CKGSB KNOWLEDGE

CHEUNG KONG GRADUATE SCHOOL OF BUSINESS

Volume No. 43
MARCH 2022
$12.00

THINKING ESG

The Chinese markets are turning increasingly toward Environmental, Social and Governance conscious investments

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- Looking back at two decades of China in the WTO
- China's health care sector is embarking on a digital upgrade
- Cracks are starting to appear in the foundations of China's property market


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Issue: March 2022
Vol. No. 43

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ISSN 2312-9905

Publisher
CKGSB GLOBAL LIMITED
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For Letters to the Editor or reprint requests, please contact:
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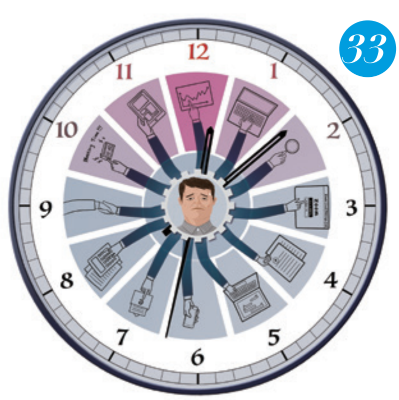
Business Trends

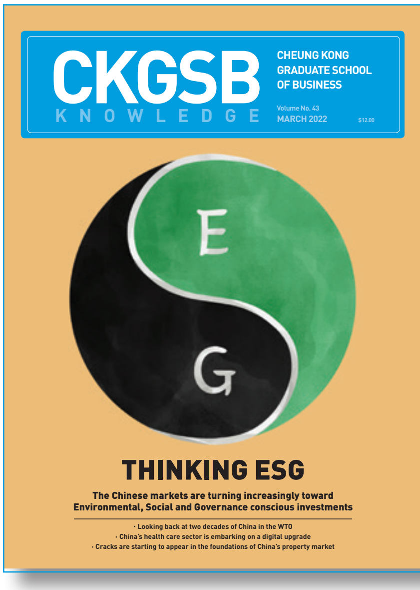


Company

Downtime

China and the Global Environment

December 2021 marked not only the 50th anniversary of China joining the United Nations, but also the 20th anniversary of its accession to the World Trade Organization (WTO), and their membership has been a boon for both China and the rest of the world. WTO membership in particular has had a huge impact not only globally, but also within China, where it has led to a seismic shift in the economic balance between Chinese provinces and their interactions with the rest of the world. The most significant impact of China's increased involvement in global trade in the past two decades has been a dramatic drop in the cost of living for billions of people and a huge jump in prosperity for China's population.



Given the many changes that China's WTO membership has triggered, it seems pertinent now to reflect on the lessons of recent decades and consider how China's relationships with other economies will need to change in the future. This is a topic we cover in more detail in this issue's commentary, "**Trade Winds of Change**" (page 6).

Despite ending the second year of the pandemic relatively unscathed in comparison to much of the rest world, China is still facing economic challenges on several fronts. Among which are the electricity sector, where fuel shortages and carbon emissions targets have combined to increase pressures on outputs; a general economic slowdown, which is being exacerbated by an aging population; and the real estate market, which has traditionally been the backbone of the Chinese economy but has shown signs of wobbling as the government makes efforts to rein in spiraling debt.

We examine the implications of problems with the property sector, an industry integral to the country's unrivaled growth, in "**House of Cards**" on page 17.

China's carbon goals, of peaking emissions in 2030 and achieving carbon neutrality by 2060, have also played a major role in the increase of ESG-related investment in the country over the last few years. Our cover story, "**Turning Over a New Leaf**" (page 9), provides an explanation of how the ESG concept is gaining ground in China and how a lack reporting, data and understanding are curbing its growth.

To complement our cover story, we are lucky to be joined by Fu Chengyu, former chairman of Chinese oil and gas giant SINOPEC, for a discussion on how exactly China and its energy industry plans to achieve its dual carbon targets (page 14).

Elsewhere in the issue, we continue our series on the impact of digitalization, this time with the focus on health care and China's world-leading developments in the sector (page 41). We also look at changing attitudes towards work (page 33), increasing interest in the metaverse (page 28) and the proliferation of podcast-listening across the country (page 61). We turn our viewfinder to Chinese beauty unicorn Perfect Diary, which saw a meteoric rise to dominance thanks to its marketing prowess, but has since found out that there is more to success than how you present yourself (page 54).

We hope you find the topics addressed in this issue to be exciting and illuminating at this time of great change. As always, if you have any comments or opinions to contribute, please feel free to contact us at (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/*

COMMENTARY

Trade Winds of Change: China and the WTO

China joining the WTO has brought unprecedented change and greater prosperity to both China and the rest of the world

Zhou Li, Assistant Dean of the Cheung Kong Graduate School of Business, Editor-in-Chief of CKGSB Knowledge

All commentaries reflect the personal opinion of the author and are not necessarily the official position of the school and the magazine

China's entry to the World Trade Organization (WTO) in 2001 was, at the time, a highly controversial topic, with many people across the globe, including a large portion of the Chinese leadership, being bitterly critical of the decision. But time has shown that it was correct, that providing China with the historic opportunity to integrate with the world has raised prosperity for people around the world, and has also led to fundamental changes in China's centralized economic and social system.

For centuries, China was skeptical of doing business with the West, an attitude exemplified by the dramatically unsuccessful Macartney Mission in 1793, when the British first offered a trading relationship. China, which at that time had by far the largest population and the largest economy in the world, saw very little if any benefit in expanding its then limited trade links with the West. In the years following the failure of the Macartney Mission, China, in the eyes of most Chinese, lost wars, money, land and lives in its dealings with the rest of the world, and especially with the West. Only after the introduction of the reform and opening policies under Deng Xiaoping from the late 1970s, did China start to see the benefits of being a part of the world economy, and China's membership of the WTO in particular has really shown China and its people the great economic benefits of doing business with those beyond its borders.

Headwinds and Tailwinds

By the end of the 1980s, the process of reform of China's system was starting to slow, and the collapse of the former Soviet Union in 1991 reminded Chinese leaders of the urgency of deepening economic reforms, with Deng Xiaoping bluntly remarking in 1992 that "those who do not promote reform should be brought down from their leadership positions." The leaders at the time, particularly after Zhu Rongji became premier in 1998, believed that joining the WTO was an opportunity to help facilitate a further round of much-needed systemic reforms, offsetting the negative legacies of 30 years of planned economy, such as convoluted government bureaucracy and inefficient state-owned enterprise (SOE) performance.

But the decision to join the WTO was not supported by all of China's leadership. Among the issues raised were worries that China would become a "colony" of the West, used to produce low value-added products by leveraging its cheap labor, and that opening China's market up to foreign products and capital would devastate Chinese companies that stood no chance when competing with mighty MNCs.

Concerns were also voiced that "spiritual pollution" from the West would challenge the ruling power of the government.

On the other side of the negotiation table, the US team also faced pushback from politicians who took the annual bargaining with China over its most-favored-nation (MFN)/normal trade relations (NTR) status as an opportunity to achieve their agenda, which was to change the China system to be more like that of America and attract more votes at home. They were, however, outweighed by other interest groups who considered it vital to US companies, especially those in the agricultural industry, to have easier access to the China market given its size and growth prospects. As a result, in 2001, then US President Bill Clinton remarked that, in economic terms, allowing China's entry into the WTO with the agreed conditions was the equivalent of a "one-way street," with the biggest beneficiaries being American workers, consumers and investors.

The world owes a great debt of gratitude to the visionary and pragmatic leaders on both sides, and to their respective negotiating teams, who managed to nail down terms for China's WTO membership, despite strong opposition. The critics then, and indeed now, should try looking at the issue from a longer historical and global perspective and imagine what the world and their own lives would look like if China had not become a WTO member.

A changing China

While there are many who continue to criticize the decision to give China full membership of the WTO 20 years ago, the country has actually since changed more fundamentally than many give it credit for.

One of the significant changes in China is its fast-growing private sector. Private ownership was eliminated in China after the 1949 revolution as it was in the former Soviet Union, but it has thrived since the late 1970s, and particularly since China's accession to the WTO.

In the last two decades since China joined the WTO, its private sector, led mostly by remarkable entrepreneurs, has become the key driver of the country's economy. The private sector's share in total exports from China has increased from 35% before joining the WTO, to almost 90% today. SOEs, which contributed around 40% of China's GDP 20 years ago, now only account for around 25%. And while there continue to be complaints about the level of government influence in China's economy, it has in fact dropped significantly in the years China has been part of the WTO. Overall, Chinese governments at all levels have been shifting from the role of leader or major player, to that of facilitator and coordinator, from making investments to encouraging them.

The global shift

Looking outwards from China's borders, the country has become the key growth driver for the world as a result of accession to the WTO, contributing around 28% of global growth through much of the past decade, and it is the largest trading partner of more than 120 economies around the globe. Also as a direct result of its WTO membership, it now has the undisputed role of "factory of the world."

For the US and the West generally, China's new role has resulted in a dramatic reduction in the cost of imported products. For so many countries, the quality of life changes wrought by China's economic expansion make it hard to imagine what the world would be like without China's membership of the WTO.

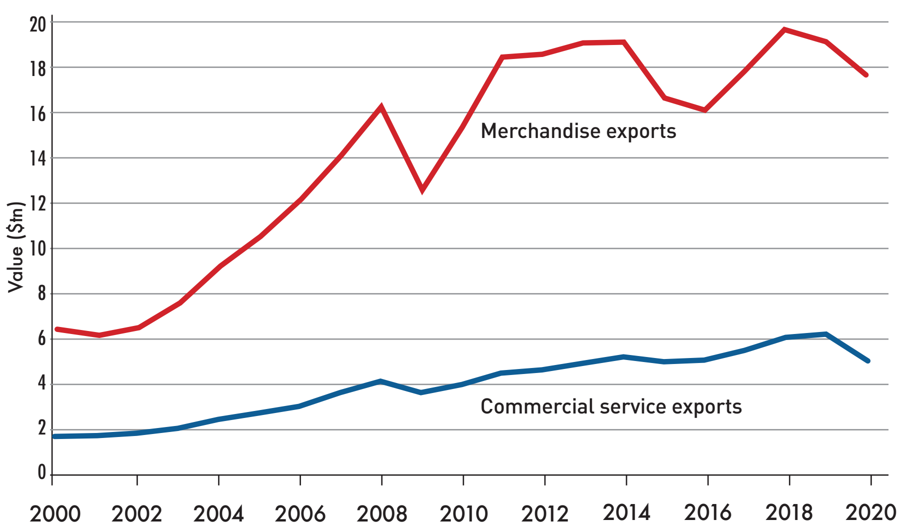
Another aspect for much of the world is economic dependency on China, exemplified by China's role in pulling the global economy forward during the worst stages of the pandemic, thanks to its quick return to normalcy.

Although dependence on China for many sectors and for much of the world is now a fact, the call for reducing dependence, led by the US, is not necessarily the answer to the problem. The US-China trade war and the export controls introduced by the Trump administration have accelerated China's shift towards self-reliance. But they also tend to hurt American consumers by making them pay higher prices for the same products from China or alternatives from other countries. Many American companies will also suffer by having less access to the largest market in the world and more competition from China, which today has by far the highest number of STEM (science, technology, engineering, and mathematics) graduates.

A multilateral approach

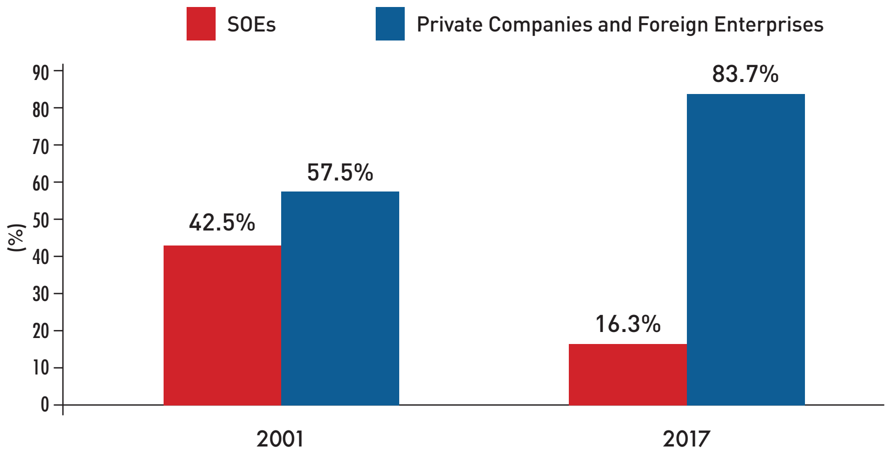
Now more than ever, China is deeply integrated into the global economy. With

TRADE EXPLOSION | The world's exports have in total grown dramatically since China's accession to the WTO



Sources: WTO, IMF

IN AND OUT | The SOE share of China's total imports and exports dropped significantly in the years after joining the WTO



Sources: China Customs Statistics

its successes in the last 20 years, China has developed an unprecedented confidence in its dealings with the international community, although admittedly there are times when it is overly confident.

China is now a strong advocate of globalization and multilateralism on the world stage. In addition to being an active member of the WTO, it was a driving force in the creation of the Regional Comprehensive Economic Partnership (RCEP) trade agreement which encompasses most of east Asia, and constitutes the region with the largest collective GDP and highest growth potential globally. The country has recently applied to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), a trade agreement once led by the US, and if it is accepted, this step would once again help deepen reforms in China, especially in terms of the active role of the government, which has long been one of the key complaints made from the West.

As one of the two major players in the global digital economy, China is currently also applying to join Singapore, Chile and New Zealand in the Digital Economy Partnership Agreement (DEPA). Such agreements and organizations would in the past have all been led and dominated by the US, but since China joined the WTO the world has clearly changed.

It is to be hoped that China can maintain its openness to the outside world despite the short-term challenges it faces. The pursuit of self-reliance carries the possibility of negative effects at home, with the World Bank stating that it could harm China by putting it at greater risk of falling into the "middle-income trap" and jeopardizing much of what has already been achieved.

The new China model

China's integration into the WTO was an ambitious step, resulting in much greater interaction of two very different economic systems—the relatively laissez-faire system developed in the West and the relatively state-controlled system of China, rooted in a thousand years of history.

China is, in effect, testing a new economic model that aims for a new balance between the state and the market, between SOEs and private enterprises, between domestic and international economies. As Adam Tooze, professor at Columbia University, recently stated: "Perhaps state capitalism, rather than reaching its limit, is being reformed to give it more order, longevity and even dynamism."

China's new economic model, a market economy primarily driven by the dynamic private sector yet with the visible hand of the government as a participant, has led to successes that most of the developing countries have not been able to achieve. Many had followed the predominantly Western model and failed. The countries that suffered the most have tended to be those that relied on labor and natural resources, eventually finding themselves relegated to the lowest part of the value chain, at risk of losing everything in the face of technological advancements elsewhere.

Wang Qishan, then a vice premier and now vice president, highlighted it well when he remarked to his US counterpart Hank Paulson during the great financial crisis in 2009, "You were my teacher. Maybe now my teacher doesn't seem so wise given the mistakes you made." When recalling the conversation a few years later, Paulson was quoted as agreeing that the US "gave China a flawed model."

China is never going to be a carbon copy of the Western liberal economic system. If the US is confident in its model then there is the option of letting a growing China compete on its own terms and seeing which system prevails.

With all this in mind, perhaps it is time for the US to learn to live with a China that is different from the West. Confrontational economic policies such as the raising of tariffs and export controls, started during Donald Trump's presidency and continued once Biden took over, will not only create challenges for the American economy in the long-run but also risk damaging the position of reformers in China, the Zhu Rongjis of today, and give more reasons for China to hold on to its historical distrust of the West and fall back on its self-reliant tendencies.

Trade futures

For the last 20 years, membership of the WTO has helped China to develop into an economy that is significantly more open than it has ever been before. At the same time, both the WTO and the rest of the world have changed for the better to a great extent because of China's increased involvement. What happens in China in 2022, and indeed in the two decades beyond, will be fundamental to further shaping the course of global history.

TURNING OVER A NEW LEAF

China's new environmental and social policy objectives have led to a dramatic rise in ESG investment that will mold the country's economy for years to come

By Patrick Body

Image by Rómulo E. Gandolfo

Environmental, social and governance-related investments are on the rise, but further increases are slowed by a lack of understanding

Over the past two years, many shares that fit ESG—Environmental, Social and Governance—requirements have skyrocketed on China's stock exchanges—electric vehicle manufacturer BYD has gone from $10 a share to an eyepopping $78, competitor XPeng's shares have doubled in value and new energy company Sungrow Power now sits atop a share price 15 times higher than at the start of 2020. It's all part of investors jumping on one of the most important bandwagons of the investment world today—awareness of ESG issues.

Valuations spiked after Chinese leader Xi Jinping focused China's attention on curbing its carbon emissions and becoming carbon neutral by 2060. His proclamation is indicative of the rapid uptake of ESG investment in the country. ESG concept shares have done far better overall than the market average and look to continue to perform well as the world's priorities shift.

Globally, around $35 trillion of the $103.1 trillion assets under management (AUM) are invested in funds applying ESG-related criteria. Although China can't currently compete with those levels—in 2019 ESG products constituted only 1% of AUM—there is a clear push towards ESG financing in the country with a $7.6 billion net inflow to ESG funds in the third quarter of 2021 alone.

The benefits of ESG investing are clear to many, with ESG funds producing better annualized returns than their non-ESG counterparts over three, five and 10-year periods. But a lack of conceptual understanding is curbing growth and stopping China from becoming the ESG investing powerhouse it has the opportunity to be.

"ESG investing can help investors to better manage risks, identify opportunities and help create long-term returns," says Nan Luo, Head of China at the UN's Principles for Responsible Investment. "But not every Chinese investor has realized and acknowledges the value of ESG investing yet."

Concept clarification

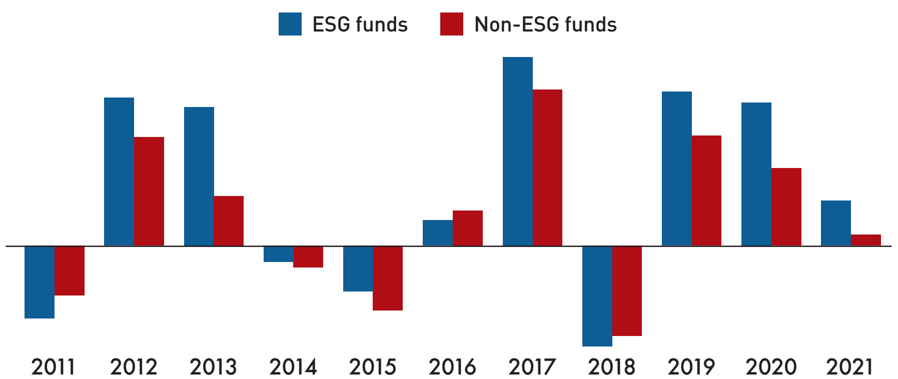
ESG-compliant investment is loosely defined as financial decision-making that takes into account environmental, social and governance issues, alongside economic outcomes. Which ESG issues are material to an organization depends on their core business and desired outcomes from the investment, thus, for some companies ESG comes more naturally than for others.

Over the past few decades, it has become increasingly common for companies the world over to consider the environmental impacts of their actions but social and governance issues continue to be less widely-understood. In short, how a company interacts with their stakeholders falls under the social bracket, while governance assesses a company's decision-making.

The popularity of ESG-compliant

FUND PERFORMANCE

Worldwide ESG-related funds have regularly outperformed traditional funds over the last 10 years



Source: Refinitiv Eikon/Patturaja Murugaboopathy investing has been rising for years, particularly in Europe, and China, although late to the party, is now starting to see its importance. “One key reason is that the financial community basically started to realize the material impact on investments by environmental, social and governance factors,” says Luo. “And from the return perspective, the ESG investing approach can help them create long-term ROI.”

The majority of ESG investment is undertaken using Responsible Investment (RI) strategies, which balance ESG concerns with achieving better risk-adjusted returns from the market compared to standard investments. The term RI dates back to the 18th century when Quakers and Methodists laid out clear guidelines for followers over the types of companies in which they should invest.

RI can be formed through the exclusion from portfolios of certain industries—such as tobacco or weapons manufacturers—typically based on ethical or moral criteria, and the inclusion of industries or companies based on ESG factors—new energy companies are often chosen via this method.

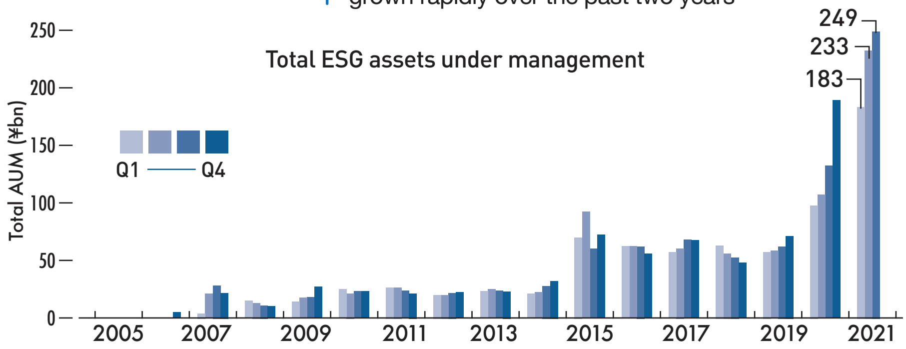
The term ESG, coined in 2005, has increased in prominence dramatically in the past few years and even though China can’t match global ESG-related AUM, such investments in the country are rising, and fast. Domestic ESG fund assets more than tripled in 2020 to reach $26.4 billion, and by the end of October 2021 they had already reached $58.6 billion and look unlikely to stop growing.

“Responsible investing is not only positive to society and the environment, it also enhances returns,” says Xiaoyu Liu, portfolio manager in emerging markets and Asia-Pacific equities at Aviva Investors. “ESG considerations can help to reduce risk. If a company doesn’t have good corporate governance or has environmental issues, that will affect return on investment and negatively impact share prices. So from that sense, everybody should incorporate ESG: there are only benefits, there’s no downside.”

Green guidance

Since the early 1980s, the Chinese government’s main focus has been facilitating unparalleled levels of economic growth—China’s GDP per capita has increased tenfold since 2000, hitting $10,500 in 2020—but there has been an increasing awareness that this level of growth is unsustainable and that a shift in priorities is required.

ESG ASSETS | ESG assets under management in China have grown rapidly over the past two years



Sources: Caixin

Since Xi Jinping’s 2020 announcement that China would peak carbon emissions by 2030 and become carbon neutral by 2060, there has been a swathe of new environmental investment-related initiatives—infrastructure REITs that focus on environmentally friendly public utility projects, including sewage disposal plants and waste-to-energy electricity facilities; a pledge to end funding to all non-domestic coal-fired power stations; and in late October, the People’s Bank of China issued dozens of new standards seeking to guide the country’s rapidly-developing financial industry onto an orderly growth track, including the first set of standards for the growing green finance sector.

“Environmentally, it’s happening,” says Michael Sung, professor and founding co-director of the Fudan Fanhai Fintech Research Center at the Fanhai International School of Finance. “You have Xi Jinping stating at the UN that China will be carbon neutral by 2060 and since then they haven’t just been maintaining that message, they’ve been pushing it. It’s written into the next five-year plans and China as a whole is really setting the bar for the future.”

Beyond the environment, the China system, especially with Xi’s recent calls for an increase in common prosperity, is pushing the country’s businesses toward a more socially responsible approach. Common prosperity requires companies to not only have a responsibility to their shareholders, but also to society as a whole.

And in terms of governance, the system is slowly shifting towards being more supportive of ESG investments. However, this is complicated by the number of very powerful organizations involved with typically not enough co-ordination between them. The People’s Bank of China, the China Banking and Insurance Regulatory Commission and the China Securities Regulatory Commission (CSRC), among others, all play ill-defined roles in promoting good governance practice.

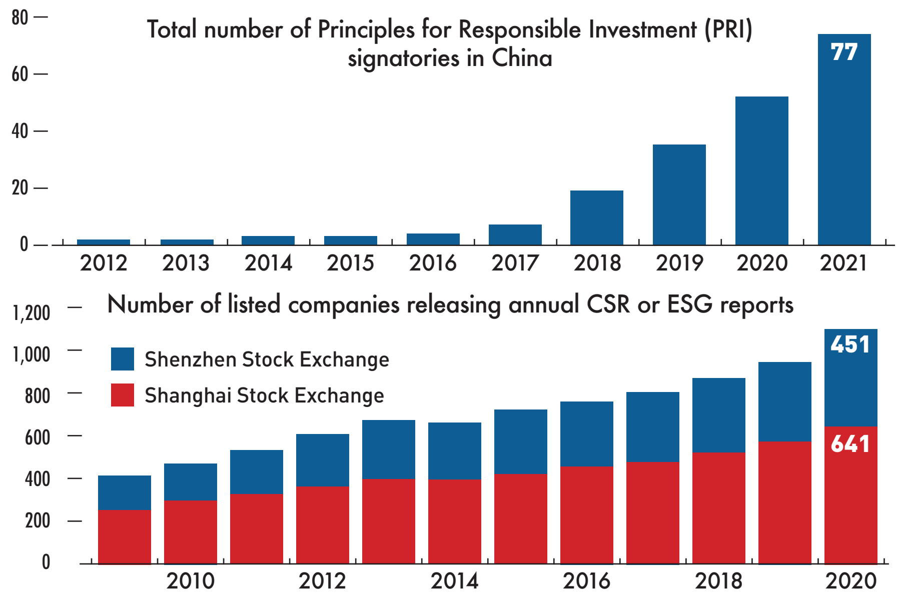
“[For better ESG governance] better coordination among different authorities is needed, and there is still a lot of room for improvement in China,” says Nana Li, Research and Project Director for China at the Asian Corporate Governance Association. “At least one authority at the top needs to take the responsibility for pushing this. China is such a top-down market and to be able to move anything forward, you have to have somebody stand out and take a leadership role.”

Company commitment

Government policies and listing requirements can guide investment decisions, but the final decision-making of how to spend money still lies with businesses. And because China’s sustainable investment surge is a relatively recent phenomenon, many firms are yet to absorb ESG into their core business strategies.

SIGNING UP

The number of Chinese PRI signatories is growing and listed companies are increasingly releasing ESG reports



Sources: PRI, SynTao

"Only a few of the large asset managers have begun to develop their ESG investment strategy and set up ESG dedicated teams," says Wang Yao, professor and Director General of the International Institute of Green Finance at the Central University of Finance and Economics in Beijing. "But many other institutional investors only have basic knowledge of ESG and aren't transforming it into real decisions yet."

Interest in ESG compliance is growing among businesses and especially investors. Ping An Insurance, China's largest insurer, is integrating ESG concepts and standards into its corporate governance and management. It has also developed an AI-compiled database that allows it to evaluate other companies' ESG performance in order to better inform its investment decisions.

The world's largest electric vehicle-battery maker, Fujian-based Contemporary Amperex Technology (CATL), has also pledged itself to an ESG philosophy, announcing in its 2020 Social Responsibility Report that the company already has a plan to meet China's 2060 carbon neutrality goals and that "sustainable development is a long-term and enduring project. It requires all employees, customers, suppliers and other stakeholders to promote the concept of sustainable development throughout [the company's] ecosystem and work together for the new energy cause of mankind."

E-commerce giant JD.com also made a public commitment to improve its ESG practices, stating in its corporate blog that "JD's efforts cover not only environmental sustainability and a commitment to responsible consumption of resources, but also the unrelenting pursuit of and management of top talent and its commitment to improving society through poverty relief and more."

Such public commitments from companies are important, but the fact remains that most Chinese businesses rate poorly compared to their international counterparts on ESG indices, which are issued by agencies such as Moody's and Reuters. According to Wang, however, these ratings actually betray a limited understanding of the Chinese business environment. "These international frameworks do not reflect Chinese enterprises," says Wang. "There are special features here in China that lead to underrated scores for businesses."

But international organizations promoting internationally accepted standards have started to get a foothold in the country. One such organization is the asset manager-focused UN Principles for Responsible Investment (PRI) which has 75 different investor signatories, including Ping An. "We encourage institutional investors, including asset owners and asset managers, to implement our six principles," says the PRI's Head of China, Nan Luo. "They help with integrating ESG practices into the investment process, decision making and encouraging active asset ownership—making sure that ESG is not just taken into account at the start of a relationship."

And it seems to be working. A growing number of ESG investment indices are appearing in China and the issuance of fund products—such as bonds that enable financing of projects with specific ESG goals—reached a new height. In late 2020, Bank of China also issued $942.5 million of Asia's first blue bonds which facilitate fundraising for marine and ocean-based projects that have ESG benefits.

The demand for ESG bonds is growing but there are some compliance problems slowing companies down. "There is literally trillions of dollars of pent-up demand for all kinds of bonds but that money is often locked away," says Michael Sung. "Companies can't invest in green bonds if the bonds can't be proven to be green, so the money just sits there."

But Sung sees a solution to this problem in blockchain technology, adding, "its big data applications will result in an explosion of ESG investment from companies."

Stumbling blocks

ESG-related pressures from regulators, markets and investors are increasing and many Chinese businesses are realizing that ESG is integral to their future, but for many, implementation is difficult. Not least because many business owners don't understand exactly what that entails.

"Although they may not know very much about ESG, they know that it is going to happen," says Wang Yao. "Especially off the back of the carbon neutrality goals, they know that ESG will be in their future and they need to start integrating ESG into their investment decisions."

China's stock exchanges and the CSRC have set out some ESG-related reporting requirements for listed companies in China, but collecting data and producing reports—and by extension, developing a greater understanding of ESG—remains largely voluntary.

"The stock exchanges in mainland China and Hong Kong have issued ESG reporting guidance for over 10 years," says Xiaoyu Liu. "Only Hong Kong has made ESG reporting mandatory, doing so in July 2020, and for companies there it's still a work in progress due to a lack of awareness and resources. But for the exchanges without mandatory requirements, many companies, especially those that don't understand the benefits of ESG, will see a voluntary requirement and just not bother."

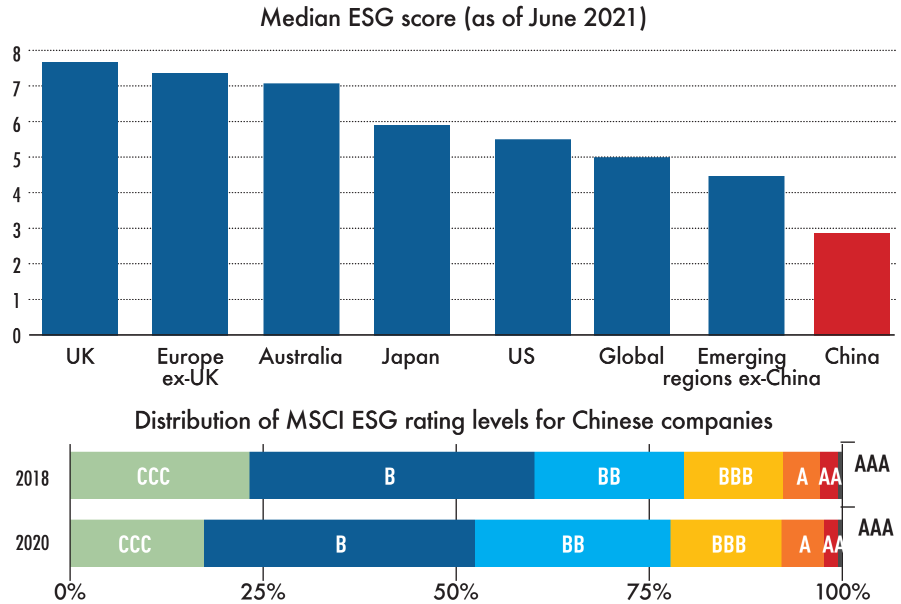
The lack of mandatory ESG reporting and limited understanding of the financial incentives of improved ESG performance means that motivation for business owners to develop a deeper understanding of the concept remains low. Better data and accurate reporting is fundamental to improving the quality of business' ESG performance worldwide, and China is not unique in having to tackle its related issues.

"The lack of high quality and consistent ESG information is a key barrier," says Nan Luo. "One particular policy recommendation that we [the PRI] raised is that we really encourage the Chinese financial regulator to develop and publish an ESG disclosure framework to all listed companies on a mandatory basis."

Without more stringent reporting requirements there is also a risk of "greenwashing," a term that refers to companies misrepresenting themselves or their products as being more sustainable than they are. It is a common phenomenon in countries seeking better ESG performance and China is no exception. For some it is an intentional strategy to increase financial returns, but for others, especially given the difficulty of accurate data generation and reporting, it is just a natural consequence of lax regulations.

One such product is the highest-rated ESG Index in China, the MSCI China ESG Leaders Index. The three biggest holdings in the index, which is tracked by a number of funds, are tech giant Tencent, on-demand delivery company Meituan and e-commerce company Alibaba, each of which have dubious ESG records.

ESG RATINGS | China's median ESG score is still low compared to many, but company ratings are improving



Sources: Factset Research System; MSCI; WEF

"I want to ask some of the companies that produce what they call ESG funds: how do you measure it, how does it qualify as ESG?" says Nana Li. "There's no criteria, there's no certificate, so they can just call it ESG at the moment. But you can't blame these people, either. If there is no real consequence to stop you from doing that, there's no reason you shouldn't. Especially if you have competitors already benefiting from it, why would you disadvantage yourself?"

Up, up and away

The lack of a conceptual understanding of ESG in China has led to little governance pressure for mandatory ESG reporting and in turn, a dearth of good data upon which ESG practices can be improved. Each issue is interlinked, and pushes for better practices, such as meeting carbon neutrality goals, are starting to raise awareness of both the importance and financial benefits of sustainable development.

"I'm personally positive about the development of ESG investing in China in the coming years," says Nan Luo. "There's a growing consensus about the importance of low carbon and sustainable development. Chinese investors have started incorporating ESG and calling for sustainable investing policy and regulation. Policymakers and regulators will have to take action to develop and publish policies which can really support meeting China's carbon reduction targets and other sustainable development goals. This new regulatory environment will, in turn, require investors to do ESG investing. So there will be a chain reaction."

Although still in its infancy in China, investment that is ESG compliant is clearly on the rise and it is unlikely to stop until it becomes the norm.

"With the increasing awareness of ESG investment concepts and guidance from national policies, domestic investors will increase their willingness to invest in ESG and the number of institutions carrying out ESG investment will grow," says Wang Yao. "ESG is well on the way to becoming mainstream in Chinese investments."

Michael Sung agrees. "We are seeing an exponential growth of ESG investing in China and it is only going to accelerate from here."

Refocusing Our Energy

Fu Chengyu, former chairman of SINOPEC and former chairman and CEO of CNOOC, elaborates on what China has to do to achieve its new energy goals

The world is fast coming to terms with the need to fight climate change, and nowhere is the need for change more obvious than in China, which consumed over 25% of the world's energy in 2020. With this in mind, the Chinese government has set the goals of peaking carbon emissions by 2030 and achieving carbon neutrality by 2060.

In this interview, Fu Chengyu former chairman of SINOPEC and former chairman and CEO of CNOOC, which together dominate China's energy world in terms of oil production, distribution and sales, discusses how the new carbon emissions targets will affect the traditional energy industries in China, the need for a shift in mindset, away from fossil fuel reduction towards carbon management, and the importance of remaining steadfast in reaching your goals.

Q. How will China's new carbon targets affect demand for oil and gas in the country? And how do you see the demand trend changing in the future?

A. China has definitely entered a green development stage, and the goal of carbon neutrality and an ecological civilization should guide our sustainable development. Whether it is the technology-driven development we have talked about in the past or the higher-quality development approach we are discussing today, our aim is to achieve healthy and sustainable development.

Now that the world is committed to solving climate change issues, China has also made its own commitment to peak carbon emissions by 2030 and reach carbon neutrality by 2060. The country understands that there needs to be a fundamental change in the way human society develops as a result of climate change and although the promises we've made are ambitious, China will try to reach these goals ahead of time. This will require two major shifts, the first of which is working out how to increase the speed and strength of development of renewable energy sources and the other is figuring out how to adjust the structure of the traditional energy sector through the development of new energy.

In the future, new energy will account for a growing proportion of energy supply and the proportion of traditional energy needs to drop, but this won't be an instantaneous change—it will happen gradually over the next 10 or 20 years. China will peak carbon emissions in 2030, after which there will be a decade of discovery and progress made on lowering the proportion of traditional fossil fuels in the energy mix as soon as possible.

Though it is very difficult, China knows this is an opportunity for development. This is our opportunity to enhance technological progress, an opportunity to transform the development mode. So, as long as we can overcome the difficulties, Chinese enterprises and China will create a brand new future. In general, I am confident that China can fulfil its commitments.

Q. What changes are required in the immediate future?

A. The current transition period of the next 10 years, is the time when China will enhance its ability to manage the carbon emissions of traditional energy sources. At the moment, due to soaring global energy prices, the difficulties associated with a large short-term reduction in emissions are quite high, but we still have time. So we must make good use of the coming years to develop a plan, a blueprint that can guide our work step-by-step so that our carbon dioxide emissions will decline gradually after 2030. And that's what China is going to do.

Chinese society differs from Western societies in many ways. One of the main differences is that it is a unified country, so as long as the government is determined to move forward, all enterprises will follow. The traditional energy companies are now coming up with major plans that will help them, and the country as a whole, to reach these goals. These plans are also divided into the two approaches I previously mentioned. The ability to achieve the requisite increase in new energy is limited, in the short-term at least, but in the meantime, the intensity of carbon dioxide emissions needs to be lowered. It is unlikely that the consumption of fossil fuels will drop rapidly over the next 10 years, but we can and should reduce the carbon dioxide emissions caused by their ongoing use.

Q. For many, the reduction of fossil fuel usage is paramount, no matter how difficult it is. To what extent, do you share this view?

A. We need to shift our mindsets to a way of thinking that doesn't necessarily view fossil fuels as the enemy, but rather sees carbon dioxide or greenhouse gas emissions as the problem. We need to spend our time and resources on discerning how to reduce such emissions. This is going to be very difficult for all developing countries to do, especially over the next decade, but we have to have a goal that recognizes that even if there is no significant reduction in fossil fuel consumption, there must be a reduction in carbon dioxide emissions. And we need to take a variety of approaches towards achieving that goal.

China and Chinese enterprises, especially the traditional energy companies and enterprises in other industries with high energy consumption and high emissions, need to increase their investment in technological innovation and research and development (R&D) to improve energy efficiency and reduce carbon emissions. China's energy efficiency is 2.5-3 times worse than that of developed countries, and 1.7 times worse than the world average, so there is a lot of room to improve our energy efficiency and reduce energy consumption through technological innovation and R&D.

It's a massive opportunity because if we reduce energy consumption, our emissions will naturally fall. This is the low-hanging fruit for China. And getting there will require encouragement via government policies and regulations. For example, strict limits on the production of high energy-consuming enterprises should be put in place—if you can't improve energy efficiency, you need to limit production. On the other hand, when you can improve energy efficiency in an enterprise, we should provide strong policy support for research and development.

But also, while we are striving to achieve carbon neutrality, we must keep a political, economic, ecological and energy balance, and not just blindly address a single aspect.

Q. So what do you think are the obstacles to China fulfilling its goals?

A. As with any problem like this, there will be minor setbacks as we go, but what really matters is our mindset. We must accept that there will be a transition period, and we shouldn't expect to meet the goals in just a year or two. We need to be practical and realistic and we need to have a roadmap with a timetable of what we want to achieve and when.

I think the biggest problems we'll hit in the next few years won't be technical or operational, but a problem of our confidence and belief in our concept.

We are talking about reaching a carbon peak in 10 years, but

Fu Chengyu is the former chairman of SINOPEC and former chairman and CEO of CNOOC. He has over 40 years of experience in the oil and gas industry and has been a member of various Chinese government committees and the Honorary Chairman of the UN Global Compact Network China. He is also Professor of Management Practice of Governance and Innovations at Large Corporations at CKGSB

China should increase investment in carbon capture, utilization and storage R&D ”

how high is the peak? Also, the goals we set for 2030 and 2060 are for China as a whole. So we have to understand that different provinces and regions will have very different outlooks and that we need to analyze things holistically. For example, we have some major fossil energy provinces which play an important role in the national energy supply, and if the fossil fuel-based energy production of such provinces reduces too much, it will cause energy supply problems for the country. So in order to keep an overall balance, we can reduce more fossil energy consumption in other provinces.

Some of the more developed provinces or cities rely mainly on service industries and have lower energy consumption. So we can ask such areas to reduce their fossil energy consumption/emissions more in a non-mandatory and voluntary way, and this can compensate for the other areas in which it is impossible to make big cuts at the moment. Also, we need to allow areas which have high costs related to carbon reduction more time to reach the goals, compared with areas that have a lower cost. In general throughout the transition period, we just need to be cognizant of the required balance.

Q. How should we facilitate an initial shift in focus away from fossil fuel reduction towards carbon reduction?

A. China should increase R&D investment into carbon capture, utilization and storage (CCUS). With CCUS, we need to focus on carbon dioxide as our problem and we need technology to reduce carbon dioxide emissions and at the same time, we need to turn CO_2 from a problem into a resource. Therefore, China needs to increase its R&D and investment in the utilization of CO_2. The cost of this will be much lower than shutting down the coal mines and not using oil, which would lead to an unaffordable inflated cost of living and generally slowing the development of the economy.

> **While we are striving to achieve carbon neutrality, we must keep a political, economic, ecological and energy balance**

Concerning CCUS, China is doing what Western countries are doing or have done—capturing carbon and then storing it. The scale of storage is relatively small at present, but if we can utilize all the abandoned waste oilfields in our country, there is room for a significant amount more. In general, though, we should put more emphasis on utilization rather than storage. At present, we have taken a chemical approach to utilization, but it may now be better to mineralize the carbon [to turn it into a solid mineral, such as a carbonate]. So far, some companies have begun R&D on the relevant technology and there are encouraging results. I estimate that in about a year, there will be a good industrial CO_2 mass utilization project in the Chinese market.

I must stress the importance of fully utilizing the transition period of the next 10-20 years. Once that is complete, I think everyone will be able to bear the cost of not using fossil energy on a large scale, but at the moment, it is simply unaffordable. The West has made some promises to help, but I don't quite believe they can all deliver, especially their promises to support developing countries with $100 billion a year. They've been saying that for the last 10 years and we've not seen any of that money yet.

Q. China is not the only country that needs to change its energy matrix. What needs to happen internationally in order to safeguard the planet?

A. We need to think differently because it's a problem related to human survival and living conditions, and based on what I've said here, I think China may do better than is expected of it. But at the same time, this is a worldwide issue. So, do we need to establish unified rules for the whole world, a unified standard? My answer would be yes.

Maybe some countries can achieve more and some will not be so perfect, but these standards, these norms, these principles, should be accepted by all. When they are being developed, we need to take everyone into account—developing countries, developed countries and island countries in different regions—so that everyone has the same opportunity to progress. It's also not just about environmental management, we also need to establish a unified standard for carbon footprint verification and carbon accounting, so that reporting and data is comparable.

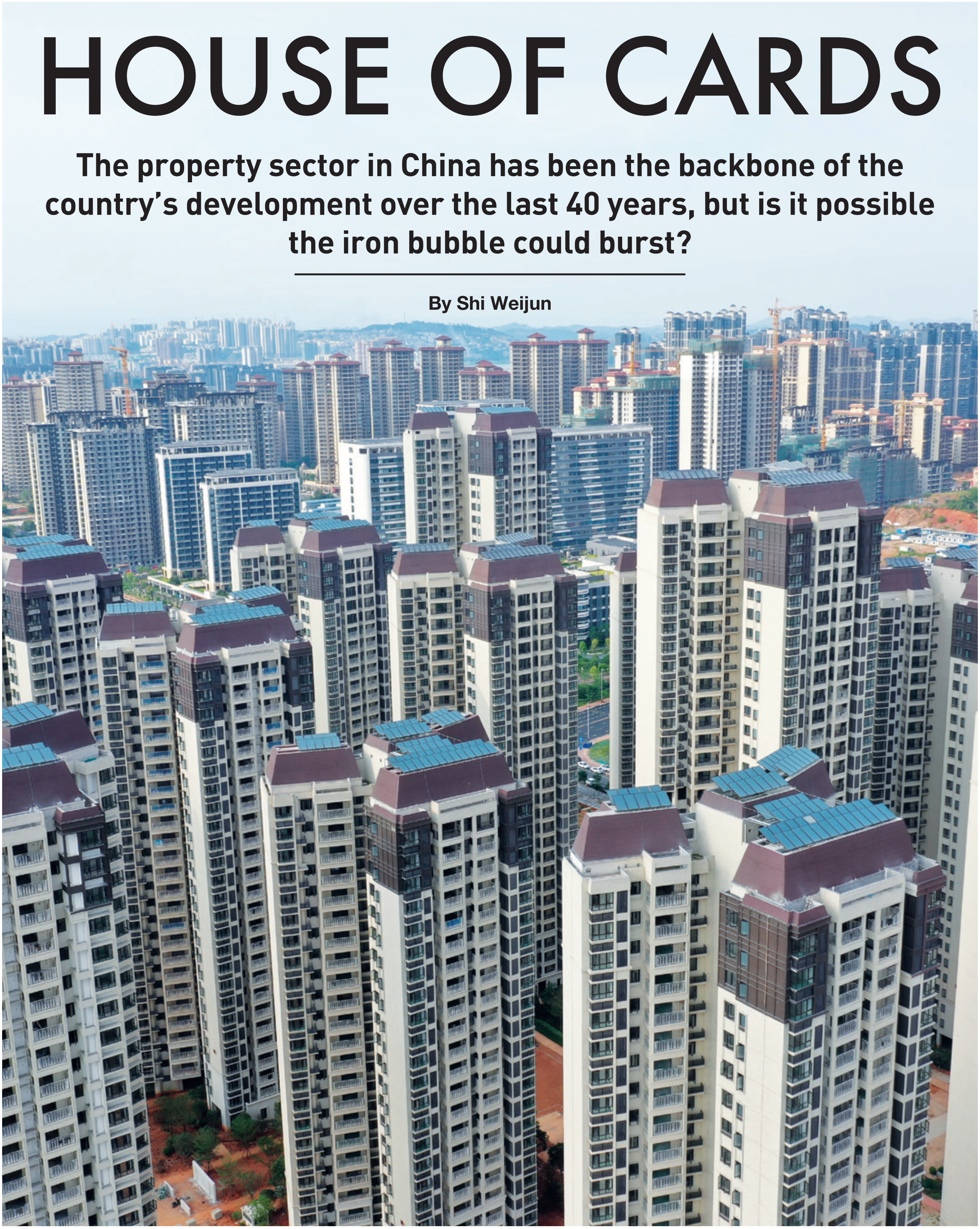
Then on the basis of comparable data, we need to establish a unified global market for the trade of CO_2 which will allow different countries to use this market to develop themselves. At the same time, concerning the commitment made by countries to support the less developed countries or island countries in order to help them reduce the emission of greenhouse gases and meanwhile help them continue to develop, there should also be a set of unifying guidelines.

Interview by Patrick Body

HOUSE OF CARDS

The property sector in China has been the backbone of the country's development over the last 40 years, but is it possible the iron bubble could burst?

By Shi Weijun



China's property sector has been the backbone of the country's growth over the last few decades, but cracks are starting to show in the foundations.

In July 2021, crowds of protesters converged on the headquarters of China Evergrande Group, in the southern Chinese city of Shenzhen, demanding their money back. It was just one of many incidents involving the country's second-largest developer that have thrown into question the stability of China's once unshakeable property market.

Evergrande, China's most-indebted property developer, has its back against the wall as it wrestles with more than RMB 2 trillion ($305 billion) of liabilities, some of which has been placed in default, leaving the company sapped of cash, funding and public confidence. And Evergrande is just the tip of the iceberg—other developers across the sector are also floundering under billions of dollars of debt as cracks start to show in the foundations of China's most important market.

"Evergrande is not the only developer in trouble that is facing liquidity issues as a result of the government's move to deleverage the sector," says Alfredo Montufar-Helu, who was previously an Assistant Director for KPMG's Global China Practice and now heads the Economist Intelligence Corporate Network in Beijing. "This presents a wider risk for China's economy."

The property market encompasses more than 80% of the wealth of Chinese households. "Property's most important connection to the real economy is it's where people keep their savings," says Nicholas Sargen, a senior economic advisor at Fort Washington Investment Advisors.

Property remains a pillar of China's economy, with more than one quarter of China's GDP stemming from related activity. But the longstanding sense of the property market as being a one-way bet with never-ending growth is coming to an end and a period of plateaus or even falls in some areas of the sector could be in prospect.

China's aging population and decreasing birthrate also pose fundamental challenges for the property market in the long-term. China's population is expected to move into decline this year, with 12.4% of the country currently over 65 and births outweighing deaths by only 480,000 in 2021. These factors are, in a highly dispersed way almost invisible to the statistical eye, already impacting on vacancy rates and market demand in many cities.

The property slowdown, with reduced land sales, reduced sales of apartments and struggling prices, was a key factor dragging down China's GDP growth rate to just 4.9% year-on-year in the third quarter of 2021. "I think what we're looking at now for property is the beginning of a structural stagnation," says George Magnus, former Chief Economist at UBS.

A grande crisis

In August 2020, Chinese regulators and the People's Bank of China (PBOC) sought to rein in over-leveraged property developers by introducing their "three red

> The story of Evergrande is the story of the deep and structural challenges to the Chinese economy related to debt
>
> George Magnus
> Associate at the China Centre
> Oxford University

lines" policy that set specific limits on liability-to-asset, net gearing and cash-to-short-term debt ratios. Recognizing that demand-side restrictions such as limiting mortgage availability did little to contain housing prices, policymakers shifted their priorities to the supply side, setting debt limits on property developers.

And Evergrande is simply the most visible face of these embattled developers, there are dozens of others—Sinic, Modern Land and Kaisa, to name a few—with liabilities of around $30 billion each. But the attempts to rein in developers' debt has brought other issues to a head.

Without cash, developers have given land auctions the cold shoulder with 27% of land parcels up for sale in September 2021 going unpurchased. Land sales, a key source of income for local governments in China in the absence of a property tax, fell 11.15% in September compared to a year earlier, following a drop of 17.5% the previous month. Housing prices have also fallen in several places, but some local governments have set a floor on how low they can go.

The unexpected emergence of uncertainty in the Chinese property market has had a big impact on smaller firms beyond the major cities. A total of 309 property developers went bust in the first nine months of 2021—more than one bankruptcy a day. All in all, the opportunities for riches that the sector offered are just no longer there.

The property complex

The property sector has been China's economic darling for over 30 years, driving development and contributing huge chunks of the country's economy—29.7% of China's economy in 2013-2014 stemmed from property and related industries. By comparison, the share of property-related activities peaked at 18.9% of US GDP in 2005, and stood at 17.5% last year.

Property's role as a key contributor of Chinese growth is rooted in the late 1980s, when the State Council undertook a number of initiatives that essentially gave Beijing's blessing to the commercialization of housing, according to Magnus. "It wasn't until after 1989 that the State Council established property rights for privatized housing as part of housing reform. Prior to then, there was no property market in China," he says.

Property ownership in China is only leasehold, not freehold, with a maximum time of 70 years, but it took a step forward as an asset class when in 1998, the State Council released a policy document that abolished the old system of allocating housing with work units. "The directive signaled the death knell for the previous system and opened up what we would now call the conditions for a proper housing market," says Magnus.

Tax reforms in 1994 essentially centralized tax revenues that hitherto had gone to provinces while at the same time, local governments were prevented from issuing debt but were still tasked with hitting high economic-growth targets that sometimes exceeded 10% a year. Selling land became one of the few things municipal officials could do to generate revenues, which would in turn finance road construction and other public works.

"Local authorities were happy to rely on this revenue because it filled the fiscal gap," says Andrew Collier, managing director of Hong Kong-based Orient Capital Research. "But this arrangement meant economic growth was tightly bound to booming property."

As with other sectors, the debt bubble in China's property market started inflating after the global financial crisis in 2008-2009, when Beijing launched a large fiscal stimulus package that resulted in significant investment in infrastructure. Bank loans flowed to developers, exacerbating high levels of debt while supporting GDP growth.

Alarmed at ballooning debt, the authorities started to curb financing, and shadow lending soon became a huge source of capital for swathes of the economy—including developers. In 2015, the government began to focus on debt deleveraging to tackle structural issues including local debt risks.

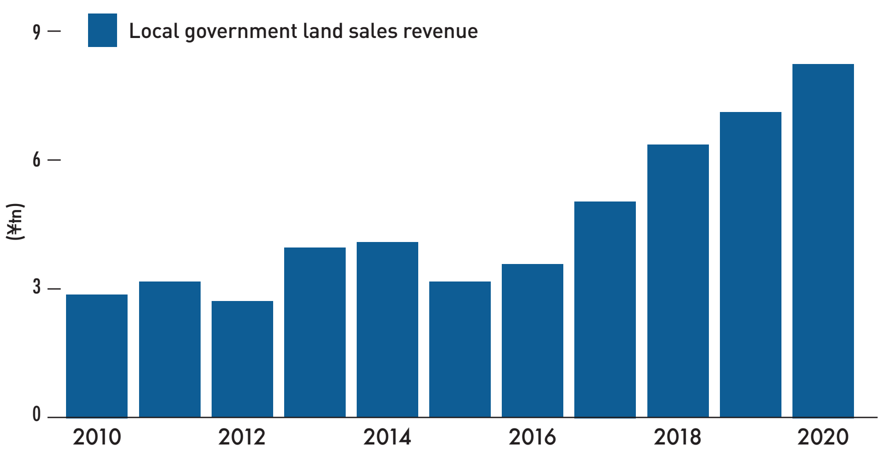
Evergrande's problems are simply a reflection of the debt burden and underlying risks in China's economy, according to Magnus. "The story of Evergrande is the story of the deep and structural challenges to the Chinese economy related to debt."

Shaky foundations

In October 2021, Morgan Stanley estimated the total debt exposure of Chinese property firms stood at approximately RMB 18.4 trillion—greater than the UK's economic output and equivalent to 18% of China's GDP last year. A dozen property developers reported bond defaults in the first half of 2021. Property firms have RMB 1.28 trillion of debt due over the next year, but total bond issuance both onshore and

RELIANCE ON LAND

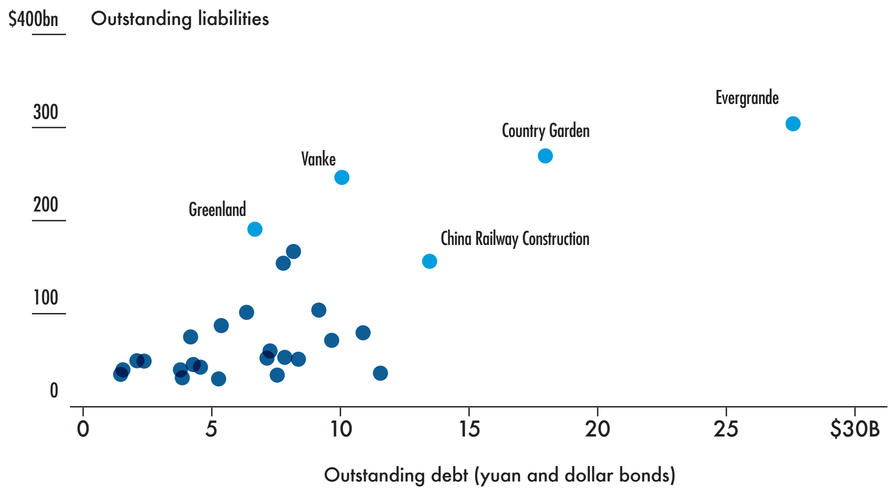
Land sales have been an increasingly integral part of China's provincial governmental funding



Sources: China Ministry of Finance; Yuekai Securities

SPIRALING DEBT

China's top 30 developers have accumulated a huge amount of outstanding liabilities and debt



Source: Bloomberg

offshore by developers in the first eight months of 2021 slumped by 21% year-on-year, curtailing the ability to use new borrowing to repay old debt.

This enormous debt buildup has potential repercussions beyond the property sector and beyond China, with 30% of current bonds issued offshore. Central authorities have been fearful of the risk of financial contagion. "Beijing is very concerned about an uncontrolled property downturn that becomes a financial crisis," says Collier. "They are hoping to control the popping of the bubble."

Any shocks to China's property values would have a significant impact on household balance sheets and particularly their debt leverage ratios. This will in turn have implications for consumer spending, with buyers more likely to take a "wait-and-see" approach. For upstream industries such as construction, the impact of the Evergrande crisis and the wider slowdown of the property sector has the potential of being very painful. Among Evergrande's $300 billion worth of liabilities, it is estimated that 34% are trade and other payables that the company owes to suppliers.

"Evergrande and other developers not only owe to banks, but also to their suppliers—which means that many of these suppliers may lack the capital to continue operating," says Montufar-Helu. "This is exacerbating the ongoing cooling of the property sector, as it is both affecting confidence of prospective property buyers and lowering incentives to continue building. This whole situation is affecting the profitability and stock valuations of firms that operate in the real estate value chain."

Property's star role as the primary source of household wealth in China means speculative bubbles were always a possibility—a problem exacerbated by the 70-year land lease arrangement and the absence of property taxes, which together encourage people to flip new units rather than hold them.

"Trying to control a real estate market is a difficult problem because it's the most important asset that the average person owns," says Magnus. "Not only does China have very strong vested interests in preserving the stability of the property market, but wealth, consumption, saving patterns, and livelihoods are all tied up in maintaining the bubble."

The market downturn has brought back into focus the considerable long-term challenges facing the property sector. The fact is that as much as one-fifth of housing inventory in China is empty. In the past, authorities have often resorted to demolishing old dwellings as part of urban renewal. The government has bet on urbanization to fill the enormous empty inventory, but China's aging population and decreasing birth rate create challenges for this plan.

Rippling out

Investor confidence has been clearly rattled by Evergrande's debt fiasco and the wider problems in property, as underlined by a slump in demand for dollar bonds sold by developers in September and a spate of credit rating downgrades. The property sector's contribution to the Chinese economy shrank in Q3 by 1.6% year-on-year, for the first time since China's short-lived pandemic in early 2020.

A property slowdown has serious consequences for global commodities, too. China's massive demand for them, from iron ore and oil to copper and steel, puts the country at the center of the global commodities trade. "If the consumer sector is hurt, then that's going to affect demand for goods globally," says Collier.

But initial speculation that Evergrande could become China's equivalent of Lehman Brothers—where the collapse of the Wall Street bank in 2008 sent shockwaves through the US and global economies—was overdone.

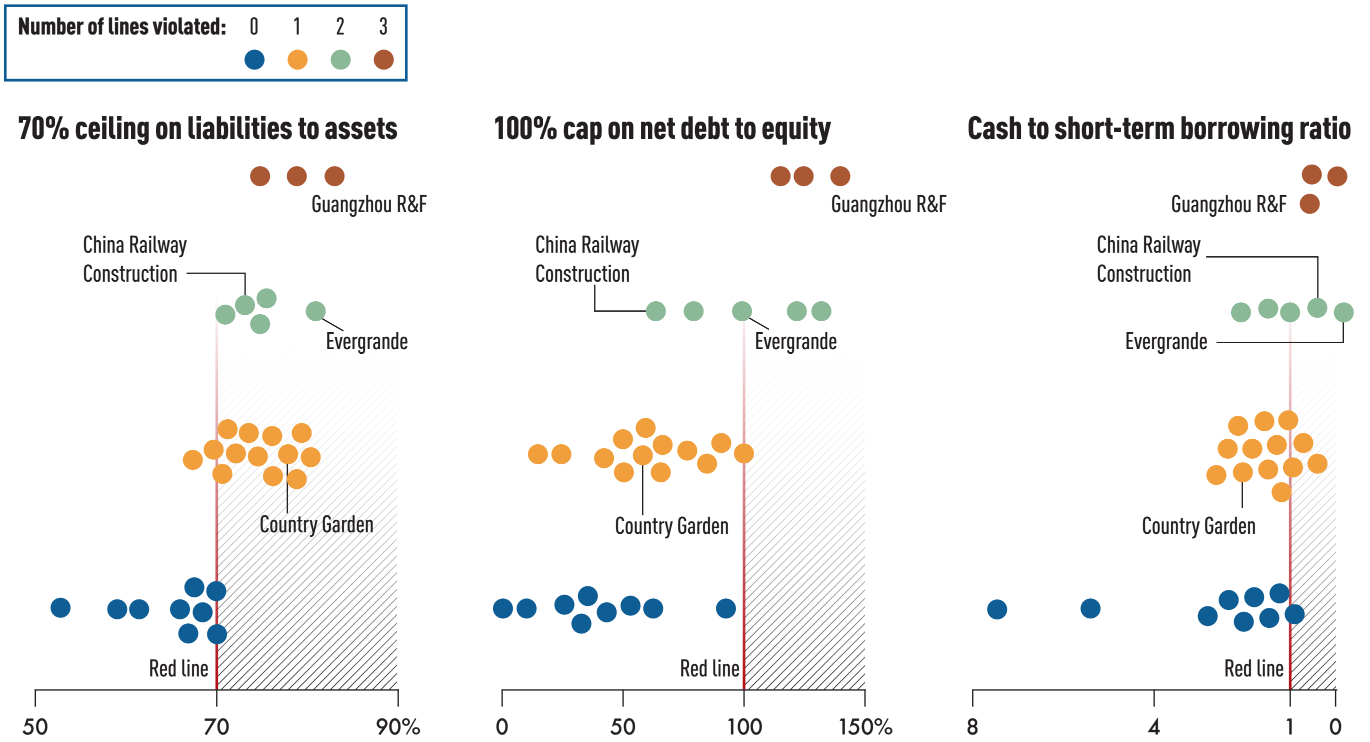
"A Lehman moment isn't likely in China because all of the principal actors can be influenced or forced to participate in the allocation of Evergrande assets and liabilities," says Magnus. "They are either state-owned or will do what the government tells them to do."

Rather than a sudden convulsion like Lehman, Sargen from Fort Washington Investment believes the consequences of pricking China's housing bubble could play out over a long horizon as the financial sector's exposure to property is mainly via bank lending.

"If you have loans and not marketable securities, then it plays out in slow motion," says Sargen. "For China, it's going to be a messy workout, which means there could be losses, but it will take longer to realize those losses."

BETWEEN THE LINES

The Chinese government has set three red lines for property developers and two-thirds of the top 30 have crossed at least one



Source: Bloomberg

Promise of the property tax

China is one of the few countries around the world that does not have a property tax on the ownership of private residential property, forcing local governments to rely on land sales for a substantial part of their income. The government has tried on several occasions to institute a property tax but has so far always had to back down due to a virulent reaction from the market.

But despite longstanding resistance, the central authorities are now again insisting that a property tax will be instituted at some point and in some way. "A nationwide property tax has been mooted since 2011 and could or should have been implemented any time since," says Magnus. "In one way it's easier to do it now under the 'common prosperity' slogan, but it's clear there's still huge resistance from local governments and the urban middle class. By 2025, the state of the property market itself may make implementation harder. But it's still the right thing to do."

And while Montufar-Helu believes a nationwide property tax is unlikely to be instantaneous, a homeownership levy is a no-brainer in the long term. "There is no question that a property tax will be expanded nationwide at some point, but this will also have to be weighed against any negative impact on the real estate sector," he says. "Authorities will also want to avoid hurting middle-class incomes and triggering capital flight. This means that the tax will most likely be phased in gradually."

Beyond a property tax, it is difficult to say what the long-term policy implications of the current crisis will be, the introduction of the "three red lines" was an attempt at curbing borrowing but is not a solution in and of itself. What Beijing will decide to do from here is the question everyone is asking.

Time for renovations?

Given its centrality to the world's second-largest economy, there is an argument to be made that the Chinese property market is the most important of any market in the world. This makes it crucially important that the Chinese government treads carefully on how they reduce the risks of the property bubble without deflating it entirely.

"Chinese property has been on a very long and protracted upcycle, and I do think it's peaked now," says Magnus.

The end of unfettered growth in the property sector is symbolic of a wider shift in focus for China's leadership and the country as a whole.

"I think what we are seeing now represents a turning point for China's real estate sector," says Montufar-Helu. "The boom that characterized this sector in recent years is over. And this is because, for China's top leaders, making property more affordable and avoiding a real estate bubble burst are top priorities, both to achieve sustainable economic growth and to maintain social stability."

Solving the Fertility Conundrum

China's ultra-low fertility rates will severely hamper the country's growth in the coming years. What must be done to reverse this worrying trend?

By Ouyang Hui, Distinguished Dean's Chair in Finance, CKGSB
Wu Weili, Associate Professor of Finance, Central University of Finance and Economics

Population is the most important basis for economic growth and for a long time, an ageing population was considered the preserve of developed countries. In 2020, there were 12 million births in China, not only a record low, but also far lower than previously expected. The country now has a total fertility rate of 1.3 for women of childbearing age, which is significantly lower than the replacement fertility rate of 2.1 and, rather more worryingly, below the international warning threshold of 1.5 that signifies a "low fertility trap."

In explaining why China's fertility rate is so low, there are the oft-cited factors of economic and social development, East Asian culture, the psychological impact of the one-child policy, education pressures and the burden of housing prices. But how accurate are these explanations and, in the light of international experience, can low fertility rates be reversed?

Low fertility rates

Economic and social development is generally the first thing that defines fertility rates—as a country's per capita income grows, fertility rates usually fall. But this hasn't been the case for China where the fertility rate is well below expected levels. A country with China's per capita income should expect to see a fertility rate of around 2.3.

The inherent pressures of East Asian culture are often cited as one of the reasons for low fertility rates, but the reality of the data suggests that this is no longer a bullet-proof excuse. For example, Japan, which has always been considered a relatively childless country, has a fertility rate of 1.4 which, when compared to their GDP per capita of around $39,000, places them well above the GDP/fertility rate trend line. Singapore's fertility rate also exceeds the theoretical level and South Korea and Taiwan have fertility rates that are 0.5 below the theoretical level—a gap usually attributed to high education costs and fierce social competition. But for China, the gap is a staggering 1.0, which should correlate to a GDP per capita of $40,000, four times the current number.

Why are rates so low?

There are several different contributors to China's exceptionally low fertility rate, the first of which is a lack of change in psychology of family planning at the level of individual couples in spite of the change in family planning policies. Somewhat counterintuitively, the relaxation of child-related government policies hasn't had the level of impact on fertility rates that people expected. Before the change from a one-child to a two-child policy in 2016, many predicted that births would rise to an annual peak of 40 million, but the actual peak was around 18 million and since 2018 the number has fallen to a point below pre-two-child policy levels.

The long-term implementation of the single-child policy has shaped the social concept of fertility. Most young Chinese today, and their parents have grown up in only-child scenarios and do not see any problem with that as the status quo, nor do they feel they have any incentive to change. This is in stark contrast with the US, where if a family decides to have a child, they very rarely stop at one.

Fertility intention surveys—ascertaining the level of desire to have children—in China indicate there is an increasing number of people who do not want to have children, compared to those who intend to have one or two kids. But these results vary based on the strictness of legacy policies at the local level, with eastern Chinese provinces that have historically had stricter limits on procreation having the lowest level in terms of intentions.

Pre-existing family planning policies have also reduced the number of women of childbearing age in the Chinese population, the impact of which has been, and will continue to be, enormous. There are now 13% less 20-35 year-old women in the country than there were 10 years ago and this number is expected to shrink by a further 30% over the next decade. Japan exemplifies the issue—its fertility rate has risen steadily since 2005, but actual births are down due to a lack of childbearing women.

A second contributor to China's low fertility rates are East Asian cultural influences prevalent in the region. Both Japan and Singapore are East Asian nations with "normal" fertility rates, but this is generally understood to be the result of the various fertility incentives pursued in each country. And while these two are outliers, from the abundance of research on the topic, there is a consensus that East Asian culture today is tending to suppress fertility rates.

There are several defining cultural factors that have a knock-on effect on fertility rates: a high emphasis on the importance of education can be both expensive and keep women in education longer, meaning that they have their first child later; the higher expectations of domestic responsibilities on Chinese women; Chinese working culture promotes hard work and long hours which mean less parenting time available; there is social resistance to having children outside of wedlock; and, with a higher number of women in the labor force in East Asia, the opportunity cost of having children is higher.

The issue is made clearer by comparing the fertility rates of East Asian communities in the US and Canada with the focal mainstreams—even when educational expectations are controlled for, surveys have found that the fertility rates of the East Asian communities are noticeably lower.

The third contributing factor is a combination of social issues that take their toll on fertility rates. The impact of high housing costs has been felt particularly in large and medium-sized cities where there are additional cost pressures for families to deal with. The Chinese education system, for example, is highly dependent on family resources because of the fierce level of competition for college entrance and the uneven distribution of the educational resources available. Rapid economic and social progress has caused anxiety for parents with regard to their children's performance and the ubiquity of the internet, which allows for easy comparison, has only exacerbated the issue.

Many prospective Chinese parents have made it clear that they would prefer not to have any children if they are unable to give them everything they need, and the spiraling costs of housing and education are making this increasingly likely.

Improving geographical mobility has also impacted China's fertility rate with more mobile youth moving to cities and away from their partners. And, even if couples were to move together to the same city, the way that the Chinese internal migratory system is set up makes it difficult for these couples to buy property, receive adequate medical care and access education for their children—thereby lowering fertility intentions. There is a general perception that rural areas have higher fertility rates, but the ideal number of children for couples in rural China is also less than two, lower than the equivalent rates of both Japan and South Korea.

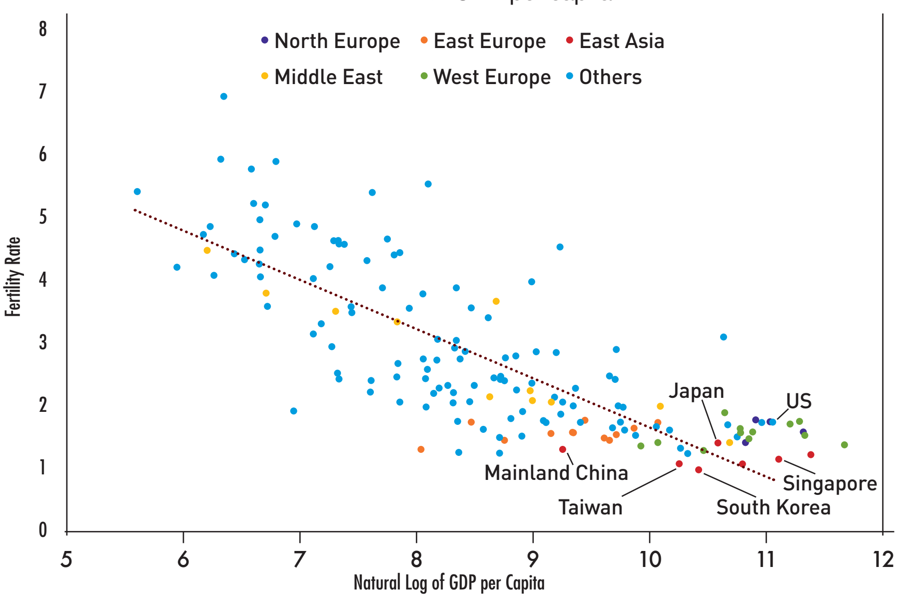
Is low fertility reversible?

Post-war international experience has shown that reversing declining fertility rates is possible, but not easy, as rebounds are often just a modest step-up from an already low baseline and subject to recurring slumps. In the 1970s, the US, Europe and Japan all saw their fertility rates drop sharply due to the proliferation of contraception and entrance into a period of economic stagflation. Around a decade later, when the countries were emerging from that economic slump, fertility rates started to rise but only at around one-fifth the rate of the previous decline.

In order to get statistics moving in the right direction, significantly improving a country's economic prospects appears to be one of two main approaches. The other is the creation of strong government

FALTERING FERTILITY

China's fertility rate is significantly lower than average when compared with its GDP per capita



Source: CKGSB

policy support, such as that found in Nordic countries.

After introducing a range of policies to encourage fertility in the 1980s, the Nordic countries—which include Sweden, Denmark, Norway, Finland and Iceland—saw fertility rates rise by 0.3-0.6% over a five-to-ten-year period and rates have generally remained at stable high levels since then. Sweden's perennially high fertility rate is, in part, related to its impressive per capita GDP of over $50,000, but even accounting for this, the country's fertility rate can be considered high.

Policy has been known to work best when it involves multiple approaches and multiple levels, and the more generous the better. Sweden offers parental leave of 480 days to be used before a child turns eight, and both parents are entitled to 60 days of leave with the other 360 to be split between them. For the first 390 of those days, there is a childcare allowance that is paid at a rate of 80% of the parent's income. Families with no income are paid 180 kronor (RMB 125.85) per parent per day, with the remaining 90 days paid at a flat rate.

There are also incentives in place for shortening the time between births, a robust system of childcare services—kids over one can be placed within three to four months of applications and parents pay just 8% of costs—and there is a strong support system that allows parents to raise kids without interrupting their work. Total family welfare spending in Sweden is over 3% of GDP, much higher than in countries like Japan, South Korea and Singapore.

For policy to be effective there also needs to be an understanding that it is a long-term process and successful implementation will have both a significant time-lag and will involve future drops in fertility rates. Singapore introduced policies in 1984 but saw no rise in fertility rates until 1986, after which it rose steadily for four years before trending back down. Japan had an even longer lead time, introducing policies in 1990 and only really starting to see improvement in 2005.

The lower the starting fertility rate and the longer the status quo has been held, the weaker the effect of policies in boosting rates will be and the harder it is to reverse fertility trends. The main reason France has maintained a fertility rate of 1.9 to 2—close to replacement fertility rate—has been its continued focus on its population since the 1930s.

Government policy is not a blanket solution and responses to different policies vary depending on demographics. Childcare cash subsidies are more effective for households with low incomes and education levels and have a greater impact on increasing third or higher births, than encouraging families to have a first or second child. In contrast, maternity leave systems work better for high-income households as the main constraint on these couples is time, rather than money.

In South Korea, where high housing prices are a limiting factor on fertility intentions, the introduction of a policy providing 50,000 units of subsidized housing per year to low-income newlyweds, in conjunction with longer maternity leave and higher fertility subsidies has been shown to have a positive effect on fertility rates.

What can China do?

The ultra-high welfare policies of the Nordic nations are based on their strong financial resources and a per capita GDP that is five times higher than China's. Obviously, there is little chance that China can replicate such policies, but what the country does have is a social elite that can shape opinion and behaviors, something it can utilize in the pursuit of rectifying its fertility problem.

The government should also step up its propaganda efforts, using less rigid slogans and providing more guidance showing the benefits of having children. By using various media, they can highlight the emotional benefits, the difficulties an elderly population will face without children to take care of them, more favorable views on marriage and an increased sense of male familial responsibility, among other things. The aim is to strengthen propagation and increase popularization of policies that support childbirth and help families fully utilize the aid at their disposal.

The decision to have children is multifaceted and therefore solutions require a comprehensive and coordinated policy approach utilizing business, society and governmental actors. A strong top-down design that includes cash subsidies, increased parental leave and development of a childcare system in line with education and housing policies is a necessity. Incentives such as tax breaks for companies that run childcare services can be used to encourage business involvement.

These policies also need to be correctly aimed at relevant demographics. Some families in China would benefit from the maximization of policy dividends through shared parental leave, while internal migrants would see better results from household registration reform. At the same time, different regions should introduce locally-tailored reforms.

The motivations behind these changes have to be scientific in nature and come from a long-term perspective. It is key that all policies are researched and tested before being implemented, pilot schemes are used, policy makers are cognizant of the long-term impact of different policy options and that they avoid deliberate focus on short-term results. For example, instead of choosing to punish companies for the unfair treatment of new mothers—which often leads to businesses avoiding employing women altogether—it is better to provide organizations with flexibility and reward those better at protecting women's rights.

Raising rates

Promoting fertility and increasing fertility rates is hard, long-term and requires ongoing commitment. China's one-child policy is deeply rooted in the country's psyche and the fertility rate has remained low for a significant period of time, making any change a massive challenge. China needs to be prepared to fight a long-term battle and wait for policies to take effect before abandoning them. For starters, the country needs to move away from a focus on massive growth and take the first steps towards stopping fertility rates from continuing their decline.

A Political Give-and-Take

Lee Jones, professor and co-author of *Fractured China*, discusses how decisions get made in China and where the balance of power lies between the center and the various provinces

The go-to Western view of China is that it is a well-oiled and highly-centralized decision-making machine. But in his book *Fractured China: How State Transformation Is Shaping China's Rise,* co-authored with Shahar Hameiri, Lee Jones, a professor in international politics at Queen Mary University of London, argues that there is much more of an ebb-and-flow of power and decision-making between the Chinese Communist Party (CCP) and actors at the provincial level and beyond.

In this interview, Jones discusses top-down and bottom-up policy generation, the impact of programs such as the Belt and Road Initiative (BRI) on the behaviors of domestic and international actors, and the current shape of the Chinese system.

Q. In your book, you argue that China is no unitary actor and local politics and competing domestic interests help to shape its domestic and foreign policy behavior. Can you expand on this?

A. China does give the appearance of being a highly centralized, top-down, authoritarian system. There's always been a certain amount of envy in the West about this system because they can just get things done, compared to the paralysis and drift that we see in a lot of Western policies. But if you look at the literature on Chinese domestic politics, sinologists have been documenting the rise of "fragmented authoritarianism" since the late 1980s, which gives a picture of the Chinese party-state as something that's much less cohesive and coherent. There's this massive gap between the way that specialists write about China's internal politics, and the way that international relations scholars think about China. In this book we are trying to bridge that gap.

We focus on the way the state is evolving in response to changing sociopolitical struggles and changing political economy dynamics. What's happening in China is not a unique process of reform and opening up and the fragmentation of authoritarianism, but it's part of generalized tendencies that are affecting states all around the world. We theorize this as involving three kinds of transformations, first, fragmentation of state authority and decision-making, second, the centralization of power, authority and control over resources and third, the uneven internationalization of the state.

It's not the case that the central authorities in China simply instruct lower-level agencies what to do so that those agencies are just implementation tools of top leaders. The picture is much more complex. The command-and-control system that used to exist under Mao has been replaced by a Chinese-style regulatory state, where the center is setting out quite broad and often vague directives and objectives. Then, it's left to a range of different actors at national and sub-national levels, to work out what these things mean and implement them in practice.

The center has various mechanisms to steer these fractured actors, such as slogans and ideological campaigns, coordinating committees, the leading small groups, policy and funding support,

Lee Jones is a professor in international politics at the Queen Mary University of London, having previously worked at the University of Oxford. He specializes in political economy and international relations with much of his work focusing on China and Southeast Asia. He has recently co-authored a book with Shahar Hameiri called *Fractured China: How State Transformation Is Shaping China's Rise*

and most importantly, the Communist Party's own powers of appointment, appraisal and discipline. These other actors can respond to the coordinating mechanisms in a variety of ways, they can influence these mechanisms, they can try to shape emerging policy frameworks in ways that benefit them. Chinese policy, and also Chinese foreign and security policy, is not just this centralized top-down result of a handful of people at the top making decisions, it is the result of a constant process of bargaining, lobbying, accommodation, distortion and even defiance among the different interest groups that populate the party-state.

Q. Can you expand on these three different kinds of transformation?

A. They're analytically distinct, but connected and mutually constitutive in practice. The first is fragmentation, or the dissolution of command-and-control centralized forms of authority through a constant reforming of the Chinese party-state. The number of ministries and national level actors has multiplied and attempts to reduce the number have never really worked. So, what you have is policymaking, decision-making and funding decisions being spread across multiple actors at the national level, and that is also duplicated at the sub-national level. You often find that multiple agencies have some kind of decision-making power in an area. Instead of making it very clear that ministry X controls this particular area, and everybody else clears out the way, there's an overlapping, fragmented system of authority and control.

> [Chinese policy] is the result of a constant process of bargaining, lobbying, accommodation, distortion and even defiance among the different interest groups that populate the party-state

Decentralization is the devolution of decision-making power, authority and control over resources to sub-national government. Particularly important are provincial governments because they have a role in foreign policy now, they can manage their own external economic relations and they have been signing trade and investment cooperation agreements with governments as far afield as Africa. Sometimes these provincial governments can take a lead in certain policy areas or certain regions. Yunnan, for example, and now Guangxi, are lead agencies in the Greater Mekong sub-region and they take on a leadership role in that part of China's foreign relations.

Finally, internationalization is where agencies that are initially created for purely domestic purposes, take on an international role. The most obvious example is state-owned enterprises (SOEs) that were formed to supply domestic markets and perform domestic social functions like employment and welfare provision have now become major international actors. Because they're part of the state, they're often seen as the instruments of some central plan, when generally speaking, they are now, as a result of the transformation of these enterprises, profit-seeking, independent actors.

Many agencies in China now have an international department, and they're all, especially in the BRI era, being urged to cooperate with their foreign counterparts. The classical idea that we have of states as being relatively closed-off actors that only interact through a select number of agencies, is completely antiquated.

Q. How was this somewhat-decentralized framework created and how does it work in practice? What happens when provincial and central government goals are not aligned?

A. The decentralization process is part of China's shift from Maoism to capitalism. You allow local governments freedom to experiment with pro-market reforms, you see what happens, and if it works, you scale it up and spread it around the country. If it doesn't work, you junk it. There is the old cliché of Deng Xiaoping's "crossing the river by feeling the stones," an explicitly experimental approach to governance. That has allowed provincial and sub-provincial actors to pursue their own development objectives, some of which have an international component.

There is an attempt to develop the economy through opening up to foreign trade and investment, especially for those provinces on China's borders. So there is an attempt to collaborate with foreign governments in those neighboring countries to open up those markets to Chinese companies to gain economic advantage. The way that it works is that the center sketches out broad objectives and frameworks, and then responsibility for fleshing that out is decentralized to sub-national governments.

Sometimes, even the central policy framework is the result of bottom-up lobbying from local governments. They'll push for some kind of framework, like the Great Western Development campaign, which was launched at the end of the 1990s as a result of poor inland provinces lobbying for central support to catch up with the richer, faster-growing coastal regions. The center responded by creating an infrastructure-funding scheme, broad funding commitments and broad ideas about opening up across borders. Actual implementation was decentralized to provincial and even sub-national agencies. This was the forerunner of the BRI.

Q. How do you see the BRI developing over the next few years, given the conflicting signals between China's determination to maintain the momentum of development investment in various places and also pushback from some countries around what some characterize as onerous requirements in terms of debt repayment and other issues?

A. The process of linking China to its neighbors through infrastructure projects was going on for a decade before Xi Jinping became leader, but what the BRI does is formalize and give a large-scale framework to such activities. It wasn't until 2015 that any central guidelines were developed over what the BRI actually was, and if you study that period, you can see that there was a ferocious lobbying effort, particularly from provincial governments, to get their projects included in the BRI. Some of the provinces that were initially supposed to be included were edged out by the more sharp-elbowed ones, the number of actors involved increased substantially, and the scope of the project was transformed.

It started off as something that was seen as part of China's so-called "neighborhood diplomacy" aimed at neighboring countries—this is why sometimes you hear the figure of about 65 countries quoted, which was true initially, and then it widened to include other countries, becoming a global initiative by 2015. This wasn't how it was initially thought of, but it was the result of all this bottom-up influencing.

The goals are very broad—connectivity, infrastructure, growth, cooperation. There's nothing very specific about them. So that creates a framework that many different actors can orient themselves within, and benefit from it by pursuing their own sectional objectives. The Chinese are learning quickly and trying to improve the quality of BRI projects.

Outbound investment peaked in 2017 and it's been declining since, and that's probably a trend that will continue to some extent. The BRI is not going anywhere, because it's too closely associated with Xi Jinping and it's been written into the Chinese constitution. But it will continue at a lower level, perhaps with fewer projects but of a higher quality with attempts to demonstrate commitment to sustainability goals. This is a constantly evolving framework.

> There was a ferocious lobbying effort, particularly from provincial governments, to get their projects included in the BRI

Q. What are the trends you see now in terms of a "Fractured China," geographically and in terms of economic, political or social issues in different areas? What impact do you think they're going to have over the coming years?

A. We are not claiming that this is some kind of unilinear process towards dissolution. The metaphor I use is that it's a tug-of-war, that there are differing opinions on where authority should lie, how much control local governments should have, where funding should be allocated, etc.

In broad terms, a sort of Big Bang decentralization was happening in the mid-to-late 1980s, which was then partially reversed in the early 1990s fiscal reforms. And then there was a more lax period where central government drifted quite a lot and then Xi Jinping came in and tightened the grip again. So there's this dialectical movement back and forth. There are reasons why he's done that as he comes into power, at a time when the CCP's authority and legitimacy had been undermined by these local predatory networks that had been allowed to emerge as part of the experimental reform process. There is talk about local "mafia" states being uncovered through the anti-corruption drives, and looking at the publicly available legal documents, some local entities had been incredibly corrupt and predatory and therefore really compromised the CCP's political legitimacy. Xi is, above all else, trying to restore and shore up the party's power and authority by showing that he takes these issues seriously, by cracking down and reasserting the party's central leadership and power.

The tendency at the moment is towards greater centralization, but this isn't a change in the nature of the game itself. It doesn't amount to a structural change in the way that power works in China, because what Xi Jinping is doing is using all the mechanisms available to him: slogans, ideological campaign, leading small working groups, the CCP's powers of appointment, appraisal and discipline. He's just a very strong player of that game.

Interview by Patrick Body

ALTERNATE REALITY

The idea of an interconnected virtual world is gaining in popularity globally, but there is a possibility that China's metaverse will develop in parallel

By Shi Weijun

Image by Jason Wong

The metaverse is touted by many as the next stage of the internet. But what exactly is it and how will the China system affect its development within the country?

The metaverse is shaping up to be a wild-west opportunity for economic development unprecedented in human history, with virtual worlds stretching out to infinity. It is becoming a global reality with blinding speed and China is determined to be at the forefront of it.

The term metaverse is increasingly being used for the next generation of the internet and describes the immersive and interactive shared virtual worlds that more and more people are accessing for work, play and life in general—and iterations of it have been around for longer than you might think.

While the concept is still in its infancy in terms of its application, some aspects are already present in gaming, entertainment and professional contexts across China, and many companies are betting big on it. Tech titans ByteDance, Tencent and Alibaba are among the more than 1,000 Chinese companies that have applied for metaverse-related trademarks. And in the US, social media giant Facebook has even re-branded itself as Meta Platforms in its search for metaverse dominance. The global market was valued at $500 billion in 2020 and is predicted by Bloomberg Intelligence to reach $800 billion by 2024, the value of the metaverse market in China is more difficult to calculate, but it is certainly growing extremely fast.

Current examples of the metaverse include apparently authentic virtual reality chat rooms that can be used in both personal and professional environments, virtual celebrities performing and and selling products on e-commerce apps—a market expected to be worth around $1 billion in China in 2021—and world-building and gaming software such as *Roblox* and *Fortnite*.

Virtual reality (VR) and augmented reality (AR) are fundamental components of the metaverse as the multimedia technologies are necessary for delivering immersive, interactive experiences to consumers. Both are still far from mainstream but there are a huge number of potential applications, as Alibaba demonstrated in 2018 when it launched an AR-infused shopping app called Taobao Buy that brings 3D versions of products into the real world.

"What is the metaverse?" asks Li Yang, Associate Professor of Marketing at CKGSB. "Is it wearing VR goggles, is it Facebook changing its name to Meta, is it playing *Genshin Impact*, swiping through Tik-Tok or buying NFT's? In fact, the concept of the metaverse is still not entirely clear."

But thousands of companies around the world are putting huge amounts of money into metaverse development and those viewed as being leaders in this new digital frontier are seeing massive increases in their share prices. Tencent's management spoke at length about the metaverse on an earnings call in mid-August 2021, describing it as "a topic of great interest to us, albeit a longer term rather than an immediate opportunity."

Days later, ByteDance acquired VR headset startup Pico Interactive for a reported RMB 9 billion ($1.41 billion), a deal that the TikTok owner said would support its "entry to the VR space and long-term investment in this emerging field."

But not everyone in China's tech circles has caught the bug. "The metaverse concept is heading toward a peak of over-anticipation," said Baidu vice president Ma Jie in November 2021. "I believe the bubble will burst in the second half of next year or the year after. When the tide goes out, you will be able to see who's holding trump cards or their underwear." This view, however, hasn't stopped Baidu from joining the fight for metaverse-related trademarks.

The metaverse's Big Bang

The prevailing opinion is that the metaverse is the inevitable successor to the internet. The term comes from American author Neal Stephenson's bestselling sci-fi novel *Snow Crash* from 1992, where it referred to a shared virtual cityscape that is inhabited by both human-controlled avatars and digital "daemons." Although Stephenson later said he was just making things up, his novel had a huge impact, including on many movies such as *The Matrix*, and to some degree the development of the internet itself.

But the concept arguably dates as far back as the 1980s, when text-based interactive games such as multi-user dungeons (MUDs) emerged shortly after the dawn of the internet, according to Wei Cai, associate professor at the Chinese University of Hong Kong, Shenzhen (CUHK), who coauthored a research paper this year about the metaverse's potential for social good.

Among the numerous interactive games was TinyMUD, which permitted players to create a game world for others to explore—one of the earliest instances of user-generated content, another pillar of the metaverse. From there, the internet advanced with rapid improvements in computing power and computer graphics, from early virtual open worlds in the 1990s to modern prototypes of the metaverse such as *Second Life* in 2003, *Roblox* in 2006, *Minecraft* in 2011 and more recently *Fortnite*.

And there were aspects of the metaverse on show in the early days of the internet in China, such as Tencent's QQ Show. "Many years ago, it had a business model of advertising on social networks, however this was upgraded to a virtual commodity system where virtual products were sold online," says Li Yang. "QQ to a large extent incorporated elements of the metaverse in its model—it was virtual, belonging to the spiritual world, and it was purely based online; nonetheless it gave people a space to be creative, to express themselves."

"[Tencent's QQ Show] even had its own payment method via QQ coins, thereby creating this closed-loop ecological system of the metaverse," adds Yang. Tencent started selling the QQ coin for RMB 1, but it has since jumped in value after online vendors started accepting virtual coins for real-world items. In 2019 alone, the Chinese virtual coin market was worth $900 million.

And the metaverse is continuing to be built upon various emerging technologies, including cryptocurrencies, such as QQ coin, and blockchain. For instance, the Argentina-based metaverse platform of *Decentraland* runs on the Ethereum blockchain, which is used to track ownership of virtual real estate and underpins the in-world cryptocurrency, MANA—which can be bought and sold for real-world cash. In mid-2021, the platform gained attention when a plot of digital land sold for the MANA equivalent of $913,228.

Facebook's rebranding into Meta means that the company is the most-visible global player in the space, but other heavyweights are also active. In 2020, Taiwan-based telecoms giant HTC launched the enterprise-focused VIVE XR Suite, a VR software bundle that increases the realism of remote or virtual business meetings. And Google's parent company Alphabet, is using a number of its advantages to become a big player in the metaverse, including the fact that it has the most popular smartphone operating system in the world and is essentially the world's largest data store, not to mention the myriad companies it owns that produce hardware to connect users to the internet.

Among governments, South Korean authorities have been quick off the mark to explore the concept. Seoul is encouraging public-private partnerships to advance the technology, and in May last year, the Korean government launched a national "metaverse alliance" to coordinate and facilitate the development of VR and AR platforms. China is following suit and in October 2021, state-owned telecoms company China Mobile set up the Communication Association Metaverse Committee (CAMC), the aim of which is to study national industrial policy and strategy. The CAMC admitted 17 new members in February this year and looks set to continue expanding.

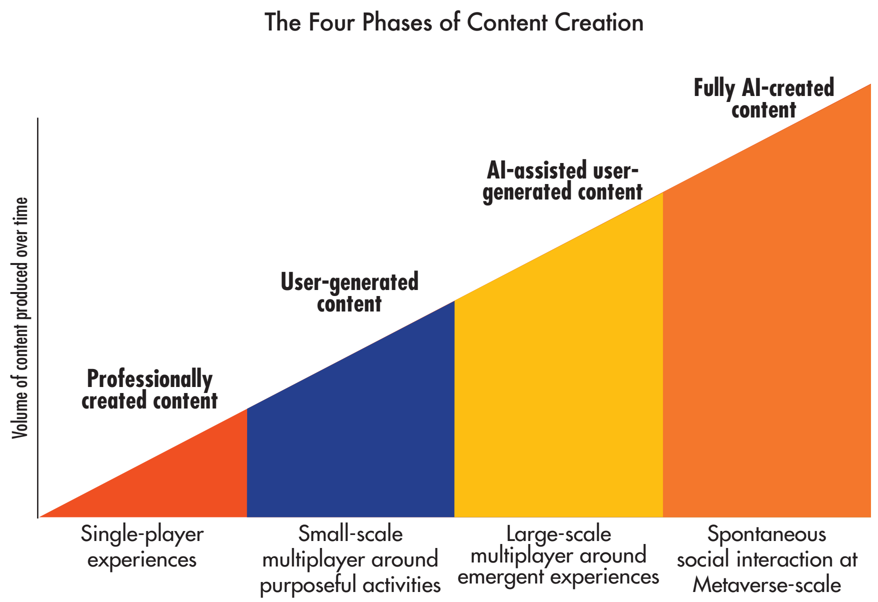
China's metaverse

Unsurprising given the governments encouragement of and Chinese consumer's eagerness to embrace the more digital lifestyle, the metaverse has a strong foothold in China.

By early 2022, more than 1,300 companies in China had registered trademarks for terms related to the metaverse, while applications to register around 10,000 trademarks have been filed, according to business tracking firm Tianyancha. The companies holding the most metaverse-related trademarks are Tencent, ByteDance, Alibaba, Baidu, NetEase and Xiaomi.

Tencent got an early start in the latest iteration of the metaverse when it became the China distributor for the metaverse

METAVERSE DEVELOPMENT | Growing user involvement and AI will balloon metaverse content



Sources: a16z.com

platform *Roblox* in 2019. The company has the opportunity to dominate the metaverse in China through its ubiquitous do-everything app WeChat, according to Catherine Henry, a senior vice president for growth at digital content agency Media. Monks and an expert on the metaverse.

"Looking at WeChat, if you uploaded all that into a headset, you pretty much have the metaverse," says Henry. "If we're looking at interoperability, a rich commercial ecosystem, and a committed and loyal customer base, you have all of those things in WeChat."

> I feel that the possibility of two ecosystems being developed is not only possible, but very likely
>
> Catherine Henry
> SVP for Growth
> Media.Monks

But importantly, Tencent is also an investment powerhouse with stakes in more than 800 companies, from Tesla Motors and Spotify to *Fortnite* and *Roblox*. "It's incredibly impressive and so I believe there is a real opportunity for the metaverse to flourish in China in a way that it may take longer in the US because interoperability is key," says Henry.

ByteDance, owner of TikTok and popular Chinese news app Toutiao, has been busy laying the groundwork this year for creating a metaverse that will seemingly be founded in gaming. On top of its billion-dollar acquisition of VR headset startup Pico, ByteDance has pushed aggressively into gaming with acquisitions of small, independent Chinese studios such as Shanghai-based Moonton Technology and C4games from Beijing, along with an investment in Mycodeview, the Beijing-based developer behind *Reworld*, a domestic clone of *Roblox*.

The hype around the metaverse has led to frothy valuations for Chinese-listed companies linked to the concept. This prompted the state-owned *Securities Times* to warn against investing in the metaverse as the products were still in their infancy. "Investment is not a virtual game," the newspaper warned in September, adding that if people "blindly invest in such grand and illusionary concepts as the metaverse, they will be burnt in the end."

Daniel Ahmad, senior analyst at Niko Partners, says it is still early days for gaming metaverses in China. "Numerous small and medium-sized gaming companies have announced their own plans, but none of them have anything tangible to show and may not necessarily have the experience to build a complete product in the same way that larger firms could," he says.

Still, China lends itself to the metaverse in numerous aspects. The country's competency in core technologies such as artificial intelligence and 5G networks, coupled with a longstanding and unrivalled dominance of consumer device manufacturing, and societal embrace of super apps gives it a major advantage, according to Henry.

"If I look across the entire spectrum of AI, 5G, digital experiences and technologies, China really stands out in a number of these areas, if not all of them," says Henry. "All the foundations are there, which makes it a really exciting space for China right now."

Metaversal laws

But while the building blocks are there, there is some uncertainty about how much China's metaverses will resemble and connect to those in the West. For instance, Alex Xu, Chief Executive Officer of MultiMetaverse, a Shanghai-based animation studio for metaversal content, says Tencent's investments mostly suggest it sees a lucrative opportunity for revenue from live events and brand partnerships with little focus on user-generated content (UGC), which is generally a hallmark of the metaverse concept everywhere else.

While games that allow for UGC exist in China, there are strict restrictions and moderation protocols that dictate what is not allowed, according to Ahmad. "Therefore, we believe the UGC aspect presents a risk to the growth of metaverse games in China."

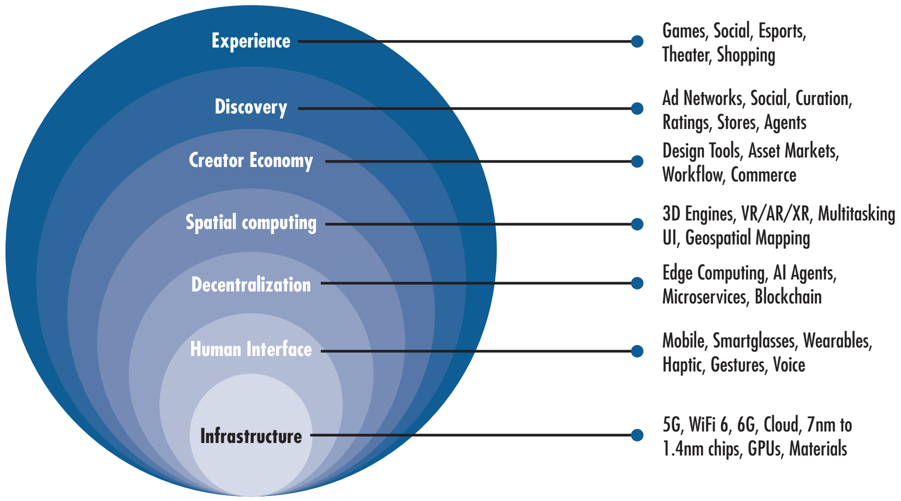
But creation and fun are the fundamentals of the metaverse, according to Xu. "If you cannot create fun in that virtual world, people won't spend time and money in that world at all. Even if you have the infrastructure, if the content there is not attractive, you're doing nothing."

This leads to a discussion of the relative prospects of the Western metaverse's more unfettered character and the Chinese government's centralized approach. The connection between government control, gaming and the metaverse also links the fortunes of the latter with China's online gaming industry, which has been hit by playtime restrictions aimed at curbing video game use among minors.

Other headwinds could be looming for metaverse development in China as well. In late October researchers at a government think tank affiliated with China's Ministry of State Security warned that the metaverse's "technological characteristics" and "development patterns" had national security implications, giving Chinese companies a reason to look over their shoulder at incoming regulations in a way that Western developers don't have to.

The researchers reported that given the potential for the metaverse to lead to major changes in political, economic, cultural and social structures, the authorities were focused on creating the necessary regulatory supervision and guidance to

BUILDING BLOCKS | The seven layers of the metaverse



Source: Jon Radoff, CEO of beamable.com

ensure national security. Decentralization of power and control over activities is one of the key principles underlying the metaverse globally, but that flies in the face of Beijing's resolve for control over all aspects of life, both real and virtual.

CUHK's Cai says a metaverse offers plenty of room for experimentation—including in areas such as social systems—which could spook Chinese authorities and persuade them to shackle such virtual realities. "If our policy is that we would like to have a very secure, stable and controllable metaverse, then it might well be a virtual space where people can interact, but it's nearly impossible that they might create something new or interesting."

The possibility that the metaverse encourages decentralization—often touted as an important element of metaverse development—may sharpen Beijing's resolve to mold the metaverse to its liking. *Decentraland*, for instance, is owned and governed by its users, who can submit and vote on proposals that determine the future of the virtual world. "From a governance standpoint, it's very different," says Dave Carr, a spokesperson for *Decentraland*. "I think this becomes an issue for all governments when people start spending more and more time in the metaverse. Which is not to say that traditional government will be replaced, but a metaverse like *Decentraland* has been designed to put power in the hands of its users."

The Chinese government's attitude toward cryptocurrencies could prove instructive. While Beijing has banned cryptocurrencies and the mining of them, financial regulators have recognized the value of a digital currency built on a blockchain and sought their own implementation in the form of the digital Renminbi.

"The general sense in China is that blockchain is good, cryptocurrency is bad," says Cai. "I believe the same thing will happen with the metaverse as well. In China we like optimizations and efficiencies so our metaverse might be used to further accelerate the digitalization of the government and public services."

One world or two?

Right now, in spite of the restrictions, many companies in China are eager to avoid missing out and are looking for first-mover advantage in the metaverse, staking a claim to a brave new virtual world before the scaffolding is even fully built. But even at this stage, it seems the Chinese version of the metaverse is shaping up to diverge quite significantly from the rest of the world's.

"I feel that the possibility of two ecosystems being developed is not only possible, but very likely," says Catherine Henry. "It is not necessarily a bad thing and eventually bridges will be built between them. The Chinaverse will be connected to the metaverse in some places and brands will be able to operate in both markets, but it may be a bit of a walk [between them]."

And while it's early days, the lack of developmental control over the metaverse in the West, compared to the somewhat restricted nature of the Chinese metaverse leads some commentators to say that the Chinese version will end up taking a back seat.

"The metaverse is obviously going to develop further and faster in the absence of controls," says Wei Cai. "And the Chinese government's insistence on oversight of aspects of the metaverse, which are developed in the West with hardly a thought to regulation, has to have some impact on the speed of the development of the Chinese metaverse—meaning it will most likely play second-fiddle to the Western metaverse."

> Even if you have the infrastructure, if the content there is not attractive, you're doing nothing
>
> Alex Xu
> Chief Executive Officer
> MultiMetaverse

BURNING OUT

The hardworking approach of Chinese people is the driving force behind the country's unmatched growth, but attitudes are starting to shift

By Leslie Wang

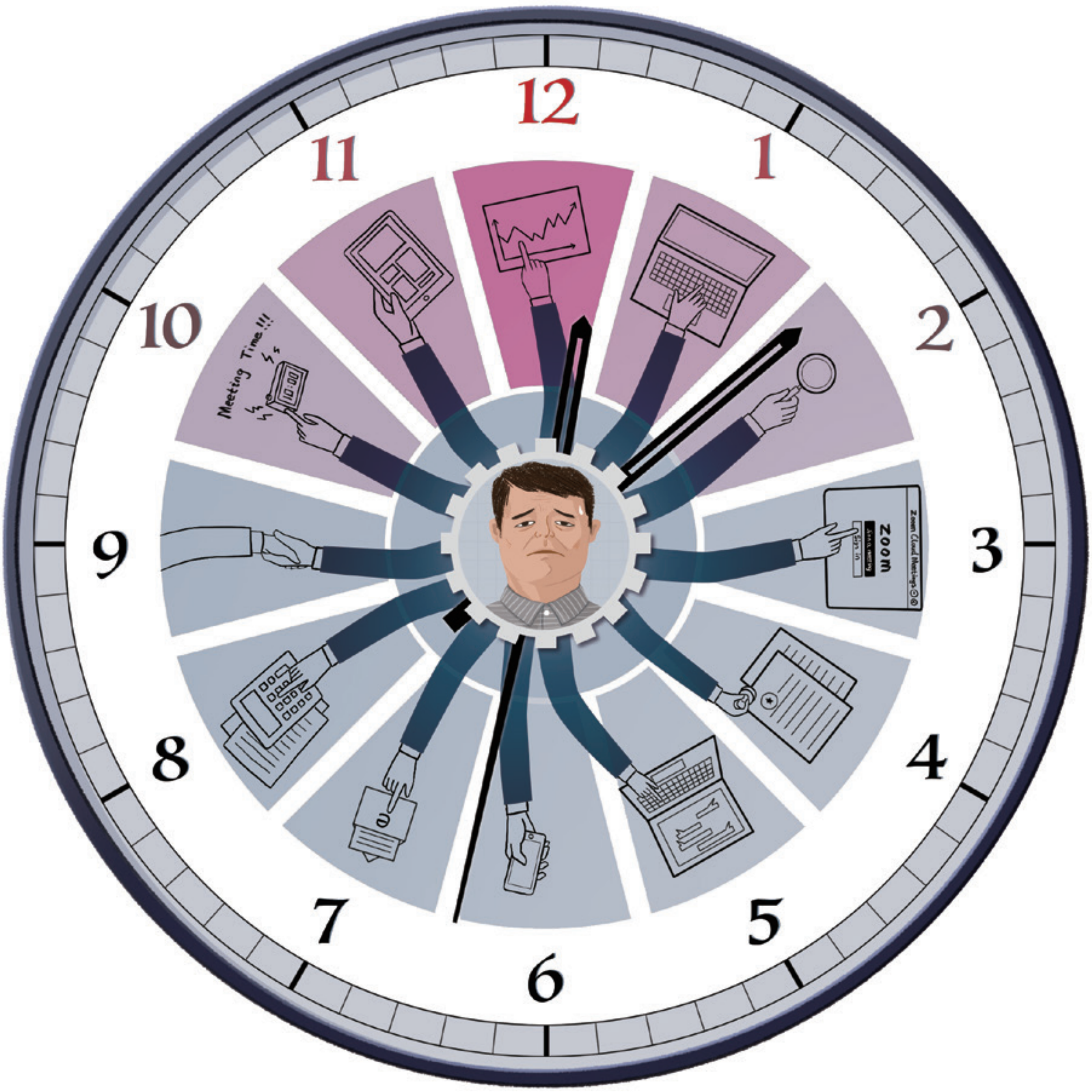


Image by Yuyu Zhou

Chinese people have historically had a strong work ethic but that has led to expectations in some sectors that many workers are finding untenable

It was just past midnight on a cold night in December 2020, when a 23-year-old employee of e-commerce company Pinduoduo died from what was diagnosed as overwork—the result of the staggeringly long working hours, crushing workloads and relentless pressures which are a part of life for many workers in China. Just two weeks later, an engineer who had been working for the same company for only six months committed suicide. The deaths caused a furor among Chinese workers that still reverberates today.

Although shocking for some, none of this came as a surprise to Li Yichen, who resigned from a high-flying job with one of China's leading information and communications technology companies early in 2021 due to the pressures of the job. "I suffered from gastrointestinal bleeding from the stress and knew I had no choice but to leave," says the 26-year-old. The long-term mental and physical health implications of stress have kept Li out of the workforce and, as of December 2021, she was still not back at work.

The pressures of work in China, especially in the ultra-competitive high-tech world are pushing people to the point where they are effectively in danger of working themselves to death. But the social outcry after the deaths at Pinduodou and an increasing pushback from younger workers point to the beginnings of a shift in attitudes towards work in China.

Resisting the rat race

In late 2010, Apple supplier Foxconn installed nets around its Shenzhen manufacturing plant to put a stop to a spate of suicides by company workers which were blamed on poor working conditions and low wages. The incident caused an international outcry, but evidence of a meaningful change in conditions has so far not been forthcoming. What was earlier a phenomenon impacting blue-collar employees has now crept into the white collar world as well.

More recently, there is also growing evidence that some young people are rebelling against long working hours and the demanding culture of "996"—working 9 a.m. to 9 p.m., six days a week—which is widespread in Chinese startup companies, but also seen in manufacturing and other service industries.

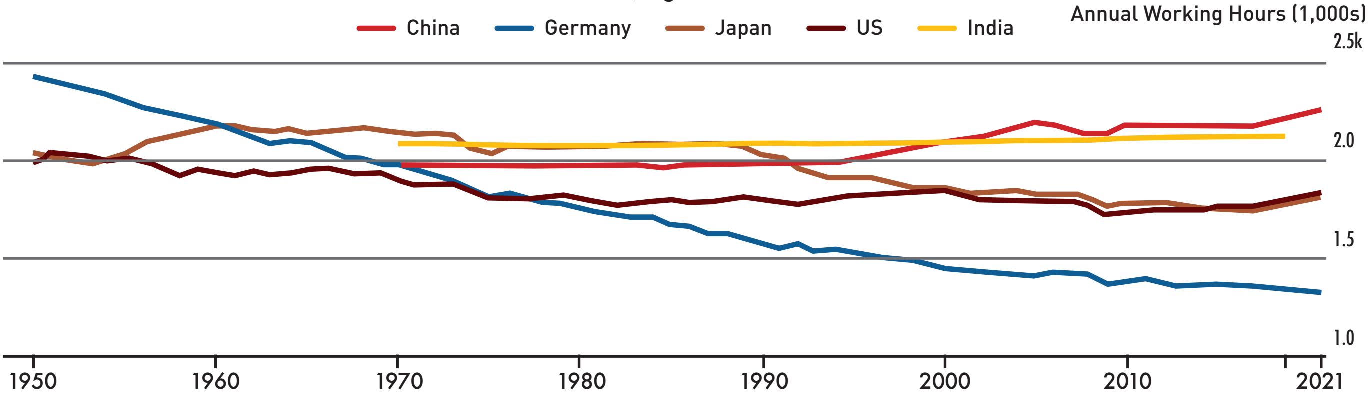
"996 is most prevalent in the tech industry," says Lijia Zhang, author of *Socialism Is Great!: A Worker's Memoir of the New China*. "To squeeze [out] more profit, tech giants' bosses are often slave drivers."

But company founders and others have lauded the 996 system as a key factor in the growth of China's powerful tech companies. Jack Ma, the founder of tech giant Alibaba and one of China's richest men, championed the overtime culture, describing it as "a huge blessing." In the same vein, Richard Liu, founder of e-commerce company JD.com has said: "Slackers are not my brothers!"

"Many tech companies' employees are either encouraged or required to put in long, even unpaid hours, to show commitment to their jobs and loyalty to the company," says Kyle Freeman, partner at the business

> There is a difference in the way generations approach and view occupations
>
> James Liang
> Co-founder and Chairman
> Trip.com

WORKING HOURS | China's annual working hours per person far exceeds those in other, high-GDP countries



Source: Bloomberg

intelligence firm China Briefing. "They may find key promotions or even retention linked to overtime to prove their worth."

But it is not only employees of tech companies who have suffered under work pressure. Gig industry workers, who are hired on an ad hoc basis without the benefits associated with long-term employment, are also often forced to meet tight deadlines and work under huge pressure. Daxue Consulting estimated in September 2021 that there are about 200 million gig workers across the country, accounting for almost one-fourth of China's entire labor force.

"Gig workers such as couriers, food delivery riders and ride-hailing drivers are also pushed to work long hours to deliver the last-mile services many tech platform companies provide," says Freeman.

China's top court, the Supreme People's Court, in August 2021 ruled that the 996 work arrangement was illegal, but properly implementing the ban may be tricky as China's longstanding labor laws already forbade such long working hours.

"This 'ban' just emphasizes the existing law and seems to be part of a broader push by authorities to promote workers' rights," says Freeman. "It comes amid other recent announcements, such as requiring companies to optimize work time and benefits of gig workers under 'new forms of employment'."

In September 2021, China's leader Xi Jinping called for the country to refocus its attention on achieving common prosperity, seeking to narrow a growing gap in wealth. Common prosperity as an idea is not new in China, but in the past few months it has led to a range of changes, from the number of hours that employees in the tech sector can work, to prohibiting for-profit tutoring.

"The recent push for common prosperity will alleviate some hard feelings from workers, with higher pay and better work protection," says Aidan Chau, researcher at a Hong Kong-based workers' rights NGO. "But the degradation of work and workers being alienated from their work can only be changed by … trade unions and establishing collective bargaining."

Pressure all round

The Chinese ethos of diligence and hard work has remained largely unchanged for many generations. Using the opportunities provided by market reforms instituted in the early 1980s, the Chinese have pulled themselves out of poverty and the country's economy has boomed as a result, growing at an annual average rate over four decades of 7.7%, more than double the world's average of 3.3%.

"The Chinese people have always had a strong work ethic and are extremely hard working," says Zhang. "The concept of *chi ku*—eating bitterness—is deeply rooted in the Chinese psyche. You have to work hard and suffer in order to achieve success. Mark Twain once said that 'a disorderly Chinaman is rare, and a lazy one does not exist.'"

In the decades before the market reforms, basically all urban workers were employed by state-owned enterprises (SOEs) and had their basic needs taken care of. And even today, the ideal for many Chinese graduates is to work for an SOE or the government, thereby avoiding the 996 pressures of private enterprise.

"My parents worked for SOEs and their housing, medical care and education were all paid for," says Li. "Back then, it was the common belief that those companies belonged to the people. My parents struggle to understand the amount of overtime I had to work and the pressure I was under."

"Forty years ago, most people working for SOEs, or even collective factories, did not work very hard—they didn't have to," says Zhang. "There was no bonus—a bonus was regarded as a capitalist idea—so everyone was paid the same, no matter if you worked hard or not. Back then, there was no market economy or competition. A job with an SOE was an 'iron rice bowl'—a job for life."

SOEs are, however, notorious for their low level of efficiency.

"I worked as a factory worker for a state-owned military factory for 10 years in the 1980s," adds Zhang. "We sat for many hours chatting, drinking tea and reading newspapers. Things began to change after Deng Xiaoping introduced China's economic reforms. Only then did hard work and success become linked."

"Chinese workers, especially SOE workers, enjoyed a rather respected … life before the Reform and Opening Up shift," says Chau. "Workers were conscious

Post-pandemic pilots

As the pandemic swept through China in early 2020, millions of white-collar workers around the country found themselves unable to go into the office. It opened up the possibility working from any location with an internet connection and not having managers monitor every moment of their days.

For some, it prompted the discussion of continuing work-from-home hours even after the pandemic ended. "During the lockdown everyone worked from home and I soon found myself wondering why we were not doing it before," says Ada Hu, a marketing employee at a startup in Shanghai. "With everything now being online, I don't see why we can't work from home in the future or even just have more flexible working hours."

Chinese travel company Trip.com launched a six-month "2021 Hybrid-working Trial" to test the impacts of flexible work. "During the pandemic, employees worked from home and we found efficiency and output of work results were not in any way affected," says James Liang, co-founder and chairman of Trip.com. "Our work-from-home system allows employees to gain both flexibility and control to pick their own work time."

But this appears to be the exception to the rule. And given that one of the biggest impacts of the pandemic was to focus everyone's minds on the fact that the world is uncertain, job security is at the forefront of many workers' minds, a worry which could easily lead back to the status quo.

that they were working for the general development of society and that they should have a say in production."

With many of China's young workforce being only-children due to China's now-abolished One-Child Policy, they are under pressure to support their parents, grandparents and children on their own.

"I would say most of today's Chinese have to work much harder—except those who have cushy government jobs," says Zhang. "Most people have contract work. If you don't work hard, you may get sacked."

> Many tech companies' employees are either encouraged or required to put in long, even unpaid hours
>
> Kyle Freeman
> Partner
> China Briefing

Pushing back

While China's famous work ethos is still very much in place, there is an increasing divide between the young and the old when it comes to work attitudes. The duty-bound industrious diligence of old is no longer as pervasive as it was, while the newer generations have been brought up in a time where there is more exposure to different working styles. The younger generation believes there is a better way to learn, work and live.

And while many have grown up in a relatively privileged position due to the one-child policy and the focusing of family wealth upon them, they are also in the unique position of having several older generations relying on them at once. It is a very different economy that China's youth live and work in today, and with it comes a new set of pressures.

Many young people are tired of the constraints that the Chinese education system places on them, just so that they can continue straight into a grueling working environment. They have been dubbed the "involuted generation," which refers to their constant sense of burnout, disillusionment and isolation from society where they don't see an opportunity for a breakthrough for themselves despite their tireless efforts.

Pushing back against the trend of 996, in April 2021, a movement known as *tang ping* emerged among some Chinese netizens, which literally means "to lie flat" in English. It is a counterculture of young Chinese workers who reject societal pressures of overwork and instead opt to prioritize their mental health and lower their ambitions, while only being productive enough to meet their essential needs. The term has garnered a significant following online, and has been blocked by the government on Chinese social media platforms.

"The main reason for *tang ping* is that educated young people realized that their chances and privilege have dwindled, since competition for jobs, promotions, better wages and social protection have intensified," says Chau. "They put extra effort towards working for the company, but they are still being neglected or replaced."

Earlier in 2021, the *South China Morning Post* reported on a trend where young people were rebelling against the punishing work ethic expected by Chinese businesses in a variety of ways, including hiding in the toilets, refusing to work overtime, reading books or playing with their phones at work, and just being lazy in general.

"While the first generation of workers in the 1980s were relatively tolerant to the factory discipline and control, we [found] the second generation to be more aversive and dismissive," says Chau. "One reason is that the control on workers has developed to a sense that the assembly line and machines are dominating the working rhythm and lives of workers, which they don't want to tolerate any more."

Another explanation is that young workers are not necessarily choosing to simply "opt out" from societal norms and expectations, but are merely looking for a less grueling work life.

"I don't feel young people are choosing to *tang ping*," says James Liang, co-founder and chairman of Trip.com. "They show a greater tendency to seek a better work-life balance. When compared to their parents, they grew up in a digital age and are faced with more opportunities and resources."

"There is a difference in the way generations approach and view occupations," he adds. "Older generations prefer work and income to be more stable while younger generations are more flexible and adapt easily, with a greater sense of self-identity and belonging."

A turning point?

China appears to be at a crossroads when it comes to work attitudes. On one hand, the government is pushing for an improvement in working conditions, in line with its common prosperity policy. But on the other hand, China is widely believed to be heading towards an economic slowdown that will inevitably result in a lack of jobs, driving up competition for roles and the expectations of workers within those roles.

But the situation regarding mandated overtime appears to be changing. Earlier in 2021, ByteDance, the owner of popular app TikTok, along with rival Kuaishou Technology, canceled an alternating system where employees were required to work one weekend day out of every four.

> I would say most of today's Chinese have to work much harder
>
> Lijia Zhang
> Author
> *Socialism Is Great!: A Worker's Memoir of the New China*

ByteDance has since ordered its employees to end their day by 7 p.m., becoming one the first tech companies in China to officially mandate shorter working hours, according to an internal document seen by *Bloomberg*. Staff will also have to apply in advance to work overtime, which is limited to three hours on a weekday and eight hours on a weekend.

"Whether China's promotion of labor rights is part of common prosperity or something else, it may be too early to say," says Freeman. "This shift in policy makes clear the leadership will be more focused on addressing inequality, redistributing wealth, and creating more opportunities for upward social mobility. [But] the specific mechanisms of how this will be done are not yet clear."

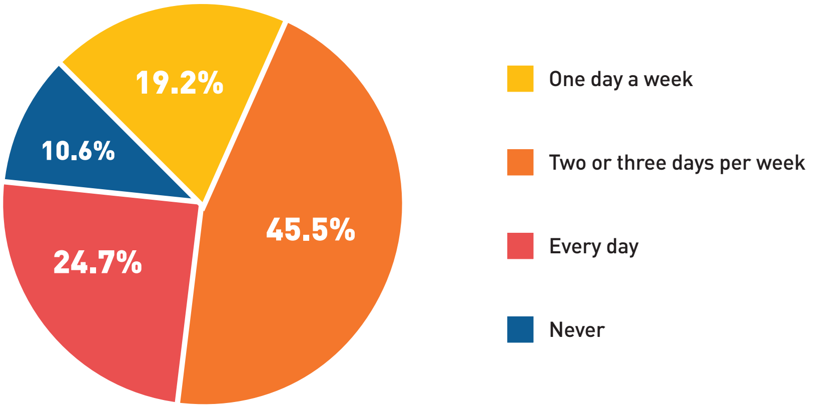
"Though *tang ping* is a rather pessimistic way to approach the problem, it raises the awareness of the extremely long working hours in the new IT sector as well as the alienation [that workers are feeling]," says Chau. "There are employees who are more active and have chosen to change the situation [towards better work-life balance]. We hope that they can continue their actions and movement."

But for blue-collar workers like the hoards of delivery drivers still rushing to make deliveries on time and for tech employees like Li, it seems unlikely that the overall situation will change anytime soon.

"I don't see working conditions changing," says Li, who has yet to return to full-time work after suffering from burnout. "Many of my former colleagues are still under the same amount of pressure and are working as hard as before. I feel like I was treated inhumanely and I am not hopeful for a fundamental change in China in the future."

STUCK AT THE OFFICE

Nearly 90% of people surveyed in China said they work overtime every week



Sources: Weibo; Boss Zhipin

Inverting the Norm

Cao Renxian, chairman of new energy company Sungrow, discusses China's new carbon goals, the future of new energy and the fight against climate change, both in China and abroad

Founded in 1997, Sungrow Power Supply Co., Ltd has grown to become one of the world's largest producers of photovoltaic inverters—which convert the DC generated by solar photovoltaic panels into usable AC—with over 182 gigawatts of capacity installed worldwide as of June 2021. Based in the eastern Chinese city of Hefei and with a market cap of just over RMB 220 billion ($34.57 billion), the company has gone from strength to strength, expanding beyond its initial inverter business and into energy storage solutions for multiple new energy formats. Sungrow's continued investment in its world-leading research and development team has placed the company in a prime position to help China, and the world, move towards a future based on new energy.

This positioning has come into sharper focus with China's recently announced dual goals of peaking carbon emissions by 2030 and becoming carbon neutral by 2060. The targets are ambitious but Sungrow's chairman, Cao Renxian, believes they are achievable. In this interview he discusses global new energy needs, barriers to new energy adoption and expectations for Sungrow's future business.

Q. Let us begin with a general question. Solar power is now very important in terms of energy production. What do you see as the future role of solar power in energy production globally? And to what extent is China in line with or different from global trends?

A. The threats of global warming and climate change are becoming increasingly serious and many countries around the world have been espousing a reduction in coal usage and embracing carbon neutrality commitments as solutions which has led to an acceleration in the pace of energy decarbonization. The recent United Nations Climate Conference (COP26) identified, for the first time, fossil fuel energy combustion as a major factor in global warming, which means that all countries need to strive to develop and use new energy sources free from fossil fuels,

Professor Cao Renxian is the founder and chairman of Sungrow, a manufacturer of solar photovoltaic inverters, wind power converters and power supplies

gradually reduce coal power generation and the use of fossil fuel vehicles, and accelerate the promotion of photovoltaic solar power as the representative of low-carbon energy.

In an increasing number of countries and regions, the cost of photovoltaic power generation has been falling and in many areas it now costs less than coal power—making it one of the most competitively priced sources of energy. In the context of global promotion of green development and China's carbon goals, with the continuous innovation of photovoltaic power generation technology and the further decline of power generation costs, the installed capacity and consumption ratio of photovoltaic power will continue to grow rapidly, and in the next 20 years, photovoltaic power generation will replace coal power as the new mainstay of the global electricity market.

China is a major player in the photovoltaic industry and is a global leader in technology, manufacturing scale, application innovation, industry supply chain system construction, among other things. It has built the world's largest clean energy system, and has maintained a number of firsts in "annual new installations" and "cumulative installations" for many years. In 2020, China installed 48.2GW of new photovoltaic power plants, ranking first in the world for the 8th consecutive year, the country has also been ranked first in the cumulative number of power plants for six straight years. Driven by the need for a global energy transition and China's dual carbon goals, the Chinese photovoltaic industry will see continued fast and healthy sustainable development.

Q. As you have mentioned, China has instituted two new carbon goals. How do these targets impact Sungrow's business?

A. China's two new carbon goals are a major ecological strategy and will help the country to actively respond to global climate governance issues and promote the building of a global community of humanity with a shared future. At present, China is gradually building a new power system with new energy as the mainstay, which is an integral part of reaching the new carbon goals, and photovoltaic power has a great role to play.

As a new energy enterprise, Sungrow Power has actively responded to the national strategy and intends to achieve 100% renewable power by 2028 at the latest, accelerate green and sustainable development, achieve carbon neutrality, and help other enterprises accelerate carbon emission reduction and help push carbon neutrality through its own professional strengths.

In general, there are four paths to achieving carbon neutrality: the replacement of traditional fossil energy with new energy, the continuous improvement of electrification rates (including electric vehicles), the improvement of energy use efficiency, and the purchase of green electricity certifications. All these paths are closely related to the core business areas of Sungrow. We will continue to increase our investment in research & development, focus on these core businesses, continuously improve our market competitiveness and continue to make our own contribution to the realization of carbon neutrality.

Q. What do you see as the main barriers to more widespread adoption of renewable energy sources?

A. The main thing we need to see is more determination from governments to accelerate the replacement of fossil energy sources with new energy. In addition, there needs to be further reduction in the cost of renewable energy and an increase in the stability of renewable energy sources, making these sources more convenient for society to access. Solving these issues will allow for an increasingly wide use of renewable energy sources which will, in turn, help attain carbon targets.

Q. Balancing supply and demand with renewable energy sources can be difficult. What is Sungrow doing to help regulate the availability of energy from solar power?

A. To solve the problem of fluctuation and intermittent supply of renewable energy sources such as photovoltaic and wind power, and to improve the high adoption and large-scale application of renewable energy, Sungrow made a foray into the energy storage business as early as 2006. Relying on its massive technical accumulation in the field of power electronics, Sungrow has established a full ecosystem covering the entire energy storage industry. We provide core storage equipment for wind and solar energy sources and highly efficient and synergistic integrated solutions, applying them to scenarios such as auxiliary services for new energy grid connection, power frequency and peak regulation, responding well to demand-side requirements, microgrid and household use, among other things. The energy storage system solutions provided by Sungrow are among the best in the world in terms of performance and reliability.

China is a major player in the photovoltaic industry and is a global leader in technology

Green power: A 100MW photovoltaic power station in China's southwestern Guizhou Province

Q. Technology plays an important role in the renewable energy industry. How would you describe the technology levels in China compared to the US and the West in this area?

A. China has been encouraging technical innovation within the renewable energy industry as well as helping develop its widespread application, and the country's current level of development in low-carbon technologies such as photovoltaic, wind power, energy storage and electric vehicles is at the forefront of the world.

Q. What important innovations have Sungrow's research and development team created for the world in renewable energy and what is the team working on right now?

A. For more than two decades, we have focused on the field of new energy power generation, continuously promoting the integration of industry technology innovation and continuous cost reduction. In the past decade, we have directly driven down the cost of photovoltaic electricity by about 90%. At the same time, we continue to lead the integration of wind, solar and energy storage technologies and increasing the application of innovations, solving the issues of fluctuating and intermittent renewable energy sources such as photovoltaic and wind power, promoting the increase and large-scale application of renewable energy sources, and strongly pushing the development of the global new energy industry and the transformation of local energy structures.

At present, we are mostly focusing on five development orientations: solar power, wind power, energy storage, electric vehicles and hydrogen energy, promoting collaborative innovation, and we are striving to improve the synergy between marketing and technology within each business sector in order to achieve rapid and sustainable development.

Q. What proportion of Sungrow's business is outside of the China market and which regions are growing the fastest?

A. Sungrow has always adhered to a global development strategy and the proportion of overseas revenue has been steadily increasing in recent years. It accounted for nearly half of our revenue in the first three quarters of 2021, and our business in America, Europe, the Middle East and other regions is continuing to grow rapidly.

Q. What expectations do you have for Sungrow's business over the next 5-10 years?

A. In the future, we will focus firmly on our main business of new energy, concentrating on the development of solar power, wind power, energy storage, electric vehicles and hydrogen energy, and hope to deeply integrate each of these businesses. We want to position ourselves as a technology powerhouse that insists on a great depth of technology and pursues technological leadership, promoting innovation and empowerment that is inspired by the world around us. We will make unremitting efforts to fulfill Sungrow's mission of "Clean power for all," and the grand vision of "being the global leader in clean energy conversion technology." We aim to reach higher and higher and will continue to set ambitious business goals that will allow for rapid and sustainable development for the sake of fulfilling this grand vision.

Interview by Patrick Body

DIGITAL DOCTOR

China's health care system faces many unique challenges due to the country's size and population, and digitalization is revolutionizing the industry

By Mark Andrews

Image by José Luna

Digital hospitals and remote appointments are becoming the norm in China's health care system

When Shanghai-based office worker Kevin Wang started experiencing sleeping problems, he instinctively reached for his phone and input his symptoms into the WeDoctor app. "It offered a detailed lists of hospitals, doctors and available visiting times the moment I input my symptoms, and I could select the [right] doctor to visit at a time convenient to me," explains Wang. "It was so much more convenient than going to a hospital first."

China's health care system has become increasingly digitalized over the last few years, a transition that was accelerated by the COVID-19 pandemic. There is now widespread use of remote consultations, AI-based medical research and diagnosis and digitalized patient records, among other things, which are pushing China's health care system into higher levels of efficiency in spite of the fact that the system is still overburdened.

For those unfamiliar with the situation on the ground, public hospitals in China tend to be chaotic and a visit involves navigating from window to window to window for payment, stamps and registration. It is not uncommon for other people to crowd into the consultation room while the doctor tries to examine you. Patient diagnosis time in China averaged only eight minutes in 2019, only a fraction of the three hours that visitors to hospitals spent on each trip. In contrast, medical visits in the US include an average of 16 minutes face-to-face time between patients and doctors.

The size of China's population, along with the rising expectations of the growing middle class for effective health care, make digitalization of health care services in China imperative. "The development of digital health care in China is extremely urgent," says Xu Wenjing, a pediatrician in Suzhou, west of Shanghai. "And that is mostly because of its large population, high demand for health care and uneven distribution of health care resources, which are concentrated in large hospitals in major cities."

Appointment with change

Over the last decade, rapid adoption of smartphones and the integration of other technologies have led to the increasing digitalization of many aspects of people's lives in China, and today the Middle Kingdom is, in many ways, ahead of the West in terms of the digitalization of health care. A selection of different products and services are now available to both health care institutions and individuals, which cater for many health needs at the touch of a button.

At the basic level, companies such as delivery giant Ele.me and JD Health, a subsidiary of massive e-commerce platform JD.com, provide deliveries of medicines ordered by app. Tencent-backed WeDoctor, founded in 2010 as Guahao, offers not only the appointment booking service used by Kevin Wang but an online pharmacy, and cloud-based solutions for hospitals and medical service providers.

There are also new "internet hospitals" springing up across the country. These multifaceted platforms offer online consultations, hospital referrals and appointments, health management and wellness interaction services—typically in conjunction with offline hospitals for needs that can't yet be met digitally. Ping An Good Doctor, backed by Chinese insurance giant Ping An, is one of the largest such "internet hospitals" and now has 400 million registered users.

Apps which allow remote appointments and advice are obviously appealing. When Beijing resident Daisy Dai became pregnant, she decided to sign up for the Good Doctor app for her routine check-ups, rather than a hospital-based doctor. "During pregnancy you feel a little bit here and there," says Dai. "Hospitals are crowded and it's not so easy to move. I paid about RMB 500 for a year and got my own doctor, who had all my records and could give me suggestions. A lot of the time it's just about being comforted."

Much of this drive to digitalize health care is driven by the big tech firms. Alibaba has its product AliHealth, which works alongside 3,000 public and private medical institutions, while JD.com's JD Health Internet Hospital has over 130,000 doctors and medical experts on its platform.

Medical institutions have also seen

a wave of digitalization, and especially so during the pandemic. In Wuhan, the epicenter of the outbreak, robots—provided by companies such as Beijing-based CloudMinds—manned wards in the crowded hospitals, disinfecting surfaces, taking patient temperatures, offering risk-free contact with doctors and providing prescribed medicine.

And the developments do not stop there. Across China, companies are developing AI models that can more effectively diagnose multiple diseases, including cancer.

But there is another consideration in the case of China's health care system. Unlike many parts of the world, China uses a combination of two distinct approaches to health care, with many modern medicinal diagnoses and treatments accompanied by complementary cures from Traditional Chinese Medicine (TCM).

In general, it seems that TCM is largely being left behind by digitalization, particularly due to the previously unquantifiable nature of many of the concepts it uses. Additionally, there was pushback from doctors who feared that digitalization could pose a threat to their authority. But progress has been made on the issues, with companies like Jinmu Health offering technology that can be used as a diagnostic aide.

"I think we're at the forefront of digital TCM," says Lawrence Li, CEO of Jinmu Health. "The technology we developed can quantify the vaguer things that make up TCM—including *yin* and *yang* deficiencies and *qi*. A lot of TCM doctors have realized that the product is complementary to their practice, so we've seen them using our stuff to reach more patients, to serve them better through online platforms and to bring the doctors more income."

A system diagnostic

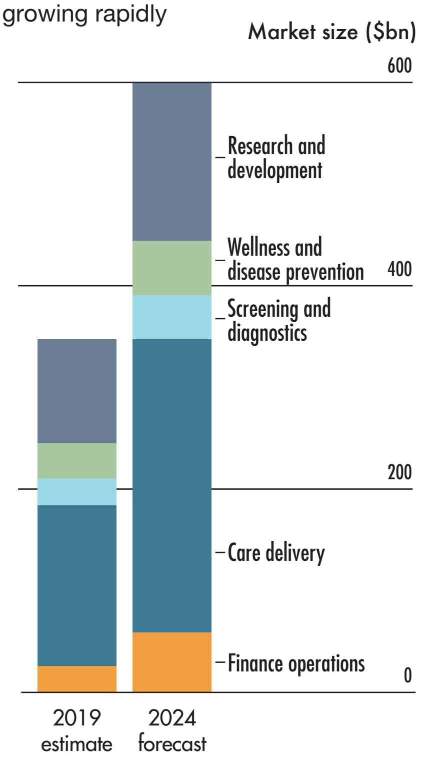
China's national budget for health care amounts to just over 6% of the country's GDP, compared to 9.6% for the EU and 17.7% for the US through its medicare and insurance programs. But the fees that are paid, per person, either by patients or through insurance companies to cover medical expenses average only $737 in China compared to $11,582 in the US.

Despite being almost completely state-owned and run, the health care system is accessed on a mostly transactional basis. Patients pay for their treatment upfront and then claim back the fees via insurance—over 95% of people are covered by the public health insurance system. The result, certainly in China's main cities, is comparable health care for a fraction of the price.

But the system faces some interesting geographical and demographic issues. The best health care resources are concentrated in large cities particularly on the eastern seaboard, 72% of third-level grade-A hospitals were concentrated in this area in 2018 and while such hospitals only made up 8% of the total in China, they serviced 52% of the total outpatient visits in 2019. Additionally, China has a rapidly aging population—in 2020 12% of the population were over 65 years old—that is placing increasing strain on the already lopsided system.

HEALTHY GROWTH

The global digital health care market is growing rapidly



Source: McKinsey

In a sense, digitalization is democratizing health care in China, helping the underserved get access to good quality health care. "Using digital technologies like remote sensing, 5G, and AI, diagnosis and treatment data can be transmitted between different locations in real time via virtual platforms," says Jens Ewert, Deloitte China Life Science & Health Care Industry Leader. "This allows medical practitioners in big hospitals to provide rapid assistance to rural doctors, making up for inexperienced technical personnel and improving diagnosis and treatment in the countryside."

Digitalization comparison

The COVID-19 pandemic has provided new impetus for the adoption of digitalization in the Chinese health care system. In February of 2020, at the height of the pandemic in China, 65 new telemedicine platforms were created in Chinese hospitals, and there was a seventeen-fold year-on-year increase in the number of online consultations in the first quarter of the year. WeDoctor alone, claims to have handled 97% of chronic medicine needs in Wuhan at the height of the pandemic.

"COVID-19 further sped up the utilization of digitalized health care service for people who are restricted from visiting hospitals unless absolutely necessary," says Kevin Zhou, Chief Health Officer at AXA TP. "The whole industry has seen decreased outpatient utilization and [reduced] medical costs."

Jens Ewert agrees. "Driven by advances in technology and the COVID-19 pandemic, digital health care grew rapidly in China in 2020 and continued to surge in 2021 on continuous innovation and service upgrades," he says. "As a result, hospitals and companies, almost without exception, are now using digital channels for patient access and many other areas."

China is also in a better position after the pandemic than a lot of other countries. According to data from the Philips Future Health Survey, 96% of the country's respondents recognized the high levels of resilience of the health care system and only about one-third listed the pandemic as an external factor hindering their future planning ability—compared to the average of 68% across the 14 markets surveyed.

Digitalization of the health and wellness market is projected to grow to 24% by 2030 from a base of 3.3% in 2019 with online retail pharmacies making up the largest part of the market—they constituted 48% of digitalized health care services in 2019.

The China advantage

The mobility limitations brought on by the pandemic have also provided the impetus to move online, and when matched with the existing digital infrastructure in China there is a perfect storm for digitalization. "Chinese citizens are very connected and open to technology," says Allison Malmsten, China market analyst at Daxue Consulting. "So the user base is very easy to convert to digital."

Data is key to digitalization especially in the post-COVID world. "In every country there has been a COVID-based argument that we need more data about what we're doing," says Nick Couldry, author of *The Costs of Connection*, and a professor at LSE. "So health is probably one of the most favorable cases for universal data extraction."

China's digitalized nature is unlike that of any other country. Consumer data is abundant due to the interconnection of apps, mobile phones and banks, among other things. The ability to properly harness this data could catapult China's already advanced health care system into unrivaled levels of digitalization.

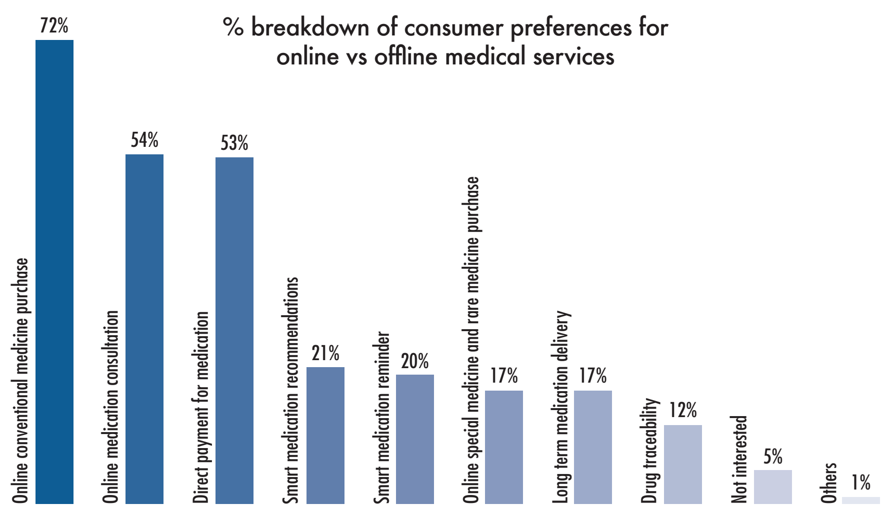
As with most markets in China, the major players in the digitalization of health care are largely the big tech companies which have been the target of Beijing's recent crackdowns—which are particularly focused on the use and storage of data—highlighting data as the double-edged sword that it is.

"Health data is the most personal information there can be about you, your genetic code is the unique description that makes up your body and mine," says Couldry. "Those in possession can know everything important about you from a physical point of view and some philosophers argue that it should absolutely not be permissible to be owned by anyone."

Estonia, which has had a digital health care data system for 13 years, now stores 99% of all health data digitally. Paramount to their e-Health Record system is blockchain technology which gives the patient ownership of the data and they have to give consent for anyone else to view it, and can block elements of it such as a diagnosis from one doctor if seeking a second opinion.

WHAT CONSUMERS WANT

Almost three-quarters of Chinese consumers prefer to buy conventional medicines online



Sources: Deloitte

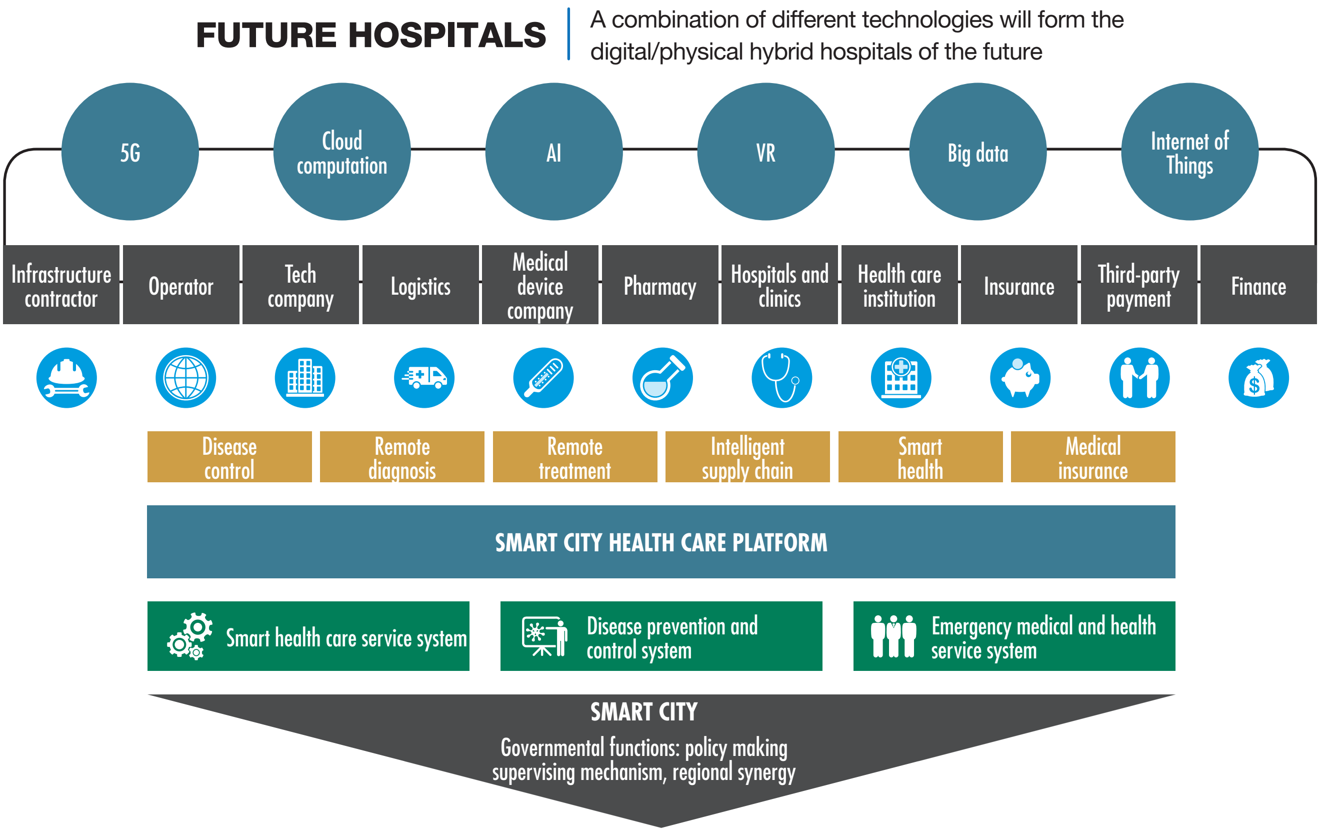
China's centralized nature can obviously be an advantage with the collation and storage of data. "There will always be a sensitive point here, that the personal medical data of citizens should not be controlled by private companies," says Li. "Now China has also issued a data security law, so in the future, it is possible that the state or state-owned enterprises will play an increasingly important role."

A centralized system with data on the citizens would also allow for increased prevention of diseases and further medical science. "Metrics like heartbeat, blood sugar level, body fat percentage, etc., are very important in understanding trends to make diagnosis," says Malmsten. "China is in a position to use its massive amount of data in combination with AI and machine learning to teach us a ton about the human body." Furthering that ability is the sheer size of the population, giving those with access to it large amounts of data.

Antibodies

But there are problems with some of the health care apps, and some patients are at risk of over-relying on them and being misdiagnosed. While Daisy Dai was very happy with Good Doctor, she also used a free service from an insurance group but described it as a "waste of time and annoying," due to its slow speed and non-committal answers culminating in advising her to see a doctor in a hospital. The apps can also be fiddly and elderly patients may struggle to use them. Generally, the main users of such apps are people under 35, despite the elderly being some of the biggest recipients of health care.

Additionally, insurance company participation in the digital health care market raises an ethical issue about data usage. Medical records could greatly impact upon a company's willingness to provide certain types of insurance cover. On the other hand, they can also benefit from decreased health care costs. But there are obvious issues in terms of data privacy. "Digitalization of health care drives the cost down, hence insurance companies like Ping'an are investing time and money into creating telemedicine apps as they also



Sources: Deloitte China

benefit from lower health care costs," says Malmsten.

Then there is the question of access. Online doctor consultations can provide patients with the ability to access top doctors thousands of kilometers away, avoiding expensive travel. And increasingly in the future, it might be possible to do remote operations using robots; Huawei undertook the world's first 5G remote surgery this year.

It is also not guaranteed that hospitals, especially those in rural areas, can afford to digitalize their patient data, and even if they could, a lack of standardization across systems in the country means that partnerships with other institutions might not be made any easier.

"For a hospital to establish a complete information system requires a large amount of money, for economically underdeveloped areas, if there is no government funding, it is difficult to do," says Xu Wenjing. "And the core content of medical information technology is electronic medical records, but so far, there is no global unified electronic medical record standard system, each place and every hospital is different, so networking and sharing of medical records is hard."

There are also issues with misdiagnosis and incorrectly prescribed medicines. Online consultations can ignore symptoms that can only be diagnosed in person and when it comes to getting medicine, many online pharmacies are not strict. "There was a case not long ago in which a person was diagnosed with hemiplegia," says Li. "In fact, he did not have this, it was because he had taken medicine. I have ordered medicine on Meituan, and if you say you have a disease, then they agree."

Healing patient

Many factors are driving the need for digitalization in China and the country is well-positioned to quickly advance, especially compared to others that lack such ubiquitous data availability. And, if China wants to do something, it can often just get it done.

"As long as the Chinese government wants to do something, it is easy to implement a model," says Lawrence Li. "So as long as there is robust technology and quality products, I think it will happen quickly."

But despite continued growth, it is unlikely that, at least in the short term, digital health care will entirely replace some of the face-to-face interactions that health care involves.

"It will continue to grow strong, like the adoption of digitalization in any other industry," says Kevin Zhou. "But given that health care is so very personal and requires customized, complicated, solutions, it will only supplement the existing model and not totally replace it."

But that won't stop China becoming a global leader, says Jens Ewert. "China's already rapid digitalization of health care will allow it to quickly rise up the value chain, eventually becoming a global leader in the sector."

An Uncommon Theory for Common Prosperity

The author of *In Line Behind a Billion People: How Scarcity Will Define China's Ascent* reflects on the scenarios put forward in the book and how they have come to fruition over the last 10 years

By Damien Ma, Managing Director of the MacroPolo think tank at the Paulson Institute

In 2012, my co-author Bill Adams and I set out with an idea for a manuscript that aimed to provide an enduring mental model for how to think about the Chinese political economy. That mental model was centered on viewing China's behaviors through the interplay of scarcity and competition. This was, we thought, a way to crystallize how China really worked in reality rather than through theoretical abstractions.

The timing was perhaps somewhat serendipitous as China had just gotten a new leader in Xi Jinping. And when *In Line Behind a Billion People: How Scarcity Will Define China's Ascent* was published in 2013, we proposed that various manifestations of scarcity would be the central challenge for the new administration for the next decade.

Nearly a decade since the book's publication, China has reached roughly 70% of US GDP, is the world's largest trader, and by most metrics is considered a global powerhouse. Yet even as it is on the cusp of escaping the middle-income trap, it has yet to shake off the scarcity trap.

One needs to look no further than the key decision made at the 19th Communist Party Congress in 2017, in which a new "principal contradiction" was rolled out. What that means in reality is that if China were to become the world's biggest economy by 2035, which is Beijing's stated goal, it would be accompanied by having the world's largest middle class.

That dramatic shift, then, will require resolving the new "contradiction" of meeting middle class expectations, including housing, education and social welfare that constitute what we termed "social scarcities." Numerous neologisms, the latest incarnation being "common prosperity," have been proffered by the Xi administration to capture policies that are meant to address these scarcities.

A key litmus test of any mental model is whether it has some utility in getting a few of the big things right. And in 2021, it seems clearer than ever that the Chinese leadership has reached a consensus that what defines China's continued development is no longer growth, but addressing the constraints posed by economic, social and ideological scarcities.

It is the only way to transform China's economy and to set it on course to becoming the superpower it aspires to be.

Economic scarcity

One of the most consequential economic scarcities highlighted in our book was labor. There is now a wide consensus within China that over the past decade the country reached its "Lewis turning point"—the rural-to-urban labor force transition has peaked. Huang Qifan, former mayor of Chongqing and well-known technocrat, admitted recently that urbanization will not contribute much to China's future growth.

An aging population and an outdated fertility policy mean more workers are aging out of the labor force than are being replaced. Or to the extent that they're being replaced, it's from the excess of college graduates over the last decade, many of whom are making only marginally more than migrant workers. China's college bubble may have left graduates without debt, but also without prospects.

Although China's total labor force is still around 900 million strong, its structure no longer supports an export- and investment-intensive growth model, not least because there is significant upward pressure on labor costs.

Dual circulation, then, is Beijing's espoused strategy to initiate the necessary pivot to developing the domestic market now that exports and urbanization are taking a backseat in terms of growth. In other words, Beijing is hoping to actualize what has been previously referred to as "rebalancing," which is ultimately about building a more robust consumption economy.

Although "self-reliance" has been viewed as a controversial aspect of the dual circulation policy, it is predominantly about expanding the middle class, the only proven way to create sustainable domestic consumption. To achieve such a state requires a host of consumption-oriented policies, including a more market-based currency, financial sector liberalization and pro-income measures—all of which have been put into motion.

Logic, apparently, dictates that foreign investment and foreign goods will naturally flow into the China market on the back of the world's largest middle class with rising purchasing power—just as they flow into the United States. This is why, despite the optics, the messaging behind the strategy maintains that it isn't about barricading the domestic market at the expense of foreign investors but ensuring the latter also serve the China market to ride the new wave of consumption.

> **If there is ever a system with a powerful enough force in the center to achieve certain goals, it's probably China's**

Social scarcity

Social scarcity mainly evinces itself as ongoing underinvestment in sectors from higher-education to welfare and affordable housing. Supply-side structural reform is many things packaged in often unclear political lingo, but at its core is the prognosis that China has over-invested in areas such as steel and infrastructure and under-invested in everything from the high-tech supply chain and clean energy to pensions and health care.

How that scarcity has played out is somewhat obvious. Beyond the demand and supply mismatch of college graduates, the recent upheavals in the education industry can be viewed as an indictment of the public education system. The fact that a popular and profitable alternative education sector exists highlights both the ultra-competitive nature and ailments of an education system in need of change.

Moreover, local governments' systematic underfunding of health care and pensions has led to empty retirement pots and a crisis in China's hospital system that has led even to bouts of violence. More than once, corruption cases have involved local officials using pension funds to invest in the next bridge or housing project.

These issues directly affect the ability to bolster domestic consumption because such social scarcity impacts households' precautionary savings and constrains increased spending. If young Chinese believe they must save for 15 years to stand any chance of purchasing a home, it will be difficult to unleash consumption quickly.

As such, supply-side reforms are actually fairly simple to understand. It is fundamentally about investing less into "GDP-maximizing" efforts and investing more into "quality of life" areas. A reallocation of capital to supply things aligned with the current stage of development.

Of supreme consequence in supply-side reforms is investing in human capital, which of course is at the heart of how innovative China can become. Understanding this will lead to changes in the education system that appears proficient at pumping out capable engineers but perhaps fewer business and technology visionaries than in the Western system.

Political scarcity

While the principal contradiction paves the way for resetting the current growth model, it is a proposition that's as profound as it is risky. At the macro level, it will require a broad tolerance for slower growth, which will be politically difficult and a recipe for stirring up opposition.

Although the current administration has so far shown strength in embracing austerity, including throwing out the GDP target in the 14th Five-Year Plan, such a shift is certain to undermine beneficiaries of the current growth model.

For one, local governments and property developers are groups that could easily end

Damien Ma is managing director and co-founder of MacroPolo, the think tank of the Paulson Institute. He is the co-author of *In Line Behind a Billion People: How Scarcity Will Define China's Ascent in the Next Decade*. He is also adjunct faculty at the Kellogg School of Management at Northwestern University

up in the "loser" column. Their centrality in maintaining the status quo, from land and housing to infrastructure investments, will likely drop off as existing drivers of growth are wound down.

For China, losing its status as a "growth engine" may be akin to a loss of identity and is a difficult pill to swallow for local governments used to a single, clear metric. Throughout all levels of the Chinese body politic, if GDP is no longer worth reaching for, then what is?

These powerful constituencies can contest the current administration's agenda and create weaknesses, and any change of this size requires political buy-in. Xi has relied on two tools to create political space for this risky gambit: dialing up propaganda and providing sustenance to fill what had become, over the decades since 1979, an ideological scarcity as the party had sought to become less obtrusive.

This is where "common prosperity" enters the field. Xi has wrapped up a challenging agenda into a palatable political message: this economic transition isn't exclusively about taking away your bread and butter, but about achieving prosperity for all.

Indicative of how politically fraught this transition could become, the CCP has already taken pains to extrapolate on what it means by "common prosperity." It has made it very clear that "prosperity" comes first, and "common" second.

That's because Xi is on the hook to deliver on the "Chinese Dream" that he first spoke of in 2012, which has since been solidified as the 2035 long-range plan. That goal hinges on doubling the size of the Chinese economy in 15 years to about \$30 trillion—in a word, prosperity.

Reaching that goal will be accompanied by a socioeconomic shift that will likely be painful, especially for those in the political class that have also benefited from the incumbent model. When the going gets tough, then Xi can turn to common prosperity as a salve.

Indeed, the instrumental role that such an aspirational vision has played during Xi's tenure is key to his credibility. One may interpret it as good old nationalistic propaganda, but its effect is tantamount to creating a "national myth" around which the country can rally.

Xi articulated the myth's plotline in his CCP centenary celebration speech in early 2021. The simple version of the story goes: China is born 5,000 years ago > fast-forward several millennia > in 1840 China is down-and-out in the face of Western imperialism > chaos and subjugation ensue > in 1921 the CCP is founded and rescues China, restoring greatness.

> Even as [China] is on the cusp of escaping the middle-income trap, it has yet to shake off the scarcity trap

Like all national myths, it omits uncomfortable chapters and skirts around inconvenient truths. But its simplicity is what makes it compelling as both a political platform and in filling the ideological void that was becoming an endemic problem for the CCP.

When he entered office, Xi inherited a fractious Party. He immediately identified ideological scarcity as one of the most pressing threats to the Party that he leads. Over the course of his two terms, he has supplied a concoction of ideas, vision, and aspirations to articulate a "Chinese way" and the "Chinese idea."

That idea of the great restoration, or national rejuvenation, has never been more prominent than it is now.

The force of necessity

The feasibility of what China is trying to achieve draws legitimate skepticism from many, what with a sputtering start to the deleveraging campaign that has given the market pause. Meanwhile, the latest effort to tame a frothy property market has also led to unexpected volatility.

Clearly, the strong pushback against change is the key lesson for Beijing to take away from the previous nine years. Generating systemic change in the face of such inertia seemingly requires the top leadership to take the country by the scruff of its neck and force a reset.

For many countries, that would be an impossible proposition, but if there is ever a system with a powerful enough force in the center to achieve such a goal, it's probably China's. It's no coincidence that militaristic metaphors abound when discussing the principal contradiction, since mobilization is one off the default features of China's system.

In the introduction to our book, we concluded that the "…dramatic transformations that have sprouted every ten years or so since the founding of the modern Chinese republic are reasons to believe that changes will come, if not willfully, then by the indomitable force of necessity."

That force of necessity appears to be the CCP's assessment as well.

Keeping China Healthy

Wang Rui, chairman of the China Association of Medicine and Health Culture's investment branch, offers an insight into China's health care system, its strengths and weaknesses and provides his view on what the future will hold

For a long time, China's medical service system has been mainly government-run, with public hospitals having a distinct advantage in terms of talent, technology and equipment. The public health care system emphasizes public welfare and consists of tertiary hospitals, secondary hospitals and primary care institutions, with tertiary hospitals performing high-level medical and research tasks, secondary hospitals performing routine treatments and surgeries, and primary care institutions the remaining bulk of day-to-day patient health care interactions. And while private health care only caters for around 15% of the total volume of patients in the world's most populous country, its popularity is on the rise. In this interview, Wang Rui draws on his experience as the chairman of the China Association of Medicine and Health Culture's investment branch and his 25 years in the health care industry, discussing the shifting landscape of China's health care industry, the growing involvement of technology and the increasing influence of private business.

Q. What are the main problems with China's health care system? What are the top issues it faces?

A. China's health care system currently suffers from an unbalanced distribution of medical resources and inadequate development on the supply side of the service. Firstly, there is an uneven geographic allocation of high-quality hospitals: 31 of the top 50 ranked hospitals in 2019 were either in Beijing, Shanghai or Guangzhou. Secondly, there is an imbalance in the allocation of hospitals between urban and rural areas with 935 million people in rural areas being served by just over 16,000 hospitals, compared to around 18,000 hospitals in urban areas for just 384 million people.

Third, there is also a lopsided distribution of the number of doctors between the east and west of the country and China has fewer practicing physicians per 1,000 people compared to the global average—2.3 and 3.5, respectively. Finally, there are too few available beds across the country. China has around 6.3 beds per 1,000 people, compared to 13.7 beds in neighboring Japan and 10.3 beds in South Korea. Clearly, there is still some way for China to go.

Q. How does the global economic slowdown affect China's health care industry? How can the industry maintain its momentum?

A. As the world's economic growth stagnates and moves toward contraction, the downward pressure on more economically sensitive industries is high, while the less economically sensitive industries, such as health care, show unique advantages. Data shows that in recent years total global health care spending had an average annual growth rate of about 6.6%, much higher than the economic growth index. China has also proposed to accelerate the implementation of a new "dual circulation" policy, with domestic development being the main focus and domestic and international dual circulation developing each other.

For the health industry, the focus on domestic development mainly refers to the need for health management, medical services, rehabilitation and elderly care, health insurance and other service products to be in line with national needs, public sentiment and to prioritize domestic demand. Doing so should result in the steady development of the Chinese health care sector. When we talk about the domestic and international circulations developing each other, it mainly refers to biomedicine, high-end medical devices and other import and export products that can be improved through open innovation and a mutually beneficial

Wang Rui is the chairman of the China Association of Medicine and Health Culture's Investment Branch. He also works as an investment expert for the China Insurance Asset Management Industry Association, having previous work experience at primary and tertiary hospitals in China

industrial development model. Chinese businesses need to join hands with global partners because through technological innovation, capacity innovation, business model innovation and with a core competitiveness, we are in a better position to fight for a spot at the forefront of medical developments. Proper implementation of the "dual circulation" policy within the health care sector will spur China's advancement and provide an opportunity to help the rest of the world.

Q. How competitive is the market in China's health care sector? What is the size of the market?

A. In recent years, given consumer demand and national policy support, China's medical, recreational and health care industry has been gradually standardized. Insurance companies, real estate companies, listed pharmaceutical companies and traditional conglomerates, among others, have entered the market for different purposes, but all have seen large profits, leading to a further influx of players. It is predicted that the country's health care industry will quadruple in size between 2015 and 2030, rising from RMB 3.8 trillion to a massive RMB 16 trillion. This growth will be fueled by expansion of traditional medical services such as pharmaceuticals and biotechnology, but also by a wide range of emerging industries. The commercial medical insurance industry alone is expected to reach RMB 1.5 trillion in size by the end of the 14th Five-Year Plan.

Q. Technological innovation has become an important force leading the transformation of the global health care industry. Can you give us examples of areas and fields in which China has taken the lead?

A. China is at the leading edge of the commercialization of 5G to boost the development of various industries, and 5G has important applications in the health care industry. For example, in remote surgery, 5G can establish an exclusive communication channel between upper- and lower-level hospitals, guaranteeing the stability, real-time accuracy and safety of remote surgery. This allows experts at top hospitals to control the surgical processes and patient condition at any time and from anywhere which means that surgery for patients at lower-level hospitals across geographical areas can be provided by highly skilled surgeons at a reasonable price.

There is also blockchain technology, which is an effective tool for the health care industry to solve many pain points and can provide fertile ground in the process of building medical service systems, pharmaceutical production systems, insurance payment systems and government decision-making systems.

Q. How is health care in China being digitalized? What are the roles of the state and private companies in this?

A. The digital development of health care in China can be divided into three main stages: First, the creation and proliferation of hospital information systems, clinical information systems, electronic medical records and other information systems. Second comes regional integration, whereby medical information systems represented by the Regional Health Information Platform are linked to provide more intelligent and collaborative services for hospital groups, allied hospitals, medical bodies, etc., while the health information platforms are linked to smart city information systems. The final stage is intelligent digitalization. Big data, cloud computing, artificial intelligence and other emerging information technologies are becoming deeply integrated into the health care system.

The state has a leading role in this, and its impact on medical digitalization comes in three main areas. First, policy guidance. China has issued a number of policies to encourage and support the development of medical digitalization, which have resulted in the rapid digitalization of China's health care system. Then there is the state's role in incubation and cultivation of new research and technologies. In medical digitalization, the state has encouraged different types of scientific research topics and allocated a lot of research funding to provide the basis for related research and development output. Third, it is responsible for industry promotion. The state promotes the development of health care digitalization and related industries, and promotes the mutual integration of the industrial chain, supply chain and value chain.

Private enterprises also play an irreplaceable role in the digitalization process of health care in China. On one hand, private enterprises have inherent advantages in talent, incentive mechanisms, innovation strengths and market connections, which can accelerate the implementation of new digital technology. While also using efficient and diversified financing methods, they can quickly absorb social capital and create the momentum to spur the development of the industry. On the other hand, the government also encourages private enterprises to participate in ramping up health care digitalization and fully mobilizing the enthusiasm of private enterprises, especially the highly innovative internet enterprises, to promote industrial upgrading.

Q. What is the current state of development of primary care in China and the problems it faces?

A. There are several reasons behind the need for development of primary care in China, one of which is its importance. Primary medical institutions have always been the mainstay of the people's access to medical care and by the end of 2019, there were 954,390 such institutions, accounting for 94.72% of the total number of health care institutions nationwide.

There are also personnel issues, with only around 2.291 million health technicians in primary medical institutions who, in contrast with secondary and tertiary hospitals, have to serve the whole Chinese population. Even without a lack of staff, the workload for those working in primary care institutions is massive. The average number of consultations per day for staff at primary medical institutions is around 12.9, and in urban community health service centers that can rise to 16.5, which is significantly higher than the national average of 7.1 consultations per day for physicians.

A gap between the vocational skills training and post-employment talent training of primary care providers, compared with in large medical institutions, resulting in a lower level of service capacity in primary care institutions also presents a problem. And finally, wages in primary care are lower. In 2017, the per capita annual income of public hospital employees was, on average, RMB 110,000, while the per capita annual income of primary health care institution personnel was less than RMB 100,000.

At present, people's trust in primary care institutions is generally low, and the contradiction between the need to provide public welfare via primary health care services and the safety assurances demanded by the public for daily medical care is becoming increasingly pronounced. In the future, big data, cloud computing, artificial intelligence and other cutting-edge technologies will become the core driving force of a new round of industrial change, artificial intelligence-enabled primary care may be a practical measure to make up for the shortcomings of current primary care services and strengthen the efficiency of public health services.

Q. What is the role of insurance companies in the Chinese health care system compared to other countries?

A. The "Healthy China 2030" plan outline proposes the "improvement of a multi-level medical security system with basic medical insurance at its core, complemented by other forms of supplementary insurance and commercial health insurance." Therefore, insurance companies are an important complementary force in China's medical system. However, compared with other countries, China's commercial insurance industry started late. Whether it is major medical insurance for urban and rural residents, which is a supplement and extension of basic medical insurance, or the various types of commercial health insurance developed independently, there is still a lot of room for improvement for commercial insurance companies to supplement medical insurance in terms of the actual sharing effect of medical costs. In the future, the connection between commercial health insurance and basic medical insurance will be more obvious, and the role of commercial insurance's supplementary positioning will be more prominent.

Q. What is the role of private companies in China's health care system? How does this compare to other countries?

A. In the United States, up to 85% of all medical institutions are private, and the majority of highly-ranked hospitals are private, a phenomenon completely different from China where top hospitals are government-run. In recent years, under the guidance of national policies, private medical institutions have developed rapidly, and from 2010 to 2019 the number of private hospitals increased from 6,461 to 22,081, going from 31.78% of all hospitals to 65%

With global partners, we are in a better position to fight for a spot at the forefront of medical developments

and exceeding the number of public hospitals. By 2019, the total treatment volume of private hospitals accounted for 15.29% of the overall volume of all hospitals and it has become an important supplement to public hospital services.

However, private medical institutions in China are struggling to develop in the large, comprehensive and asset-reliant service areas, but are developing very strongly in the small-scale and easy-to-replicate areas such as dental clinics or optometric centers.

Q. How do you see the Chinese health care system changing in the next 5-10 years?

A. In the next 5-10 years, China's medical system will improve through continuous reshaping. The health industry is changing from a service used only when ill, to a full lifecycle health management service, a model which covers the extensive, social and holistic nature of human health. From the viewpoint of service institutions, it is no longer the simple route of registration, consultation, payment, examination, report, prescription and drug collection, but now a requirement for a holistic approach.

From the perspective of individual services, the focus will be on the whole human lifecycle and the integration of everything from health management to medical services, to rehabilitation care and elderly health care will become a necessity. Improving the success rate of medical treatment so as to achieve a reduction in all kinds of disease and an increase in quick and effective treatment, as well as providing better ongoing health care after treatment is also a priority.

Different groups of people have different service needs, so in the future, we will need to build a model that includes all aspects of preventing illnesses, managing chronic illnesses, consulting for minor illnesses, treating serious illnesses, and going through rehabilitation, and this will become the mainstream direction for the industry's development.

Interview by Liu Yingying

CKGSB BUSINESS CONDITIONS INDEX

Tentative Steps Forward

CKGSB's Business Conditions Index, reflecting confidence levels in China business, reveals a cautious optimism for the future

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

In the final month of 2021, the CKGSB Business Conditions Index (BCI) experienced something of a rebound, rising from 49.2 to 53.1, and breaking through the confidence line of 50.0. Company operations are, in the eyes of our sample, in a better place going forward.

Introduction

Since September 2011, the CKGSB Case Center and the Center for Economic Research have conducted a monthly survey, called the Business Conditions Index (BCI), to gauge the business sentiment of executives regarding the macroeconomic environment in China. Under the direction of Professor Li Wei, 121 surveys have now been completed and 116 monthly reports published.

The CKGSB Business Conditions Index 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.

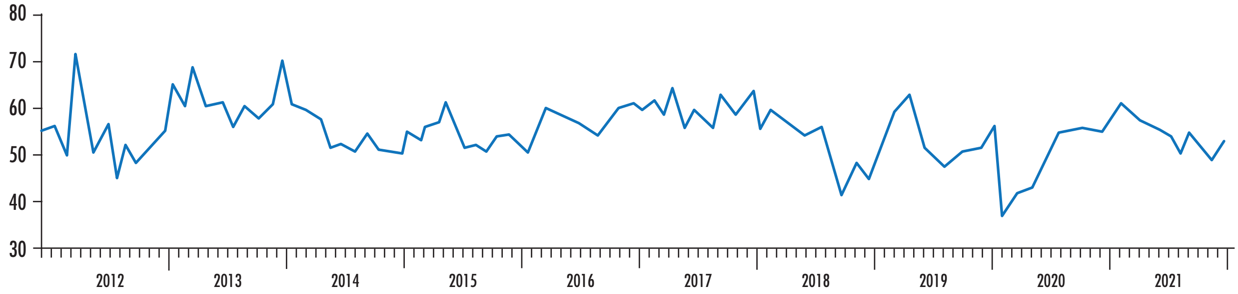
Key Findings

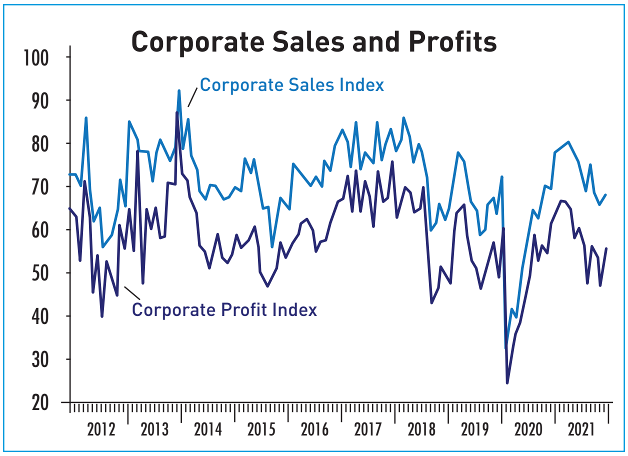
- In December, the CKGSB BCI broke through the 50.0 confidence barrier, registering an index of 53.1.
- Our BCI shows that there is a somewhat optimistic outlook for company operations in the future
- The corporate profit index jumped by over 7.5 points, marking a significant rebound from the previous month

Analysis

The CKGSB BCI comprises four sub-indices: corporate sales, corporate profits, corporate financing environment and inventory levels. Three measure future prospects and one, the

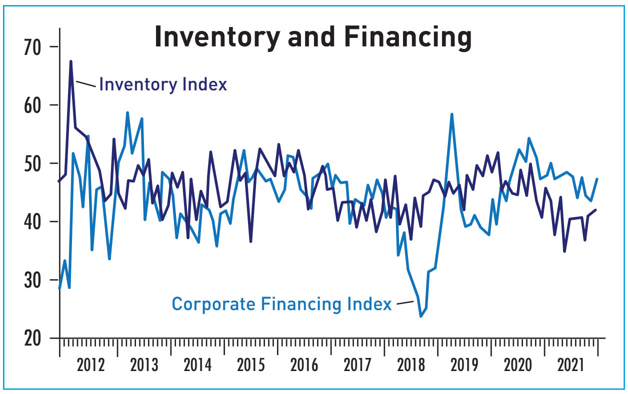
Business Conditions Index (BCI)



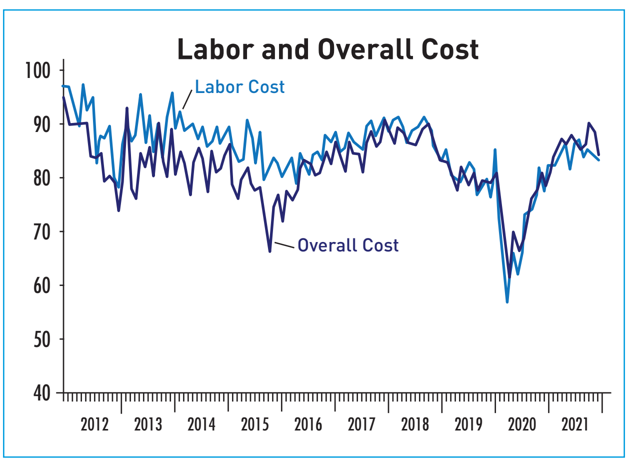


corporate financing index, measures the current climate.

In December 2021, all four rose. The corporate sales index rose from 66.5 to 67.8, and the corporate profit index rose from 47.1 to 54.8, a clear rebound from last month.

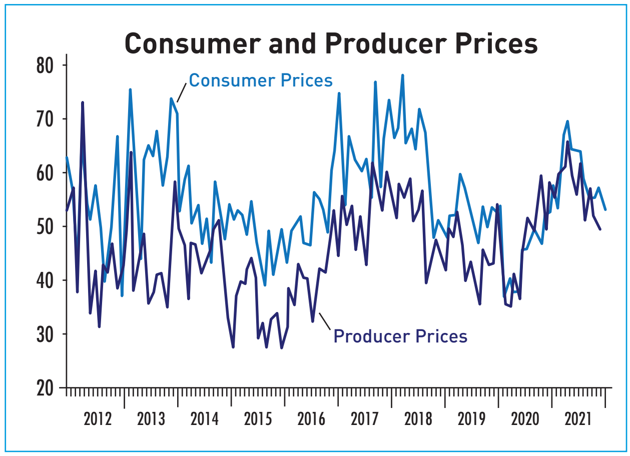


Corporate financing prospects bounced back somewhat, with the index up from 43.9 to 47.1 this month, but still below the confidence threshold. The inventory index registered a slight improvement from 41.3 to 41.9 this month. In terms of these two indices, our sample companies have given a persistently



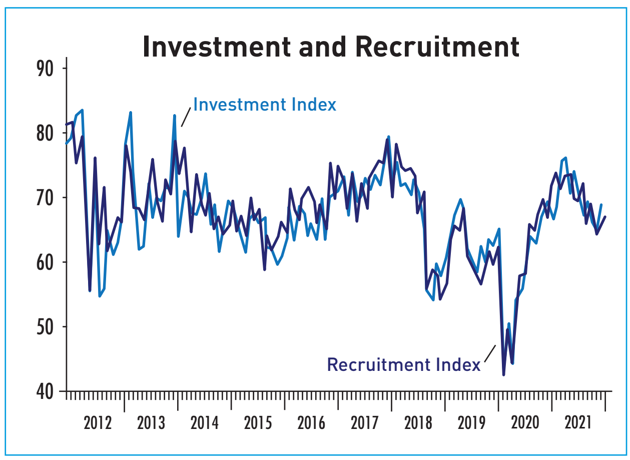
negative outlook since our survey began in 2012.

Aside from the main BCI, we also forecast costs, prices, investment and recruitment demand over the next six months. We begin with costs:



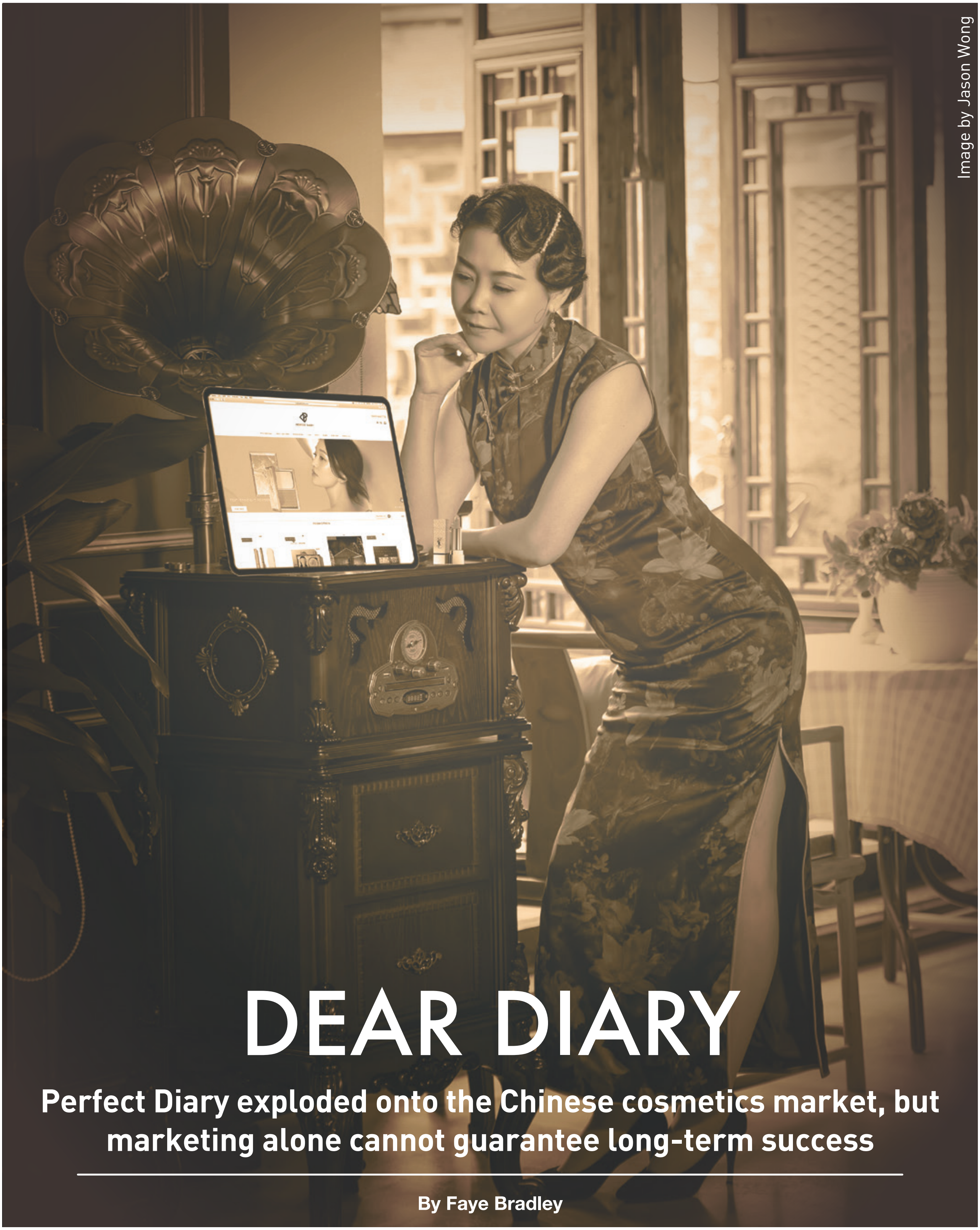
The CKGSB BCI labor cost forecast fell marginally, from 84.2 to 83.4. The overall costs forecast fell from 88.6 to 84.9. In terms of prices, the consumer price forecast fell from 57.1 to 53.4 while the producer price index continued to head south from 51.8 to 49.6, a reading below the confidence index.

Turning to investment and recruitment. These indices have been consistently at the more confident end of the scale since the BCI began. In recent months, both have trended downwards, especially recruitment. This month again, both indices rose, with investment prospects up from 65.0 to 68.3, and the recruitment score up from 64.9 to 66.6.



Conclusion

The trends in December's BCI have remained largely unchanged from the previous month. Based on the current levels of confidence in the sectors covered by our BCI, there seems to be a generally optimistic outlook on company operations in the near future.



DEAR DIARY

Perfect Diary exploded onto the Chinese cosmetics market, but marketing alone cannot guarantee long-term success

By Faye Bradley

Although Perfect Diary has a stellar image, a lack of strategic development has slashed investor confidence

It was an amazing record—barely 13 minutes into the 2019 Singles' Day, China's e-commerce mega-sale, Chinese cosmetics brand Perfect Diary hit a staggering RMB 100 million in sales and became the top selling cosmetics brands on Tmall. The curiously named cosmetics company became the first domestic brand to dominate the sales charts in such a way, topping international beauty brands including giants like L'Oréal and Maybelline. And it wasn't a one-off—the company ranked first for beauty brands on Tmall again on Singles' Day in 2020.

Domestic beauty brands in the China market have something of an inferior reputation when compared to their international counterparts. But Perfect Diary's initial explosion onto the Chinese beauty scene brought with it an air of quality and a high level of marketing, and for a time, the company escaped the reputational constraints to overtake the perennially dominant beauty dynasties of the West, Korea and Japan. It was quick to learn and adapt to new environments, merging East and West in new and creative ways.

But Perfect Diary is also an excellent example of how failing to shift business focus, after reaching a certain size, can jeopardize initial runaway success and the year 2021 was not kind to the company. The share price reached a peak of just under $25 in early 2021 and by the end of the year had dropped by over 90% to $1.82. The question then was, would it be possible for Perfect Diary to pull themselves out of its nosedive?

The first entry

Founded in 2017 by Harvard MBA graduate David Huang, Perfect Diary is a makeup brand that targets women aged 20 to 35 with high spending power. It first entered the market by selling exclusively online on Chinese e-commerce sites, starting with Taobao and Tmall, followed by Xiaohongshu and WeChat. The brand then formed partnerships with Douyin and JD Store and, in 2019, established its first offline store in the southern Chinese city of Guangzhou. By June of that year, Perfect Diary had 40 stores in China.

The company did not struggle for cash initially as many other brands have and raised $240 million through several rounds of funding before its parent company Yatsen Holding listed on the New York Stock Exchange in late 2020, garnering a further $660 million. Its rapid expansion led to an announcement in 2020 of plans to open 600 stores in China over the following three years—a dramatic shift from the initial digital focus. "E-commerce is a quick way to launch a brand and is cheaper than brick and mortar," says Charlie Gu, founder of cross-border marketing consultancy Kollective Influence. "But brick and mortar still accounts for a much larger market share."

By smartly leveraging social media, Perfect Diary was able to stand out immediately, allowing it to quickly generate a leading presence in the beauty e-commerce industry. "Like Shein [a Chinese fast-fashion brand], the advantage, other than lower pricing, is these Chinese brands really understand how to operate relying wholly on social media channels such as TikTok," says Jenny Chen, co-founder of WalkTheChat, a cross-border marketing software agency.

The company also took a unique approach to its physical store expansion. "Perfect Diary innovatively used 'new retail' when opening its offline stores, connecting its offline stores to its online traffic to better serve customers," says Ye Chen, a research analyst at ChemLinked, a leading provider of Asia-Pacific regulatory market intelligence across food, cosmetic and agrochemical industries. "It also opens experience stores where there are places to display products and for consumers to rest and have refreshments—they are like a new kind of cosmetic store full of a sense of technology."

"I go to malls with my friends quite a lot, but mostly for the social aspect rather than the shopping," says Ivy Wu, a 28-year-old teacher, who currently lives in Hangzhou. "The Perfect Diary store felt like it was designed for the social side of shopping so we spent more time there and ended up trying and buying the products."

By 2019, Perfect Diary had already

become the number one beauty brand among young followers on Tmall, beating out all international brands and is now easily the most popular domestic beauty brand in China. Alongside Huawei and Li-Ning, it has been ranked in the top 3 most popular brands among Chinese Gen-Z consumers.

Then seen as the king of Chinese makeup brands, Perfect Diary aimed for regional dominance by expanding outwards in 2019 to nearby countries such as Malaysia, Vietnam and Singapore. The company reached the top of sales charts on Shopee—a leading e-commerce platform in Southeast Asia.

While the future at that point looked promising for Perfect Diary, the cosmetics market is a crowded space and competition—both domestic and international—was fierce. And while marketing and online sales can provide stellar growth, they are not a guarantee of long-term success.

China's beauty market

In 2020, the Chinese beauty market was valued at RMB 340 billion ($53 billion) and is expected to grow at a compound rate of 6% per year to reach RMB 561 billion ($87.64 billion) in 2025. The market has long been dominated by Western giants such as L'Oréal, but Korean and Japanese brands have also been present in the China market since the early 1990s, with products fine-tuned to the needs of Asian customers. However, various government crackdowns have seen the Asian brands' popularity wane in recent years.

Western imports tend to struggle to adapt to China's diversified set of media, unlike Perfect Diary and the many other new Chinese beauty brands born online. The use of digital tools like livestreams, and working with Key Opinion Leaders (KOLs)—authority figures on a certain topic—and Key Opinion Consumers (KOCs)—experts at testing and reviewing products—is crucial in attracting young and new consumers. "KOLs are leveraged to convince consumers and affect their purchasing decisions," says Ashley Dudarenok, founder of Chinese digital transformation academy, ChoZan. "They allow for people to relate to a brand in a way they can't if they're just being shown an advert."

Initial success

Perfect Diary has been a master in leveraging the power of omnichannel marketing—utilizing several different communication channels at once—and was one of the first to apply the strategy. The beauty brand worked with China's "King of Lipstick" Li Jiaqi, one of the country's biggest KOLs, in 2020 to bring awareness to products through livestreams that were viewed by Li's millions of followers (you can read more about KOLs in the August 2021 edition of *CKGSB Knowledge*). The use of collaborations with high-profile celebrities like actress Zhou Xun has also added luxury appeal to the brand.

Using social media apps like Xiaohongshu, Perfect Diary utilizes these celebrities' recommendations to draw traffic to products. Then it worked with vlogs and posts created by the KOLs, leveraging them to convince consumers that the product is worthwhile.

Krystal Wei, a 23-year-old tech PR specialist from Shanghai, and an avid user of Perfect Diary products, says she found the company through her friends who had seen celebrity endorsements. "My friends knew of the brand because of their favorite celebrities endorsing it," says Wei. "They had seen KOLs promoting the products and recommended it to me based on that and the deals that were being offered."

Alongside heavy utilization of KOLs, KOCs and celebrities, Perfect Diary pioneered the use of some unusual collaborations—the brand debuted at the Milan Fashion Week in 2018 and has established co-branding partnerships with several museums worldwide. Its colorful makeup palette partnership with the British Museum was a big success and during its Singles' Day promotion in 2018, sold at a rate of one every 11.5 seconds.

"Perfect Diary collaborated with a lot of unusual sources," says Ren Siquan, Corporate Branding Manager at LABBRAND. "They partnered with *China National Geographic* magazine, taking the natural landscape in China as inspiration for an eyeshadow palette, which was quite a creative move." The collaboration has garnered millions of views on Chinese social media sites—it reached 7.4 million on Weibo alone. Perfect Diary has even collaborated with cookie company Oreo to create a blemish concealer cream.

And the company continued to innovate, pioneering a move away from public traffic streams—such as social media—towards private messaging platforms. Drawing consumers from major platforms into Perfect Diary's own ecosystem allowed them to take far greater control of consumer data and avoid customers being drawn in by competing products on e-commerce platforms.

Here it utilized virtual avatars to pose as KOCs in the manner of a friend or consultant. Customers can interact with the AI in a way that is like visiting a store. "Something else Perfect Diary did well was utilizing the big e-commerce platforms as a Trojan Horse to draw traffic to their owned channels so it can maintain the customer data and loyalty," says Mark Tanner, managing director of marketing company

TOPPING CHARTS | The top spot on Singles' Day sales charts on Tmall regularly belongs to Perfect Diary

No.1	Perfect Diary	No.2	MAC
No.3	Estée Lauder	No.4	Lancôme
No.5	Maybelline	No.6	Florasis
No.7	Givenchy	No.8	Armani
No.9	3CE	No.10	YSL

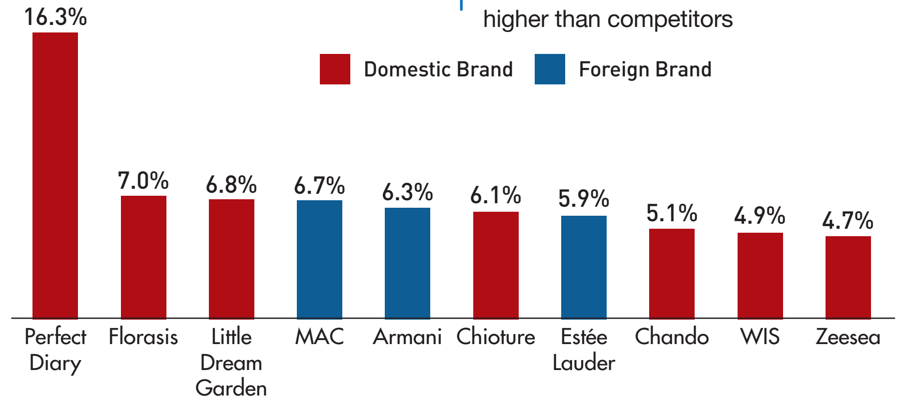
Source: Tmall 2020

China Skinny. “The alternative is it all goes to Alibaba or JD which drives more price competition and promiscuity.”

But these sorts of brand expansions tactics aren’t for everyone. Working with big names early on requires money, and lots of it. “For example, livestreaming is a good way to kick off sales,” says Jenny Chen. “It’s not organic growth, nor a long-term strategy, but it is great for fast-growing brands that are backed by investors, and that is what Perfect Diary is.”

ATTRACTING ATTENTION

The percentage of people who follow cosmetics on social media, who also follow Perfect Diary is significantly higher than competitors



Sources: Daxue Consulting

Hiding the blemishes

But it is this non-organic growth that may have gotten Perfect Diary into trouble. Expanding so rapidly and still being dependent on online sales for the majority of their income has left the company in a position that could be untenable in the long-term. This is reflected in the 92% drop in their share price and the investor confidence implications that come with it.

Despite the company’s expansion into offline stores, online sales still constitute 80% of its income, and online, product prices must remain low in order to compete. Couple this with their massive marketing spend and the problems are clear—whenever Perfect Diary sells a lipstick online for RMB 89.9, they will have paid around RMB 63.3 in marketing costs alone. If you factor in production costs, the company is surely making a loss on the sale of many products.

“They spend close to 70% of sales on marketing, whereas L’Oréal, Estée Lauder and others are less than half,” says Tanner. “Even other Chinese brands such as Jahwa are only around 40%. It is not a sustainable model, particularly now they are publicly listed and need to have an element of transparency. Their marketing plan is vulnerable to the ever-increasing cost of acquisition, in addition to government regulations’ impacts on KOLs and celebrities.”

Companies that grow like Perfect Diary need to quickly shift their focus onto increasing their product catalog, greater vertical integration with their supply chain and an increase in R&D spend. For Perfect Diary this shift is still a long way off. The company reported an operating income of RMB 1.44 billion ($230 million) in Q1 2021 with an enormous marketing expense of RMB 1.04 billion, while R&D spending was only RMB 27 million, equivalent to just 3% of marketing expenses.

There is also the perception of a growing disconnect between Perfect Diary’s public image and the quality and range of its products. The rise of copycats—online companies making similar products for lower prices—is only exacerbating the company’s lack of new product development.

“When Perfect Diary gained popularity with their “big brand substitute” concept, other domestic brands also began to imitate it,” says Ashley Dudarenok. “Other well-known domestic make-up brands, have cooperated with famous OEM factories such as COSMAX and Intertek. Not to mention, [Perfect Diary’s] KOL strategy has been discussed by the whole industry.”

All of these foibles have exposed the cracks in Perfect Diary’s reputation. “There has been some negative airtime over their quality control,” says Tanner. “Similarly, they are not known to innovate any more, and just follow market leaders through their OEM model. They have made acquisitions in Europe to try and help this, but are still a long way behind the leaders.”

Kiss and makeup?

Perfect Diary has made its mark in its homeland and neighboring Asian regions thanks to its strong understanding of omnichannel marketing, especially utilizing unique collaborations with unusual partners. But, despite its initial successes, the company is now in the unenviable position of needing to pivot its business strategy towards longer-term sustainable development, or else risk losing investor confidence even further.

“The Western legacy brands are not new to Asia and China any longer and Perfect Diary provides solid alternatives to Chinese consumers,” says Martin Roll a senior advisor to Fortune 100 companies and Author of *Asian Brand Strategy*. “But Perfect Diary also shows that brands need to develop, nurture and maintain to stay relevant, differentiated and daring.”

The company has recently purchased high-end British beauty brand EVE LOM in an attempt to bolster its reputation and provide itself with a new product base. But without decreasing marketing spend and increased innovation and R&D, Perfect Diary’s problems are unlikely to abate, and challenging the long-term dominance of Western giants seems a long way off.

“I think they still have a long way to go to match L’Oréal head to head on innovation and sustainable models,” says Tanner. “I think their branding and value for money could challenge L’Oréal, but to raise themselves to the right standard will need some fundamental shifts. It is possible, but it will take time.”

CKGSB CASE STUDY

Linglong Tire: The Road to Success

After years of fast growth due to the explosion of car ownership, the Chinese tire industry led by Linglong Tire is looking to overtake the top international tire brands

By Teng Bingsheng, Professor of Strategic Management, CKGSB,
and Wang Xiaolong, Senior Researcher at the Case Center, CKGSB

The global tire industry dates back as far as the 19th Century with many of the brands that operated then, still operating today. By 2019, the market value of the global tire industry had reached $167 billion, with Michelin, Bridgestone and Goodyear regarded as the top tier of tire manufacturers, holding 15%, 14.6% and 8.2% market shares, respectively.

But, despite their historical dominance, the overall market share of these three players has dropped from 54.9% in 1998 to 37.8% in 2019. Over the same time period, Chinese tire companies' market share rose from 5.4% to 18.4% and by 2019 Chinese companies' share of sales reached 35.48%.

The COVID-19 pandemic saw many international tire companies suffer losses during 2020, but, thanks to a quick bounce-back to normality for China's manufacturing sector, Chinese tire companies did not suffer the same fate.

The origins of Linglong

Sometimes referred to as "black gold," tires have been an integral part of China's economic development over the last 40 years. Between 1980 and 1995 the number of trucks crisscrossing the country rose from 100,000 to around 800,000, and with it came an increased demand for tires—a laden truck requires tire replacements every six months.

The resulting proliferation of tire factories across China's provinces consisted of many smaller manufacturers and the industry as a whole had no real structure. Demand skyrocketed again when individual car ownership started to boom in the 2000s, and again with the introduction of new energy vehicles (NEVs) in the 2010s. In combination with generous government subsidies, tires became a sellers' market with some car manufactures having to book months in advance for supply.

Founded as Zhaoyuan Tire Repair Factory in China's eastern Shandong province in 1975, Linglong Tire went through 40 years of development before listing on Shanghai's Nasdaq-like STAR Market in 2016. It is now one of the largest tire manufacturers in China in terms of production, sales volume and revenues, and is among the top 12 tire manufacturers in the world, with its semi-steel tire production, radial tire production, overseas factory production and profit all ranking first in China in 2020.

Today the company mainly works on the design, development, manufacture and sales of tires for passenger cars, commercial vehicles and construction machinery vehicles and has seven production bases and seven R&D institutions worldwide. With a presence in 173 countries under brands such as Leo, ATLAS and EVOLUXX, Linglong sold 63.33 million tires in 2020 for a total of RMB 18.38 billion, up 7% year-on-year despite the pandemic.

Chinese brands on the rise

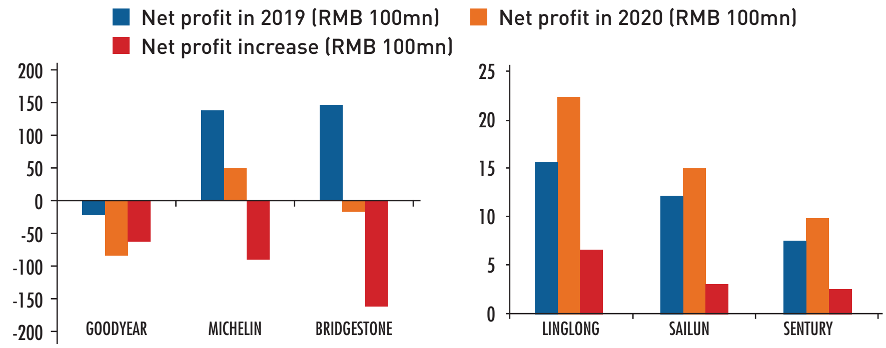
Events in recent years have led to an increased domestic focus for Linglong and the Chinese tire industry as a whole. Trade tariffs introduced by the US in 2015 saw an almost 95% decrease in China's tire exports to the country, falling from 50.4 million in 2014 to only 2.8 million in 2019.

But Linglong Tire was already in a strong position for strategic relocation having first developed a "3+3" globalization strategy in 2010—three domestic factories and three overseas—building their first overseas factory in Thailand in 2012. To this day, overseas factories contribute most of the net profit for Chinese tire companies—70% of Linglong's 2020 net profit came from its overseas factories.

The speedy recovery of manufacturing, and specifically the auto industry, from the COVID-19 pandemic in China highlighted the advantage of domestic companies, giving them access to more medium and high-end car companies and helping them encroach on the market share of the established overseas giants.

BURNING RUBBER | China's tire manufacturers dramatically outperformed the international giants in 2020

Change in net profit of tire companies and comparison: 2019-2020



Sources: Wind, Company Annual Report, Sinolink Securities

China's decades-long history of national policy support for investment in the tire industry has resulted in a level of quality of domestic products that equals, and in some cases outperforms, their international counterparts. In 2016 Linglong developed its first large-scale outdoor comprehensive tire test site in Shandong, now recognized as the best test site in Asia. It exemplifies China's intention to increasingly define product standards globally.

International brands of a similar quality as Linglong sell at higher prices but tend to have lower profit margins. These high costs partly stem from manufacturing inefficiencies. For Bridgestone and Michelin, raw materials constituted 20-30% of their total production costs between 2016 and 2020 and personnel costs made up around 30%, while for domestic Chinese brands raw materials were 55% of the total and personnel costs were only around 10%.

Building a brand

While Linglong has been improving the quality and performance of its tires, with some indicators now comparable to top-tier international brands, the unit price of its products is still on the lower side compared to top tier brands. Michelin, for example, can charge a premium based on its 120 years of brand history, and therefore Linglong recognizes the need to continue building its comparatively fledgling brand.

In 2020, Linglong spent RMB 174 million, accounting for 18% of their sales expenses, on domestic advertising, and RMB 35 million on other marketing and promotion. It has imitated international brands by developing a presence in the sporting world, with brand advertisements continuously appearing in international football, basketball and car racing competitions. It has also participated in car shows—such as the International Tire Show Cologne and SEMA in the US—and now has over 5,000 flagship stores nationwide and Linglong signage on an additional 20,000 channel shops.

As the company operates under several different brands, it has also segmented its tire products into market segments for different cars and applications, from low-to-high-end passenger cars to trucks and buses. But branding still remains the biggest bottleneck to success for Chinese companies and they still lag behind their international counterparts with an annual turnover ten-fold lower.

Sales in the tire industry

Historically, tire manufacturers have not focused on B2C—business to consumer—interaction, but have rather stressed ancillary sales direct to manufacturers and replacements sold through resellers for retail purposes. Overall the ratio of sales in the ancillary market to the replacement market has consistently sat at around 1:2.5.

Given that manufacturers will consistently work with the same brands due to the high impact tires have on the driving experience, supply relationships are highly monopolized by international brands that had the first-mover advantage. Chinese tire manufacturers have mostly been limited to working with car models valued below RMB 100,000, but the increasing quality of technology, performance and brand power has seen several domestic brands starting to cross that price threshold.

Linglong's tires are suitable for use on vehicles produced by most of the national Chinese automakers but have also started to be used by Volkswagen, GM, Ford, Honda and Audi, even on vehicles selling at more than RMB 100,000. But working directly with manufacturers has its drawbacks. Tires are sold to carmakers for 60-70% of the individual unit prices and certification cycles for original equipment manufacturers (OEMs)—carmakers—are around 2-3 years, sometimes even longer, meaning that it is hard for newer brands to break into this market.

While products remain the same in the replacement market, the sector differs quite significantly from the ancillary market, due to a lower frequency of consumption, lack of consumer technical knowledge, differing installation requirements and fluctuating prices. This means that shop staff recommendations, brand awareness, value, features and discounts all play a role in a customer's choice to buy.

The rise of the replacement market has been a boon for Linglong Tire, and a spokesman for the company said: "The follow-up market is a fundamental part of the tire industry and more than half of car owners will choose the original brand for their replacements." But there is still a lot of room to grow. The tire replacement ratio—the number of replacements one set of tires will generate in future—is only 1.1 in China, compared to around 4.5 in the EU and the US, and new regulations are set to address this. From January 2021 annual vehicle inspection rules will require a closer look at tread depth, and tires found to be substandard will have to be replaced.

Linglong's "new retail"

Brand building is at the heart of Linglong's future development vision and for it to

Rubbing shoulders: Linglong is catching up with global tire manufacturers

be successful it requires synergy across different approaches and platforms. Industry 4.0 and the Industrial internet—such as Internet of Things (IoT)—have helped Linglong to grow via digitalization as well as with the development of digitalization of production—the creation of intelligent factories.

At the end of 2019, the company signed a strategic cooperation agreement with Tencent Cloud and China System Intelligence, and during the pandemic this "new retail" model and system—which had been in the works since 2017—offset issues and allowed for Linglong to quickly resume sales. In late March 2020, the three parties released the world's first industrial internet platform for the tire industry, a digital transformation that put Linglong Tire in the fast lane.

Success was immediate. Linglong's domestic retail shipments were up 40% year-on-year in March 2020, making it the best month in the company's history—followed by a nearly 60% increase in April.

For Linglong, the first step of the "new retail" process was ensuring that dealers, shops, consumers, data and demand information is all interoperable and transparent. The old process of manufacturers selling to dealers without much data sharing did not allow for proper adaption to consumer needs. But "new retail" enhances consumers awareness and loyalty to the brand, helping it scale.

Closer integration between manufacturer and sales channel is required to boost sales in the replacement market. The intention is not to leapfrog the dealers, but form a better synergy with the entire channel and empower them to generate increased consumer value, which, in turn, benefits the whole ecosystem.

The development of "new retail" will completely digitalize the processes between the stores, distributors and vendors, meaning that shops can order online, participate in promotional activities and exchange points for purchases. The new system also solves the problem of a dearth of data for improving product flow as inventory can now be tracked from factory, through dealer's intake and outflow, all the way through shop inventories and then sales. This makes decision-making, production, the sales supply chain and data all "intelligent."

The future of "new retail"

Tire production is not a simple assembly line process. It is complex and spans multiple workshops, and the current levels of intelligence and automation have great room for improvement. The "new retail" pathway gives greater scope for improving the digitalization of the production process.

Increased access to the end user can also increase brand awareness which differs from the brand building used by traditional manufacturers. The "new retail" model aims to develop different branding and sales channels so that demand can grow alongside an increase in production capacity facilitated by digitalization.

The "new retail" project is divided into three phases: Phase one and two involves digitizing distribution channels. Phase three is to take the consumers and provide them with more products and services that allow for closer contact with the brand. The key is to establish a connection with users through high-frequency daily consumption and daily activities, so that they think of Linglong first when they have a need for a low-frequency consumer product like tires. According to Cai Yi, Vice President of Tencent Cloud, Linglong Tire's "New Retail" model has accelerated the transformation of the company from a manufacturer to a platform service provider and user operator.

There are currently around 10 million vehicle owner-users using Linglong Tire each year in China. With "new retail" done well, the company hopes to end up with at least 50 million vehicle owner-users and 300 million drivers in China by 2025. Wang Feng, chairman of Linglong Tire, said that "capturing more than 20% of the market is our 'new retail' goal."

Future Outlook

Bridgestone's rise to dominance over Michelin and Goodyear in the past two decades proved that brand barriers are not unbreakable, and Linglong Tire's rise to prominence has shown that it can compete on the world stage. Global market shares are trending towards Chinese brands.

For Linglong, "new retail" has been key to its recent growth and the company shows no signs of slowing down. With a continued focus on "new retail" and investment in the construction and intelligent transformation of several factories, the company's production capacity is expected to reach 120 million tires in 2025 and 160 million by 2030, placing it among the top five tire manufacturers globally.

PODCAST PROLIFERATION

After a slow start in China, podcasts are growing rapidly in popularity, and becoming a key channel for young people to absorb information and opinions

By Colin Peebles Christensen

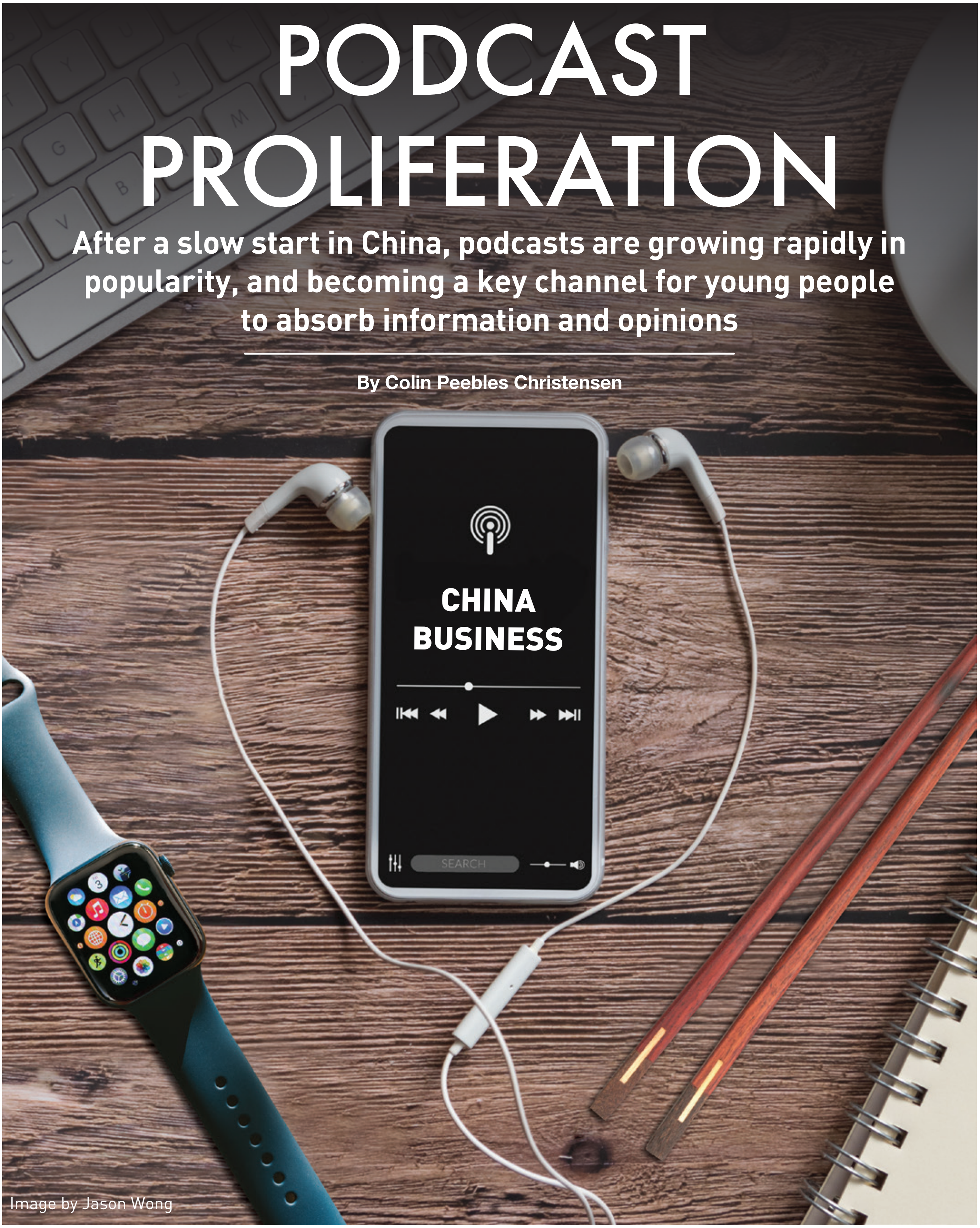


Image by Jason Wong

Podcast popularity in China is skyrocketing and the country has a far more diverse approach to the format than the West

The slogan of China's biggest podcast platform, Ximalaya, is "anytime anywhere, listening to anything I like," and the platform has seen incredible growth over the last few years. Since starting in 2014, it has helped drive the increase in popularity of podcasts in China and now has around 74 million monthly active users who access the platform's 2.1 billion minutes of content, spanning more than 100 genres, from audiobooks, through education to comedy.

China is relatively late to the party, with podcasts only really starting to take hold over the last two or three years, but it is now growing fast, increasingly in line with the podcast craze in the West. Listener numbers have increased by around 25% annually since 2019 and are expected to reach 102.4 million by the end of the year, placing China second only to the United States' 117 million regular podcast listeners.

"The Chinese podcast market is relatively new," says Steffi Noel, project leader at Daxue Consulting. "More than half of current podcast listeners joined in the last three years, with a quarter added just last year."

But the population penetration rate of podcasts in China remains low compared to the US, even though the catch-up is accelerating.

"Awareness about podcasting grows every year and the accessibility keeps getting better," says Laszlo Montgomery, host of *The China History Podcast*, running since 2010. "This whole notion of audio-on-demand still has plenty of growth potential as more people discover how to access it and enjoy it."

It's easy to assume that the Chinese podcast market—aside from some differences in topic choices—is similar to that of its Western counterparts. But there are noticeable differences in format, personnel, revenue sources and subject matter coverage that make this fast-growing media sector—that has the potential to replace radio entirely—worthy of a closer listen.

Emerging market

As with many other industries in a Chinese context, once it starts picking up speed, it doesn't take long for it to hit the mainstream.

"I would say the concept of podcasting did not appear in China until 2013," says Caiwei Chen, journalist and host of the *Redirect* podcast, a relaxed look at global online culture, and producer of the *Tech Buzz China* podcast. "That's when the earliest practitioners started their own pirate stations." At the time, podcast listeners consisted of small niche communities, but Chen says the upsurge in popularity was triggered by the entry into the podcasting space of social media opinion leaders around 2018.

Rio Zhan, a former venture capitalist turned multi-podcast host, agrees. "The boom, which I call Podcast 2.0, started in the last couple of years thanks to the launch of new platforms and the subsequent boom in popularity of Clubhouse [an audio-based social media app where users can communicate in chat rooms] both coinciding with the pandemic standstill," says Zhan. "Social isolation and extra time at home has helped popularize a

> **Awareness about podcasting grows every year and the accessibility keeps getting better**
>
> Laszlo Montgomery
> Host
> The China History Podcast

more intimate and less polished form of entertainment."

Young people born after the mid-1980s are driving the growth. "The bulk of the podcast listeners in China are digital natives in their mid-20s and 30s who reside in tier-1 and 2 cities," says Man-Chung Cheung, a research analyst at Insider Intelligence. "People who are seeking an alternative to mainstream media, who are curious about the world and want to listen to… offbeat topics."

There is a wide range of different subjects across the Chinese audio formats that pique listener's interest. *BB Park* (日谈公园), a daily talk show about popular culture, *Story FM* (故事FM), a storytelling podcast featuring regular people's stories, and *Left-Right* (忽左忽右), a weekly society and culture interview show, sit at the top of Apple's Chinese language podcast rankings in China. Guo Degang's podcast version of *xiangsheng*, a popular form of comic dialogue in China, also known as "crosstalk," currently leads on Ximalaya, followed by audiobooks for kids and romance novels.

Listenership is growing, but population penetration remains low at 8.7%, compared to 40% in the US—but for China, double-digit growth is expected to continue until at least 2025. As the numbers increase—they're expected to pass 100 million next year and likely reach 160 million by 2025—so are podcast revenues. PwC estimates expect related income to increase by 37.3% per year until reaching around $700 million in 2024. For contrast, the US podcast industry generated roughly $840 million in 2020.

Nuts and bolts

The term "podcast"—*boke* in Chinese—is loosely defined and in China the name doesn't necessarily mean the same thing as it does to Western listeners. China's audio market also includes radio dramas, audio comics—adaptations of comic books and graphic novels to audio formats, courses and audio live-streaming.

"The term podcast comes from Apple, and the iPod was never really popular in China, so the term is a bit unusual to begin with," says Rio Zhan. "Also, the content was originally based on US-style podcasts via iTunes, but that has now changed. It really depends on how you interacted with the early days of the internet in order to define what a podcast means to you. It's kind of hard to get a consensus of what a podcast actually is right now."

While Apple Podcasts—iTunes' successor—is available in China, there are much larger Chinese companies taking over. Ximalaya has more than a 50% market share and other challengers include Xiaoyuzhou, Lizhi, Qingting and Lanren Changting, acquired by Tencent earlier this year. De Dao, an online library of audio books and self-improvement content, is another popular source of *boke*.

While Ximalaya dominates the broader audio market, Xiaoyuzhou has been instrumental in driving the recent surge in popularity for podcasts in the Western sense, especially among younger urban consumers. This success stems from high-quality discovery features and a deeper understanding of their consumers—the team behind Xiaoyuzhou also run a popular social media app, Jike, giving them an insight that other developers lack.

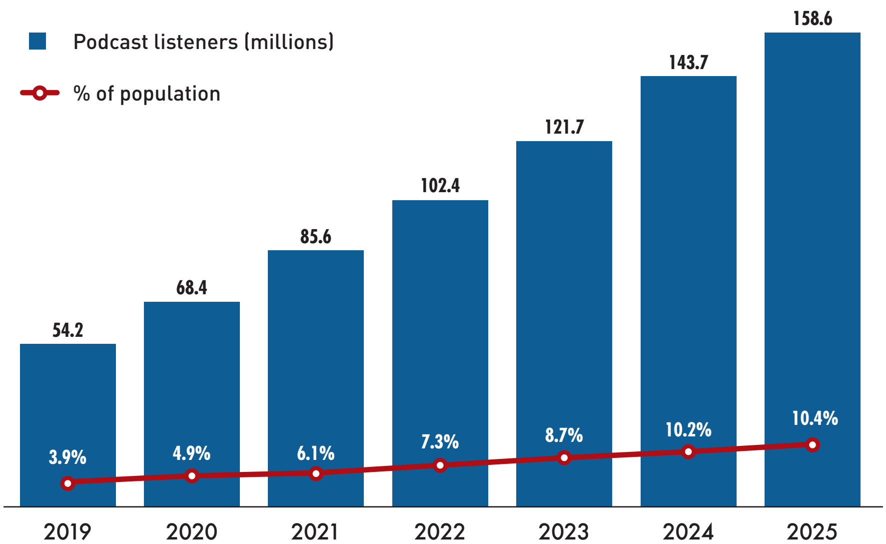
Guo Degang is one of Chinese podcasting's success stories. His comedy podcast currently has 18 million followers on Ximalaya and 73 million fans on Weibo, and he also extends into broader media domains by publishing content on Bilibili and Youku—both are Chinese video sharing websites.

The rise of key opinion leader (KOL)—people deemed connoisseurs of certain topics—culture in direct broadcasting, and the allure of internet fame and fortune, has encouraged the participation of a new type of entertainer who would usually shy away from video formats. "[Those] who may not wish to reveal their faces can still participate in the podcast market as hosts and earn lucrative returns from gifting and revenue sharing from the users and the platforms," says Wilson Chow, a global technology, media and telecommunications industry leader at PwC China.

Making money from podcasts has also become easier with a rise in revenue sources akin to those used by KOLs and other online celebrities through their livestreams, such as donations, sponsorships and platform-based revenue sharing systems. And as listenership has increased, advertising revenue has grown along with it.

"Profit through advertising is becoming more common. But at this point, it's hard to measure which is the larger share in terms of advertising, merchandise and small donations from listeners," says Yi Yang,

TURNING IT UP | China's podcast listening community is on the rise, with 10% of the population expected to be listening by 2024



Source: Insider Intelligence

Chinese podcasts 101

Perhaps the best way to understand Chinese podcasting is gained through listening in. Here are a few recommendations for your listening pleasure.

English Language

The **Caixin-Sinica Business Brief** offers a weekly round-up of top business and financial news from China.

Laszlo Montgomery's **China History Podcast** has almost 300 episodes of curated topics from China's antiquity to modern times.

Sinocism, hosted by China expert Bill Bishop, features discussions with experts from around the world with the aim of helping us all get smarter about China.

The new **China Sports Insider** podcast with Mark Dreyer looks at the crossover of sport and business in China.

Chinese Language

Tune into **Midnight Talk** (大内密谈), which is one of the earliest still-running podcasts. The show claims to cover "everything" and offers content in the traditional casual conversational format.

Yi Yang co-hosts the top-ranking **Left-Right** (忽左忽右) podcast, which aims to up the quality of Chinese podcasting through in-depth coverage of a range of topics, including society, politics, history and more.

Crazy Capital (疯投圈)—co-hosted by Rio Zhan, a former venture capitalist and podcast veteran—offering in-depth conversations in Chinese about entrepreneurship and investment in China.

founder of JustPod, a Chinese podcast platform. "For JustPod, the number one source of revenue is branded podcasts, followed by content purchases and licensing from audio platforms."

Listening Motivation

In general, podcast listeners are seeking an alternative form of media that is seen as more authentic, direct and genuine. Accessibility and portability also play a part in the media's popularity. According to Man-Chung Cheung, "people typically listen to podcasts during their downtime, when they are commuting, doing house chores and workouts, those times when it's harder to watch something."

Liwen Fei, a 32-year old from Shanghai who works at an investment bank, says she listens to the show Xianzhe Shijian on the Xiaoyuzhou app, usually in the morning while getting dressed. "It is a conversation between two girls, where they chit-chat about daily life. They talk about things that touch my heart, usually about their inner thoughts, and I find that it resonates with me," she says. "I also choose other forms of media, but podcasts are a channel to learn about the world."

Jiang Liu, a 37-year-old yoga coach from Shanghai, says he listens to a varying range of audio content on De Dao, covering health, lifestyle, science and wealth management. Liu says he chooses podcasts for convenience over books, as the time costs are lower and the podcast format requires less active attention. "Sometimes it's [when I'm] walking on the street, sometimes it's when I get up in the morning. I listen when I am brushing my teeth and washing my face," he says. "For reading, you need to find a quiet place and maybe you need to specifically dedicate time for it, but listening to podcasts is more convenient."

China compared

China's audio offerings are wide-ranging in terms of format and subjects covered, and while the US has an abundance of content—especially in terms of subject matter—it is mostly anchored in audiobook and podcast formats. There is also a difference in what each demographic wants.

"The Chinese podcast market stands apart in that the biggest pull of the medium is education [and] self-improvement programming," says Wilson Chow. "An overwhelming majority of listeners cite learning as the overriding attraction of the format, while picking up practical skills and pursuing hobbies are also important podcast draws."

In contrast to the popularity of educational podcasts in China, the top three American podcasts are more on the entertainment side of things—The Joe Rogan Experience, a broad-ranging conversational show, and *The New York Times* podcast *The Daily and Crime Junkie*, a true crime podcast.

This difference also seems to be reflected by China's younger, increasingly urban, podcast demographics. Over 80% of Chinese listeners are under 35 and over two-thirds live in larger cities. In comparison, more than half of the listeners in the US are older than 35.

Tech heavyweights such as Amazon's Audible and Apple Podcasts run podcasting as extensions of the company's core business in the US, whereas China is dominated by a larger number of independently run platforms.

In terms of monetization, in the US, audiobooks are mostly supported by on-demand payments or membership subscriptions, and podcasts through advertising. In contrast, paid content, gifts and tipping are not uncommon in China, while subscription infrastructure remains weaker.

Xiaoyuzhou is currently experimenting with the subscription model, but there are some issues with its adoption in China. "Due to limitations in the few payment platforms in China it's very hard to get recurring payment going right now," says Rio Zhan. "It hurts the chances of developing a subscription-based model a lot. So this isn't something we can really do yet."

Fine-tuning

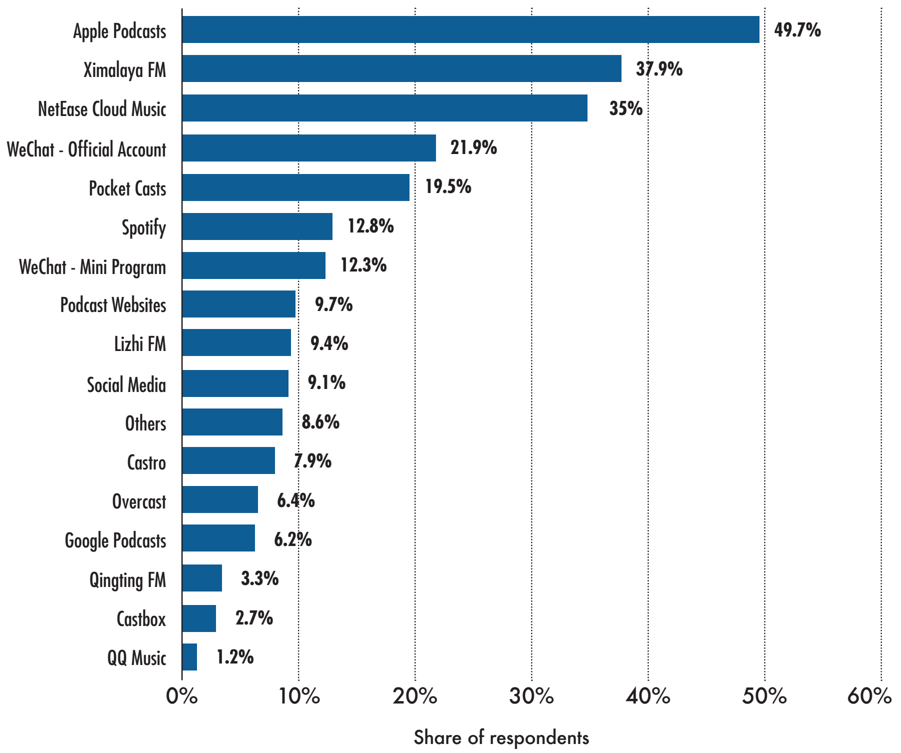
Commercial successes and mainstream appeal also attract regulatory scrutiny. In the early days, podcast content was given more leeway than other forms of media but in recent years, thanks to an increase in popularity, things are changing.

"When it wasn't a mainstream medium in China, it enjoyed the freedom of not being heavily censored," says Caiwei Chen. "I think there is a level of content that is still acceptable that wouldn't be ok in another format but I wouldn't say the medium of podcasting is as easy as it was before, and I think that shift happened in late 2020, early 2021."

"For the content I posted on my Ximalaya channel, I ran into a constant wall of censorship with the transcripts that accompanied the audio," says Laszlo Montgomery, whose podcasts are generally aimed at an international audience but he has experience using Chinese platforms. "Too many seemingly innocuous words were rejected, and after a while I gave up on Ximalaya." He points out that this only affected the written transcripts and not the audio recordings.

POPULAR PLATFORMS

Ximalaya is the most popular of the domestic podcast platforms



Source: Statista

A lot of the popular Chinese podcast platforms remain independent but they're obviously still bound by the regulatory standards that are pervasive across Chinese media. "Like any type of media in China, Chinese podcasts have to practice self-regulation in terms of censoring politically sensitive topics or vulgar content, and of course they are being monitored consistently as well," says Man-Chung Cheung. "As the industry grows bigger, I expect there will be more regulations."

Here to stay

The recent surge in listeners and the entry of new audio platforms in the Chinese market, suggest that podcasting is gearing up for faster growth in the years ahead.

"Podcasting in China is still niche in terms of penetration among the country's population, but it is growing fast and receiving more attention," says Cheung. "As more investment enters the industry, it will become more mainstream. I think the podcast industry in China will keep growing in sophistication going forward in terms of developing its brands, persona of the hosts and production."

However, market penetration is still low and competition remains fierce. Rio Zhan believes podcasts have some inherent weaknesses, especially in the fight against short videos, with much less chance to grab the sought-after advertising dollars. But with the major Chinese tech companies such as Tencent, NetEase and Kuaishou entering the podcast market, podcasting is likely to turn more professional in the years ahead.

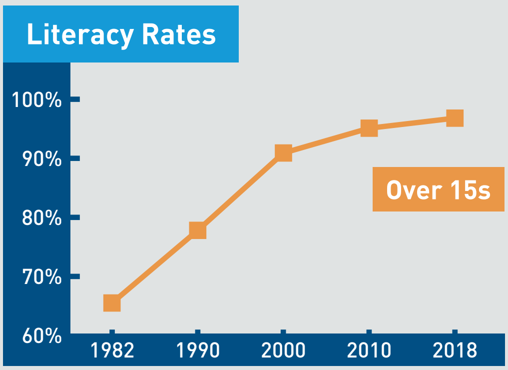
"I don't know what the future is going to be for people like me who don't belong to a big network. I think the independents might over time get squeezed out, and those that are good will probably get swallowed up into a network and become part of that," says Montgomery.

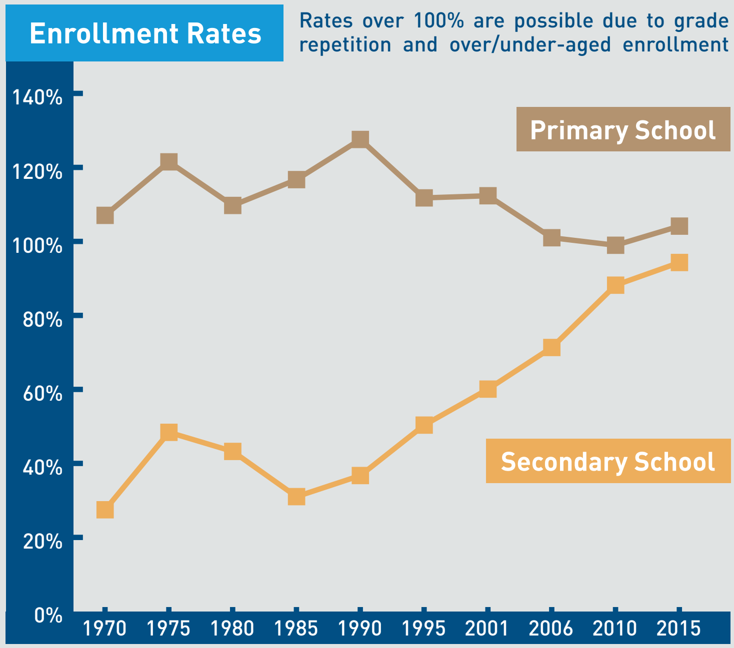
"I think podcasting is here to stay, it's just going to continue to develop," he adds. "And I believe it's going to replace radio within the next one or two decades."

Educating China

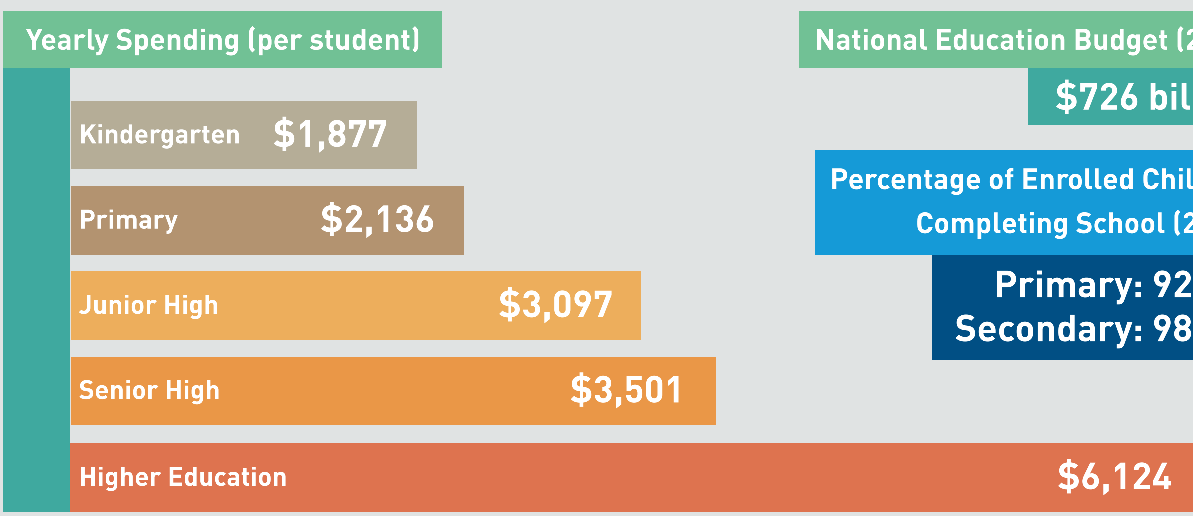
China is well-known for its demanding education system and the high expectations it places on its children, but despite the country's history of a strong work ethic, the demands are higher than ever before.

It was only in the mid-1990s that secondary school enrollment rates crossed the halfway mark, and literacy rates at the start of that decade were below 80%.





The country now spends almost three-quarters of a trillion dollars every year on education, which has resulted in its students having some of the highest capability levels in the world when it comes to reading, maths and science.



National Education Budget (2019)

$726 billion

Percentage of Enrolled Children Completing School (2015)

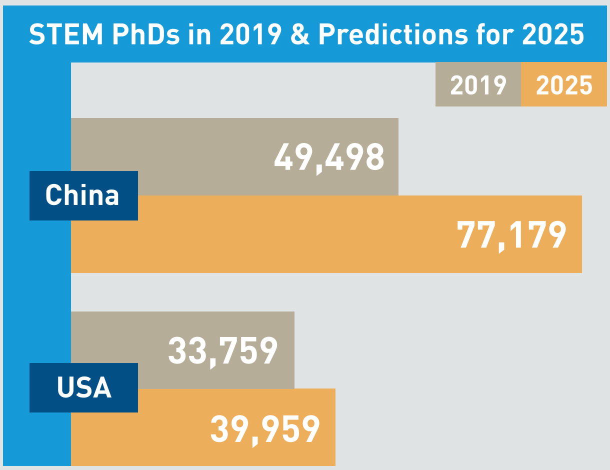
Primary: 92.5%
Secondary: 98.6%

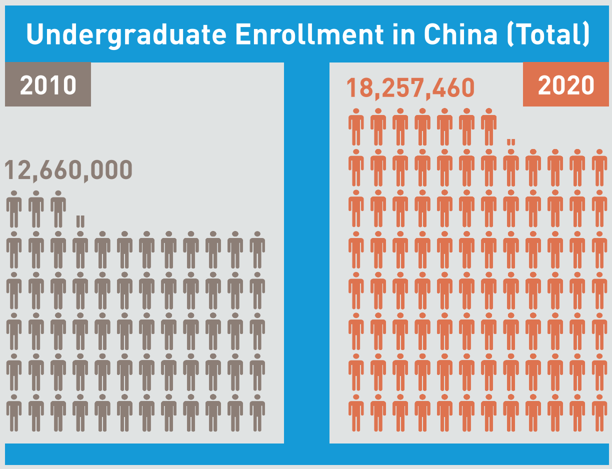
Sources: UNESCO, China Ministry of Education

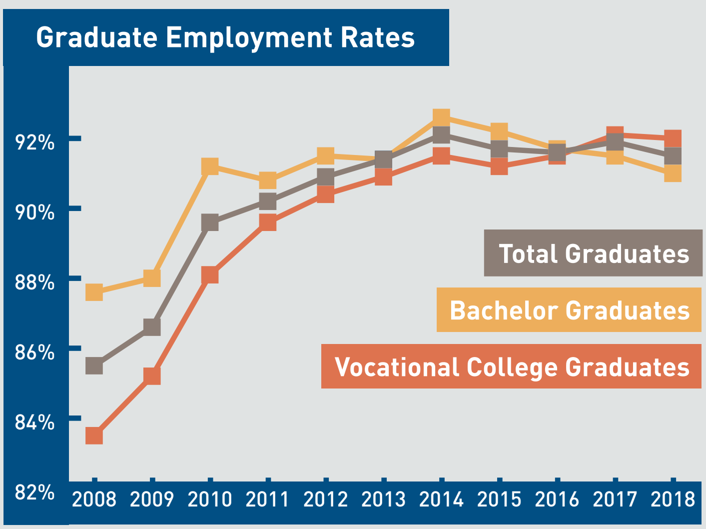
Capability Levels	Reading	Maths	Science
China	555	591	590
Singapore	549	569	551
USA	505	478	502
UK	504	502	505

According to the OECD's Program for International Student Assessment, Chinese students have the highest capability levels across the board in reading, maths and science. A score of 500 is deemed 'average ability'.

Enrollment numbers for undergraduate courses increased by almost 6 million between 2010 and 2020. At the same time, China is already producing more STEM PhDs each year than the US, with the gap predicted to almost double by 2025.







There has also been an increase in vocational study for Chinese youth. One cause of this has been a rise in unemployment in Chinese university graduates when compared to those graduating from vocational courses over the last decade. The government has pushed for a shift away from the traditional university path, resulting in more higher education institutions than universities in China in 2019.

Sources: UNESCO, Forbes, China Ministry of Education data CHINA data

The stats you need to know

Macro

Civil Service

The number of people registered to sit China's civil service exam passed the **2 million** point for the first time in December. With **2.12 million** people taking the exam, applicants have just a **one-in-68** chance of landing a civil service job.

Source: *South China Morning Post*

R&D Record

China's research and development expenditure reached a record **RMB 2.79 trillion** in 2021, a **14%** increase on 2020. The R&D spending growth rate in 2021 was more than **40%** higher than in the previous year.

Source: *China National Bureau of Statistics*

Population Peak

The number of births across China fell **20%** year-on-year to about **10 million** in 2021, leading some experts to predict that China's population has peaked. The country's rapidly aging population and low birth rate give credence to the claims.

Source: *South China Morning Post*

Business

Lithium Liftoff

Spot prices of battery-grade lithium carbonate passed the **RMB 200,000** per ton mark in November, up nearly **360%** year-on-year. The previous record of **RMB 160,000** per ton was set in 2017.

Source: *Caixin*

Peak Unicorn

Chinese tech giant ByteDance, whose flagship app TikTok has **1 billion** monthly active users globally and is viewed as a serious challenger to Facebook, saw its valuation surge nearly **30%** to **$350 billion** in December 2021, making it the world's most valuable unicorn.

Source: *South China Morning Post*

Property Woes

Moody's, Fitch and S&P downgraded Chinese developers' ratings a record **43**, **54** and **30** times, respectively, in 2021, compared with **six**, **12** and **11** in 2020, adding further pressure on their ability to refinance offshore debt during a housing slowdown.

Source: *Financial Times*

Going Mobile

China Mobile, the world's largest mobile network provider by subscriber numbers, is looking to raise up to RMB **56 billion ($8.8 billion)** on the Shanghai bourse in what may be China's largest public offering of the last **10 years**, after delisting from the New York Stock Exchange.

Source: Reuters

Technology

EV Expansion

China's top **three** EV makers, Xpeng, Li Auto and NIO, all experienced bumper sales in December 2021 marking a strong end to a good year for each of the companies. NIO, in particular, marked another month of over **10,000** deliveries.

Source: *South China Morning Post*

Renewables Rising

Annual cumulative renewable energy production in China has broken the **1 trillion kilowatt-hours** barrier for the first time, leaping by **a third** year-on-year as the nation tries to meet its 2030 carbon goals

Source: *Caixin*

Digital Diaspora

The number of apps available to Chinese tech users has fallen by **38.5%** over the last three years, with the biggest drop coming in 2021. The total number of apps in Chinese app stores fell to just **2.78 million** by October, down from **4.52 million** at the end of 2018. The drop stems from a maturing of the Chinese app market and changes in the regulatory environment.

Source: *Ministry of Industry and Information Technology*

Automation Progress

In the most recent Five-Year Plan, Chinese government agencies, including the Ministry of Industry and Information Technology, made it clear that China aims to achieve a minimum annual growth of **20%** in robotics sales over the next **five years**.

Source: *Xinhua*

Consumer

Tax Evasion

Viya, China's "queen of livestreaming" has been hit with a **RMB 1.34 billion ($210.16 million)** fine for tax evasion. The penalty, meted out by a Hangzhou court, was due to hiding personal income and other offences in 2019 and 2020.

Source: *Reuters*

Spending Stimulus

Chinese cities are giving out **tens of millions** of yuan worth of vouchers to boost consumer spending dampened by weak economic growth and stringent COVID-19 containment measures. The city of Hefei in the eastern province of Anhui is set to distribute **RMB 40 million ($6.3 million)**.

Source: *South China Morning Post*

Xinhua NFTs

Chinese state-run news outlet, Xinhua, which is the largest media organization in China, issued the nation's first "news digital collectibles" backed by non-fungible tokens (NFTs). A total of **110,001** copies of selected news photos were released for free.

Source: *Xinhua*

BOOKSHELF

Views on Business

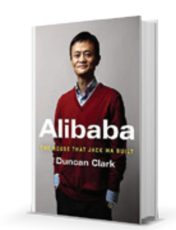
Edith Terry, author and China business veteran, recommends books to help better understand China and business, particularly from a Chinese perspective

Edith Terry has had a long history of doing business in China having been among the first American businesspeople based in Beijing in the 1980s and authoring *The Executive Guide to China* in 1984, one of the first guides to doing business with China. She has also held the role of Opinion Editor for the *South China Morning Post*. As an advisor on corporate governance and communications—she is now director of Cotton Tree Advisors, a consultancy on East Asian business and public affairs—Edith has worked with some of China's largest and most innovative companies in the United States and Hong Kong, including Ping An, China Merchants Bank, Jinko Solar, and many others.

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

Out of the Gobi: My Story of China and America by Weijian Shan is a gripping, highly readable memoir by one of China's most respected international financiers, who was "sent down" as a teenager to 'learn from peasants and workers' in one of the many twists and turns of the Great Proletarian Revolution. Chairman and CEO of PAG, a private equity firm, Shan reminds us of the incredible range of experience of Chinese of his generation. Aged 67, he lives in Hong Kong and is an ardent runner as well as author and op-ed writer.

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

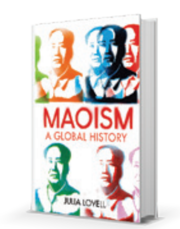


Most books about doing business in China are written from non-Chinese perspectives but it is important to understand how Chinese view the great new global market playground they are creating. Of the few books in English in this category, one that comes to mind is Duncan Clark's *Alibaba: The House that Jack Ma Built*. Jack Ma's story, however he may be seen at the moment, is one of the great rags-to-riches trajectories of all time. How this jaunty former English teacher was able to build the e-commerce giant, Alibaba, mirrors the energy, ambition, and sheer chutzpah of a generation of private entrepreneurs.

What are you reading currently?

I am currently reading Ezra F. Vogel's massive *Deng Xiaoping and the Transformation of China*. The renowned Harvard sociologist's 876-page tome serves as a blow-by-blow description of the inner workings of the Communist Party, the debates, the swirling politics, and senior Party members who shaped the most dramatic, market-based reforms of any socialist economy in history, while keeping the politics of China under wraps. This is essential reading for anyone who wants to get beyond the superficial, good-versus-evil tropes of many of the current discussions on China's rise.

What book totally changed your perspective on a certain topic?



Julia Lovell's *Maoism: A Global History* is, surprisingly, one of the first books to look at the global legacy of the peasant- and worker-led version of Marxism-Leninism crafted by China's revolutionary leader, Mao Zedong. In particular as China under the leadership of General Party Secretary Xi Jinping has just released a "third historical resolution," it is important to understand the "Mao-ish" culture that is being promoted under the banner of common prosperity.

Which China book do you think is the most underappreciated?

Harold R. Isaacs' *Scratches on Our Minds: American Views of China and India* keeps coming back as one of the deepest books about the multiple windows through which Americans view Chinese and Indians, nearly always through the lens of preconceptions that reflect more about the viewer than the viewed. Understanding such biases, and how they play into business, politics and international relations, is key as much as it was more than 60 years ago, when the book was first published.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