visa-free transit stays at an additional **3 ports** of entry. The change is aimed at boosting the tourism industry during times of slowing economic growth. A total of **27 ports** of entry now offer visa-free entry, with conditions.

Source: *Caixin*

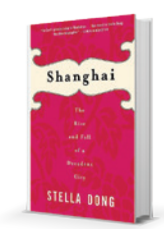
BOOKSHELF

Understanding Modern Chinese Society

Tracey Willard, Editor-in-Chief at the *Royal Asiatic Society China Journal*, recommends books that help readers understand the inner workings of Chinese society

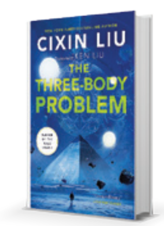
Tracey Willard has lived in Shanghai for the past 10 years and is the Editor-in-Chief of the *Royal Asiatic Society China Journal*, which provides a forum for discussion of culture, history and current affairs concerning Asia and especially China. She has previously worked as a sub-editor, journalist and writer for newspapers in both Australia and China, and has taught media studies at the Beijing Foreign Studies University. On top of her Editor-in-Chief role, she also works as a freelance editor for organizations in China's technology sector. In this selection, Willard recommends books that provide insight into China's history and how it has shaped China's modern society into what it is today.

What would be your number one book recommendation for someone looking to learn more about China?



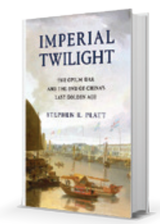
For people coming into China and especially Shanghai to do business, ***Shanghai: The Rise and Fall of a Decadent City*** by Stella Dong is a great starting point. Ms Dong tells the story of Shanghai's transformation from a swampland to booming international metropolis with charm and humor, evoking the wild days of the pre-war period. It is a vibrant account, full of larger than life characters, whose presence is still felt in Shanghai today. If you want a snapshot of how Shanghai became the gateway to modern China, I strongly recommend this book.

What book on China have you re-read the most?



Something that I am currently re-reading is the ***Three Body Problem Trilogy*** by Cixin Liu. It introduces a number of philosophical and scientific conundrums, and provides a vision of a future that is not dominated by the West. Starting in the time of China's Cultural Revolution, this book provides a uniquely Chinese perspective of psychological motivations that may spur personal or political decisions. The "big picture thinking" is what really draws me to this book, giving me something new each time I read it.

What are you reading currently?

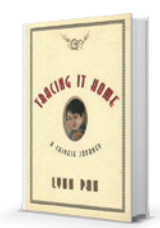


A difficult topic that many Westerners don't fully understand is the concept of losing face, and why this is important in Asian culture. ***Imperial Twilight*** by Stephen Platt tells how events leading up to the Opium War completely re-shaped both the Western view of China, and how China would see itself as it struggled to reshape its identity in the 20th and 21st centuries. Essentially, the Opium War was a trade war, and as we watch another trade war unfolding around us, it is useful to reflect on how cultural differences can cause devastating consequences.

What book totally changed your perspective on a certain topic?

Issues surrounding China's aging population are starting to put incredible pressure on today's young professionals. ***One Child***, by Mei Fong, explains how and why the "one-child policy" was implemented and how the effects of this policy from 1979 will continue to reverberate through Chinese society for decades to come. Fong gives a very human face to this government initiative and anyone working with young Chinese professionals should read this book to understand the pressures that they are experiencing at home.

Which China book do you think is most underappreciated at the moment?



In her beautiful book, ***Tracing it Home***, Lynn Pan takes readers on a compelling journey through China's recent history, blending together her family's accounts of historical events and the social environment of China with the latter day experiences of a modern international family, living in London, Hong Kong and Europe. Her sensitivity and dry wit are always present throughout the book, along with a compassionate understanding of lives lived in tumultuous times.

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APPLY

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