CKGSB KNOWLEDGE

CHEUNG KONG GRADUATE SCHOOL OF BUSINESS

Volume No. 52

DECEMBER 2024

THINKING AHEAD

Chinese leadership clearly has an economic blueprint in mind for the country's future, but there are headwinds

- China's Local Government Financing Vehicles are facing mounting debts
- The video game industry in China is going from strength to strength
- China is facing implementation issues with its new data laws

Table of Contents

Issue: December 2024
Vol. No. 52

Editor-in-Chief
Li Wei

Managing Editor
Patrick Body

Executive Editors
Amy Huang
Cathy Chen
Ralf Qiao

Design
Jason Wong

Cover
Jamie Stevenson

Produced By
SinoMedia

ISSN 2312-9905
Publisher
CKGSB GLOBAL LIMITED
Suite 3203, 32/F, Champion Tower,
3 Garden Road,
Central, Hong Kong

For Letters to the Editor or reprint requests, please contact:
ckgsb.knowledge@ckgsb.edu.cn

Making Plans

China's economy is currently in a tricky position, and while it has its bright spots in areas such as EVs and green energy, there are a number of key issues that need to be dealt with to shore up continued future growth. Local government financing, the real estate sector and the stock markets are all under scrutiny from investors and businesspeople both domestically and internationally.

At times like these, what is needed is a plan. China's leadership appear to have an economic blueprint in mind for the country's future, one which relies on what they have called 'new productive forces.' These forces are characterized by future-facing technologies that China hopes will form the basis of years of continued growth, alongside increased consumer spending. But while there appears to be an end goal, there is still a lack of clarity on how the country is to make it there. We discuss the topic in more detail in our cover article "**The Big Plan**" on page 9.

One of the main issues that requires a solution in order to better stabilize China's economy is the role of Local Government Financing Vehicles (LGFVs). They were first established in the early 1990s as middlemen to borrow on the behalf of local governments. They took on trillions of dollars in off-the-books debt to pay for the construction of public projects. But once a motor of growth, many are now straining under unsustainable debt and struggling to repay, as land prices remain in the doldrums and China's economy slows. Find out more in "**A Bridge Too Far**" on page 17.

But it is not all doom and gloom, especially in the country's video game industry, which is going from strength to strength, despite a turbulent regulatory history. In recent months, the China-produced *Black Myth: Wukong* has set sales and player records around the world. Drawing on the country's rich cultural history, it has both proven that there is a demand out there for quality games that come from China, and that China has the ability to produce them. Pick up a controller and find out more in "**Game On**" on page 28.

We are also delighted to introduce a new series of articles and interviews developed by the AI+Web3 Research Center of CKGSB, alongside a number of industry experts. The first in the series is a discussion between Dean's Distinghuished Chair Professor of Marketing at CKGSB, Sun Baohong, and Larry Zhou, Fellow and Chief Network Architect at AT&T (page 24). Elsewhere in the issue, we discuss the Bamboo Ceiling and Asian American's struggles to reach the top of the corporate ladder (page 33), China's growing Educational Technology sector (page 61) and have a conversation with Kellen Xie, Senior Vice President of eVTOL aircraft manufacturer Autoflight, about China's burgeoning low-altitude economy (page 37).

Our hope is that you find these insights and reflections on the changing nature of Chinese businesses and the country's economy useful. If you have any comments or opinions to contribute, please feel free to contact us at (ckgsb.knowledge@ckgsb.edu.cn).

Yours Sincerely,

Patrick Body
Managing Editor, *CKGSB Knowledge*

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

Sign up for the CKGSB newsletter here:

DATA TRANSFER

China's data laws are similar to those elsewhere in the world, but implementation and transparency issues are causing some confusion

By Patrick Body

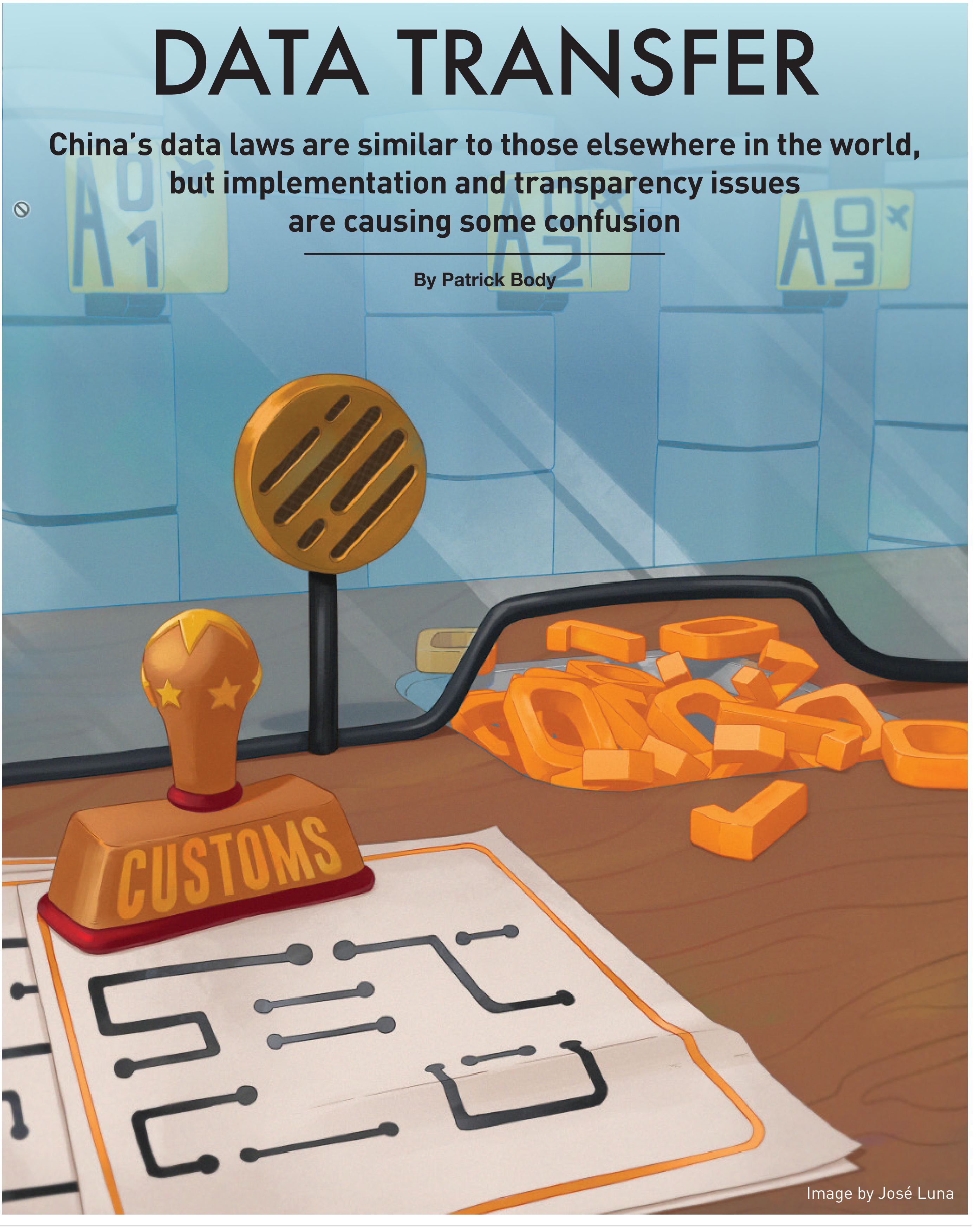


Image by José Luna

Many companies are having difficulties traversing the data categorization process within China's data laws

Data is a critical part of the global economy, but businesses in China are wondering how to navigate the increasingly complicated regulatory environment in the country, following news that only a small portion of cross-border transfer applications are being approved.

China's stringent data laws, which have been progressively introduced over the last seven years, are similar to those implemented in other countries, but there are concerns over implementation, interpretation and transparency, presenting challenges for multinational corporations (MNCs) and Chinese firms with global ambitions.

"Everyone operating in China is impacted to some degree," says Tom Nunlist, Associate Director at China-focused research and consulting firm, Trivium. "It's a large legal framework and companies are having to deal with the requirements in different ways and for different reasons. But for many, especially larger, companies there is still confusion around what exactly is required of them."

By the book

In 2023, according to a People's Daily estimate, the digital economy's contribution to China's overall GDP reached 42.8%, and it is therefore no surprise that the country's leadership has increased its focus on regulating data. Under the perview of the Cyberspace Administration of China (CAC), China's data laws are underpinned by three main legislative pillars: the 2017 Cybersecurity Law (CSL), the Data Security Law (DSL) and the Personal Information Protection Law (PIPL), both introduced in 2021.

The CSL regulates the use, storage and cross-border transfer by companies of personal data along with other data management practices. The DSL aims to protect the security of processed data, doing so through classifying data by level of importance in terms of national security. The underlying principle of the PIPL is the need for user consent.

China's data laws are perceived as being extremely stringent, but while they do pose challenges for businesses, the fundamental building blocks align with the European General Data Protection Regulation (GDPR). "If a company is GDPR compliant then they have already done about 80% of the work in meeting China's requirements," says Alex Roberts, Partner and Head of China TMT at Linklaters. "There are particular aspects that differ in China, such as requirements for separate consent, but the GDPR is very much the underlying model."

The Chinese legislation puts greater emphasis on the need for data to be stored locally (data localization), data classification and particularly stringent regulation of cross-border data transfers, contrasting with the GDPR's more flexible approach to international data flows.

While some US states have enacted similar legislation, the federal government has yet to codify laws that act in a similar way to the Chinese and EU rules. "The US is a bit of an outlier and it's actually a case of them having to catch up with the other two," says Roberts. "Some drafts have come through, but nothing has been finalized."

Red tape

As with many aspects of Chinese legislation, there are concerns over a lack of clarity in some of its requirements. What constitutes personal data, for example, is quite easy to understand. However, the DSL splits data into 'national core data,' 'important data' and 'ordinary data.' 'National core data' is defined as data related to national security, economic interests, Chinese citizens' welfare or the public interest, and is seen as the most sensitive data type. 'Important data' is seen as the second most sensitive data type but what exactly falls into this category is unclear.

"What is considered important or sensitive data can be hard to work out and might fall anywhere on a spectrum," says Nunlist. "There are cases where it is clear that you don't have it and somewhere it is definitely sensitive, but there are any number of companies in between where it is unclear."

While some personal and sensitive data must be stored domestically, data export is possible, but the requirements to do so vary depending on the type and quantity of data held. Exporting data over certain quantitative thresholds requires a security review by the CAC or affiliate, but queues for approval can be long.

In March 2024, the CAC clarified rules on the process of classifying important data, requiring companies to begin by creating a descriptive inventory of their data and identifying whether or not they think they have important data. If it is deemed to be so, and the company wishes to export the data, it will have to go through data export security assessments, which again can be challenging and take a large amount of time.

Another option for larger MNCs looking to transfer personal data internally is to gain an export certificate. The third option is for companies seeking to transfer data under a certain quantitative threshold is to conclude a standard contract that has been drawn up by the CAC.

"A key part of the contract is that it stipulates that Chinese law applies to the agreement," says Rogier Creemers, assistant professor in the Law and Governance of China at Leiden University, and co-founder of DigiChina, an initiative with Stanford University. "It sounds like a simple solution, but it has led to cases of organizations in the West receiving a contract to sign from a Chinese firm and having no idea what to do with it and an unwillingness to put in quite a large amount of effort and agree to the terms. There have been some exceptions added for some companies, such as Air China, to export passenger details without the contract."

According to Nunlist, there is a perception among many law firms that companies don't need to be proactive in their applications, but the March update clarified that although a company can keep operating until the identification process is complete, it is responsible for initiating the process. "But that also leads to an area of uncertainty," he adds. "The government is telling companies that they need to take steps, but it is not clear how quickly or what would count as dragging your feet."

There are a number of local or regional regulatory bodies responsible for conducting the data categorization process, including local governments or specialized centers in some of China's special data pilot zones located in the country's free trade zones (FTZs). This can make operating across jurisdictions increasingly complex, particularly if different definitions are adopted.

"The lack of enforcement uniformity and stability makes it difficult for international companies to understand what is required of them," says Cai Peng, Partner at Zhong Lun LLP. "It has led to companies incurring large costs through engaging specialists."

The lack of clarity can also lead to officials either denying or sitting on applications for fear of approving something that could later turn out to be important data.

Toeing the line

International firms operating in Western markets, and particularly within the realm of the GDPR, have had significant experience in dealing with regulatory requirements, but for Chinese firms there has been a steep learning curve. For those looking to expand operations internationally, there have also been some benefits.

"Due to the lack of enforcement pressure, Chinese companies that are now following the PIPL requirements may find it easier to comply with international legislation such as the GDPR, as there can be more flexibility within those rules, especially for smaller businesses," says Peng. "For larger firms, taking into account national security considerations, especially in sensitive sectors like tech and the pharmaceutical industry, there can be a bit more of a difficulty."

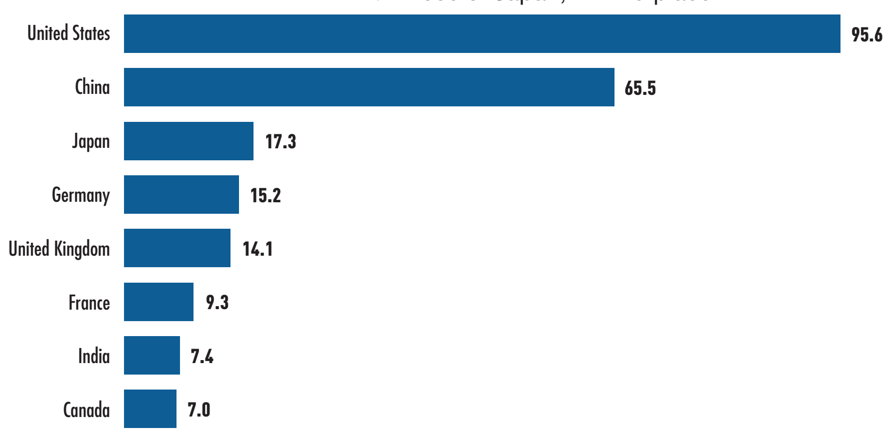
The responses of international businesses to the changing data laws have been varied. From greater localization of staff and data centers or choosing to diversify away from China somewhat, the reactions are mostly dependent on the category of data a company holds, and for many businesses, this remains unclear.

Where the impact of the data laws is clear is on multinational businesses with revenue centers in China, and some level of 'important data.' For example, businesses such as manufacturing or pharmaceuticals require the free flow of data between R&D centers around the world, and although for such companies there is a value to having a presence in China, it could also create a distinct drawback if communications are not smooth.

"Companies are required to undertake substantial work on lots of aspects of localization and data security," says Peng. "This requires a deeper understanding of

DATA DOMINATION

The US and China dominate the global data center market, with Chinese revenues triple those of Japan, in third place



Source: Statista Market Insights

China law and that has increased operational costs and the need for professional support. Transparency is an issue and this has necessitated forming stronger ties with local partners and companies that are more tailored to the China market."

The representative of an MNC who wished to remain anonymous, discussed how the situation has impacted on the company's cybersecurity operations. "We work worldwide and that means we have cybersecurity staff monitoring our systems throughout every timezone," they said. "It's partly good practice but also a good cost-saving exercise as it means we don't need people on call at all times. But you can't do that in China. We have to have a separate team here and also can't do live sharing of data with the rest of our global operations. This both increases our costs and our ability to operate seamlessly."

Reactions from other MNCs have been mixed. Microsoft has been gradually pulling some of its operations out of China in recent years, as well as creating China-only alternatives. LinkedIn sunset its localized Chinese version in late 2021, with Microsoft launching InJobs in Chinese app stores as an alternative, although it has yet to see any real success. Microsoft also closed all of its physical stores in China in July.

Yahoo exited the China market around the same time as Linkedin, citing an "increasingly challenging business and legal environment." In August, IBM announced that it is shuttering the majority of its research and development work in China, at the cost of 1,000 jobs.

German automaker Volkswagen has chosen a different route and committed more resources to staying in the China market, creating supply relationships for software including semiconductors with companies such as Horizon Robotics for their China production. In mid-2023, it also invested $1.1 billion in a new development and procurement center for EVs in Hefei, and early this year committed a further $2.68 billion to expanding these operations, increasingly isolating its technological development in the country.

Apple has made a similar commitment to the market, striking a deal with Chinese regulators to store Chinese user data in domestic servers located in the southwestern province of Guizhou. US-based EV manufacturer Tesla has also expanded their deal with Chinese internet giant Baidu to gain access to its mapping license for data collection on China's public roads, which should boost the company's chances of deploying full self-driving technologies in China.

"From a Chinese point of view, the types of deal between Baidu and Tesla can also be a boon to local employment by creating jobs in the local tech and security space," says Creemers.

Some businesses have also run afoul of the new regulations. One such example was a raid on the Beijing office of and a subsequent $1.5 million fine for US corporate investigations firm Mintz Group, for doing "unapproved statistical work." The issues at the heart of the incident have not been made fully clear, but they are known to be data-related.

To mitigate risks and ensure compliance, it seems clear that companies need to invest in localized data centers and develop robust data governance frameworks that align with Chinese regulations. Particularly affected MNCs also have to consider how they push back against the lack of transparency and clarity in the laws. Many of these companies would usually be outspoken with their criticisms in Western markets, but due to the nature of the Chinese system, a more measured and constructive approach is required.

The response for now has largely been focused on clarification and improving cross-border data legislation. "Companies facing difficulties with identifying their data will continue to push to improve the rules," says Nunlist. "They are mildly optimistic that they might get what they want, but it will most likely be on a granular or case-by-case basis."

Making amendments

There are areas for optimism in China's data legislation development. Further updates to data classification rules are expected soon, but specific timelines are unclear.

"The interaction between China data laws and international laws will continue to be a key area of development and negotiation," says Roberts. "While the pace of international cooperation remains uncertain, it is absolutely the sort of harmony that businesses are looking for."

But there are also concerns over China's desire to pursue a better balance of development and national security, which, despite an increasing number of mentions in official statements in recent years, wasn't emphasized at the recent Third Plenum.

"Broadly speaking, we've seen the state remember that development is the purpose, and the CAC has been quite explicit in their support for a better balance," says Nunlist. "But it would have been nice to see more from the Third Plenum in this regard."

Letter of the law

China's data rules are not entirely without precedent, as can be seen in the GDPR, and there appears to be positive momentum towards improving the way the system works. However there remains a lack of transparency and clarity on implementation requirements, which makes life difficult for companies, both domestic and international. Data is the commodity of the future and companies naturally don't wish to feel that their data is at risk.

"China is expected to further refine and expand the data regulatory framework to keep pace with rapid technological advancement, and more detailed regulations are likely to be introduced to deal with the sustainable use of big data and deployment of emergent technologies like AI," says Roberts. "But the hope is that we can get clear guidelines and explanations on cross-border data flows and enhanced compliance measures, and shift towards a more adaptable approach for easier business compliance."

But what is unlikely to change is China's desire to ring-fence the data that is generated within its borders. "China is clearly positioning itself to present an alternative regulatory regime to how data can be managed," says Nunlist.

Chinese leadership clearly has an economic blueprint for the country's future, but there are headwinds

By Shi Weijun

Image by Jamie Stevenson

China's plans for future growth revolve around future-facing 'new productive forces'

Three is said to be a magic number, but for good measure the Chinese government is putting its faith in 300—the number of reforms it wants to carry out over the next five years. Outlined after a major conclave of the Communist Party's Central Committee in mid-July known as the Third Plenum, the reforms cover everything from the economy and national security, to culture and social issues.

China's new vision of economic reform clarifies Beijing's strategy for economic growth and a more substantial position in the world, but it involves some significant issues, including putting it at odds with the Western world and potentially limiting economic growth in favor of national security and control.

The reform plan comes at a crucial juncture for the economy, which is battling structural imbalances, brittle confidence and heightened geopolitical tensions. Questions continue to swirl around specifics, implementation and the implications for China's economy, foreign policy, society and R&D.

"When I hear the word reform, what does that actually mean?" asks Philippe Le Corre, a senior fellow at the Asia Society Policy Institute's Center for China Analysis and author of *China's Offensive in Europe*. "I lived through the years of China's open-door policy in the 1980s, the 1990s and even the first decade of the 21st century: people in China were enthusiastic and much more entrepreneurial than they are now. There is a feeling that business is not as positive as it was."

Control versus growth

The overarching theme of the Third Plenum included an emphasis on so-called "high-quality economic development," led by investment in innovative industries and consumption. The meeting also called for strengthening the resilience and security of industrial supply chains in light of rising geopolitical tensions, re-emphasizing the importance of the private sector, improvements to the pension system, strengthening the efficiency of the SOE system and measures to boost domestic consumption.

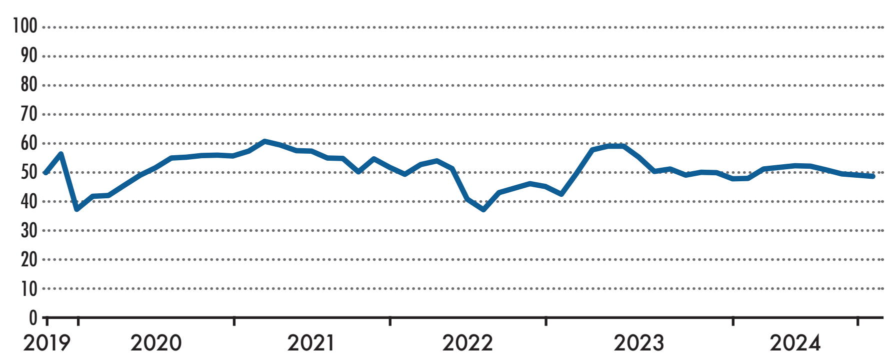
Key to creating fresh growth will be the digital economy, and there are ambitions to scale it up. A three-year action plan was released in April to nurture and attract digital talent and workers, and another roadmap in August to promote low-carbon development of digital industries.

Cultivating 'new quality productive forces' sits at the heart of China's pursuit of a more resilient, forward-looking economic structure amid growing uncertainties. The concept is often taken to mean high-tech manufacturing, green energy industries and cutting-edge technologies that will eventually be mission-critical for a future economy.

The strategy marks a shift in China's long-standing industry policy, as it aims to transform the country into a disrupter through technological breakthroughs and

CKGSB BCI

Business confidence in the future of China's economy has spent more time under the 50 threshold than above it over the last two years



Source: CKGSB

leadership of strategic industries such as clean energy and electrified transport.

"New quality productive forces are about advanced productivity freed from the traditional economic growth mode and productivity development paths," says Bruce Pang, chief economist and head of research for JLL in Greater China. "They represent the innovation that traverses beyond traditional limits. Aside from emphasizing the use of cutting-edge technology to reshape industry ecosystems, they also aim to take advantage of China's role as a global leader in manufacturing and export, showing the country's ambitions to ascend the global value ladder."

The emphasis on advanced manufacturing that embraces digitalization and resilience would appear to bear many of the same hallmarks as 'supply-side reform.' While there is some alignment, Rory Green, chief China economist for GlobalData TS Lombard, argues that new quality productive forces are not a simple rebranding of supply-side reform. "There's more in terms of pushing for new ways of manufacturing," he says. "The just-in-time models pioneered by Japan are fading out, and we're seeing a new automated, IT-led production model with a highly mobile workforce that's able to produce high turnover."

Industry baby

China's tilt toward an innovation-driven economy comes against a backdrop of a worsening macroeconomic outlook. The country faces issues with a property market collapse; stock and bond market drops growing local government debt; challenges over trade issues; weak investor confidence; and sluggish consumer demand.

Consumer reluctance to spend remains the foremost constraint on near-term growth. A survey by the People's Bank of China (PBOC) in Q2 found that 61.5% of city dwellers wanted to increase the amount in their savings accounts, while only one-quarter wanted to consume more.

China's recent economic wobbles have raised questions about whether the soft demand is cyclical or whether the problems run deeper. China is transitioning from an "easy to heat, difficult to cool" economy to an "easy to cool, difficult to heat" one, said Huang Yiping, an influential economist and member of the PBOC's monetary policy committee, in May.

Powering the future: One of China's economic bright spots is new energy

There have been calls for Chinese policymakers to change tack in their strategy of focusing on investment and neglecting consumption, with policy ideas ranging from setting a compulsory target for inflation to stepping up spending to address weak consumption. But at the same time, providing higher income for the consumption economy leads to higher labor costs which could impact competitiveness on a global scale.

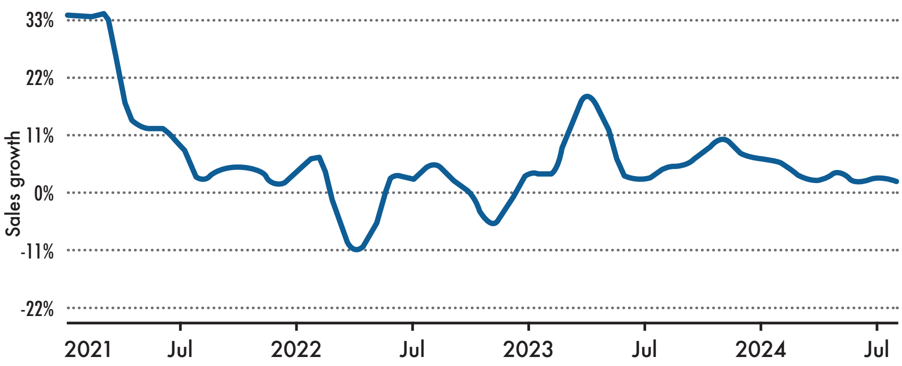
Beijing's bet on new quality productive forces also carries some risks. While Chinese R&D into technologies such as batteries and renewable energy has helped it claim leadership in these industries, significant investment in other critical technologies such as semiconductors has been less successful.

Confidence is also down across the board. Consumers, investors and private companies are all reining in spending to some degree. The pessimism has been reflected in CKGSB's Business Conditions Index, a gauge of business sentiment that fell to a year-to-date low of 48.8 in July—the second month in a row it fell under the confidence threshold of 50. Brittle confidence has not been helped by a malaise in youth unemployment, with 17.1% of the roughly 100 million Chinese aged 16-24 out of work in July, a jump of around 4% over the previous month.

The gloom is most visible in real estate, a sector that remains in dire straits more than three years after Evergrande lurched into crisis. The unprecedented property recession has dragged on the economy, and left an estimated 20 million homes unfinished and up to 60 million unsold. While Beijing rejected a ¥6.93 trillion ($977 billion) housing rescue plan pitched by the International Monetary Fund, it did reiterate at the third plenum that there should be a focus on ensuring ample supply

RETAIL RUNDOWN

China's retail sales growth has been slowing, particularly during the first half of 2024



Source: tradingeconomics.com

of affordable housing and rental housing, compared with the previous emphasis on commercial real estate.

But there was nothing on how this would be achieved, nor what efforts would be made to address the current property market decline. Instead, Beijing's policymaking to stem the property decline has been a series of experimental and incremental steps. In May, the PBOC said it would provide ¥300 billion in cheap loans to help local state-owned enterprises (SOEs) buy unsold homes to turn into affordable housing, which has not yet yielded much success.

China's new economic approach will also need to confront the epochal demographic challenges of a shrinking and aging population, as well as a declining birth rate, which have helped reduce the working-age population of 16 to 59 year-olds by more than 60 million from its peak in 2011 to 875.56 million in 2022.

Inside out

Even as Beijing touts new quality productive forces as the future of China's economy, it will need to contend with a West already wary of China-made products in fast-growing industries. Chinese dominance in future-facing industries has put it in the crosshairs of other governments. For example, Canada has followed the US and EU in imposing high tariffs on imports of Chinese electric vehicles (EVs).

Neither is the skepticism over Beijing's intentions confined to Western governments. Countries that once saw China as a customer now see a competitor. "The decade-long support from the Chinese economic boom has disappeared," Mexican Finance Minister Rogelio Ramírez de la O complained in July. "China sells to us but doesn't buy from us and that's not reciprocal trade."

The mistrust partly boils down to China's more assertive foreign policy in recent years, according to Le Corre. "Since 2020, China's foreign policy is unfortunately not seen positively in the West," he says. "For example, all the benefits of the Belt and Road Initiative have faded away in Europe. The situation may be different in developing countries, but how many governments have actually thrown their full support behind China's global rise?"

> Foreign investors will need to treat China like any other opaque country with a big market, such as Brazil or Indonesia: do it, but with caution
>
> Anne Stevenson-Yang
> Founder and Research Director
> J Capital Research

Leading the pack

Despite the headwinds, China's economy is still, according to official projections, expected to expand by a level almost any other major country would envy. There are reasons for cheer, such as the staggering progress China has made in technologies deemed mission-critical for economic development going forward.

Green energy is one example. China already controls 80% of the global solar market, occupies 60% of the market for wind turbines, and produces three-quarters of all lithium-ion batteries. And with China's installed solar and wind capacity on track to reach 1,200 GW by 2025 — five years ahead of schedule — the country will continue to be a clean energy superpower with a manufacturing base that underpins renewables rollout in the rest of the world. The country also already dominates the production of green hydrogen, a non-polluting fuel made using renewable energy sources that are seen as key to cutting emissions in smokestack sectors such as steel, cement and petrochemicals.

China's new energy vehicle (NEV) industry, meanwhile, is set to contribute as much as 4.5-5% of GDP by the end of this decade, reflecting its massive growth potential as consumers increasingly opt for EVs, according to Moody's Investors Service.

Other bright points that will help China overcome its issues include digitalization and artificial intelligence (AI) deployment. Greater AI implementation in industries ranging from automotive, transportation and logistics, to manufacturing, enterprise software, healthcare and life sciences could create $600 billion of new economic value annually in China, according to McKinsey.

Measuring the Middle Kingdom

As China endeavors to recalibrate its economy toward sectors with high productivity, gauging the success of the strategy will require close analysis of not only GDP growth but also confidence and overall policy direction.

Top of mind for policymakers will be scaling up technological innovation and new quality productive forces, followed by maintaining GDP growth at 4-5%, with the overall goal of structuring the economy without too much disruption. But consumption will also be a key metric to observe.

"I think I would be more focused than Beijing on the consumption side—if I saw the savings rate trending down, and the share of consumption trending back up, that would certainly imply confidence and employment," says Green. "To me, that would be the most encouraging sign."

China's centralized, state-led approach will also need to be monitored to ensure Beijing lives up to its word of ensuring a level playing field for private and foreign enterprises. "The plenum's statement makes a unique reference to the central role of the party-state in running the economy," says Le Corre. "Unlike in the 1990s, the state sector is growing, not reducing. National security is over-emphasized which is not a good signal to foreign investors—many have become static as best, waiting for better news."

"Foreign investors will need to treat China like any other big, opaque country with a big market, such as Brazil or Indonesia: do it, but with caution," says Anne Stevenson-Yang, founder and research director of J Capital Research.

Opaque outcomes

China is clearly playing a long game with its economic pivot, building on strategic policies announced in the past few years. But while Beijing's goals are clear, the specifics of achieving the ambitions remain murky and will likely remain so for the foreseeable future.

The nature of the Chinese system makes it difficult to predict the efficacy of the plans, their consequences and how exactly they will play out in the wider international context. Still, what is clear is that China's leadership is aiming for something specific, and that is likely a political, rather than a business goal.

"Given that the final communiqué from the Third Plenum focuses on ideology as opposed to the economy—despite various structural problems and cyclical downturns, it is evidence of the fact that politics is what drives the Communist Party's leadership," says Le Corre.

"China has to do what it thinks best," says Anne Stevenson-Yang. "Back in the 1990s and early 2000s, what was thought best was a big party for foreign investors. The party is over now, and good luck to them."

Digital Directives

China's plan to enhance the integration of digital technologies in business practices across the country by 2026

• **Innovation:**
◊ Leverage advanced information technologies to drive innovation in business models, products and services

• **International Cooperation:**
◊ Expand channels and platforms for digital commerce
◊ Promote Silk Road e-commerce and join the Digital Economy Partnership Agreement (DEPA)

• **Foreign Investment:**
◊ Attract foreign investment by easing restrictions in sectors like telecommunications.
◊ Facilitate cross-border data flow for qualified foreign enterprises.

• **Consumer Spending:**
◊ Boost digital consumption through incentives in the digital, green and health sectors.
◊ Create new consumption scenarios in experiences, entertainment and healthcare.

• **Rural Development:**
◊ Implement high-quality rural e-commerce projects.
◊ Enhance logistics and postal networks for rural e-commerce growth.

• **Cross-Border E-Commerce:**
◊ Promote standardized development and increase variety of global goods available to Chinese consumers.
◊ Encourage foreign SMEs to access the Chinese market through streamlined online channels.

• **Openness in Digital Commerce:**
◊ Expand Silk Road e-commerce partnerships with 31 countries.
◊ Establish bilateral cooperation mechanisms and a global e-commerce cooperation alliance.

• **Global Engagement:**
◊ Actively participate in e-commerce negotiations at the WTO.
◊ Strengthen dialogues within international organizations (e.g., BRICS, G20, APEC).
◊ Advance talks to join the DEPA to enhance global e-commerce collaboration.

Source: english.gov.cn

Taking the Lead

Zhao Xinjin, author of *The Odyssey of Self-Discovery: On Becoming a Leader*, discusses the need for trust and credibility in leadership and the fundamentally similar nature of leaders across cultures

Good leadership is a prerequisite for any kind of organizational success, but how exactly that leadership manifests itself is not set in stone. Different people and cultures promote different attitudes toward business management, but a number of fundamental characteristics underpin leadership approaches across all sectors and around the world.

In this interview, Zhao Xinjin, author of *The Odyssey of Self-Discovery: On Becoming a Leader* and a resident of the United States for over 30 years, discusses the need for leaders to generate credibility and trust, effective leadership strategies and the similarities and differences when managing across cultures and business scales.

Q. What would you say are the key principles of effective leadership?

A. Obviously, different people have different interpretations of effective leadership. Some emphasize how to get things done, others highlight the importance of how to influence organizational decision-making, and others focus on the ability to inspire or motivate people. So you can interpret effective leadership in many different ways.

In my view, long-term effective leadership is ultimately centered on people. It is about how you create a vision that inspires and motivates people, leading by example and developing the next generation of leaders. I think the most crucial aspects of effective leadership are both credibility and trust, which require knowing how to be authentic as a person, transparent and consistent. All of these things manifest differently, but all center on building credibility and trust. This often means being authentic, transparent, and consistent.

Authenticity demonstrates that you are human and helps create a culture of psychological safety, allowing others to share their perspectives,

Transparency fosters trust within the organization and empowers people to make decisions based on the most current and accurate information.

Consistency cultivates a culture focused on long-term goals rather than short-term results. The more consistent you are, the more likely you are to have a greater level of credibility within an organization.

From a different perspective, you can also view effective leadership as requiring a willingness to take ownership. Whether that be a willingness to make a decision, to take responsibility for something or to drive change, these can all be crucial aspects of leadership. But whichever viewpoint you take, you need to be able to motivate and inspire people.

Q. Can you provide an example of effective leadership strategies?

A. Many companies have leadership frameworks or leadership principles, but one of my favorites is Amazon's leadership principles. They are simple, clear and have very little chance for misinterpretation. The very first item on the list is 'customer obsession,' and what I like about this is that there isn't really a way you can misinterpret it. It's not customer satisfaction, it's not about making a customer happy, it's a customer obsession.

Another item is that leaders 'are right, a lot.' Obviously, leaders are not perfect, but you are expected to be right, and often. They expect leaders to have good judgment and good instincts, and while they draw insights from data, there is also a level of personal interpretation and action required. In this age of information age with a massive amount of data, this is critically important.

Q. To what degree does effective leadership look different depending on the cultural context?

A. As a topic, there is no clear consensus, with different people having very different viewpoints. Having traveled around the world for business, I have seen first-hand that different countries have their own unique cultures, business environments and business practices.

On the other hand, if you take a closer look, there are many more similarities than differences. At a human level, we all want respect and to work with honest, consistent and transparent people. So the fundamental principles are the same, but how approaches to achieving business objectives are leveraged, are likely to be different.

For example, in certain cultures, people will trust you until you prove otherwise, while in others it is the exact opposite, with you needing to earn their trust. But at the end of the day, it's all just a different way of achieving the trust and credibility required to do what you need to do.

There are also marked differences within a single cultural context. If you look at the different generations in China, say comparing 30 years ago to today, the younger generation looks at leadership completely differently from their predecessors. Because of differences like this, I would say focus on you as an individual and recognize that everyone is different, rather than focusing on the fact that you are an American or Chinese which tends to lead to more stereotypes.

Q. What are some of the key considerations for developing leaders and good leadership practices?

A. I conducted a leadership survey in the process of writing the book, and it produced some interesting results from two questions in particular. Have you ever asked yourself why you want to be a leader? And has anyone in your organization ever asked you why you want to be a leader?

Around 82% of respondents said yes to the question have you

Zhao Xinjin, born in China and a resident of the US for over 30 years, is the author of *The Odyssey of Self-Discovery: On Becoming a Leader*. *Xinjin* is a recently retired business executive from ExxonMobil with decades of global business experience including global sales and P&L responsibility for the ExxonMobil Catalyst and Licensing business. He also led the development of the largest ExxonMobil investment in China, the $10B petrochemical complex in Huizhou.

asked yourself why you want to be a leader, but only 39% said yes to the question of whether anyone in their organization had asked them why they wanted to be a leader. That means that around 60% of people have never had anyone ask them why they want to be a leader, and if nobody has ever asked that, how can you expect the organization to motivate and inspire you to be an effective leader?

We are all motivated by different things, and unless you understand what motivates people it's very hard to lead. I think this is why we often find that leadership development programs in many organizations are not particularly effective. They often focus on what the organization or the business needs, rather than what inspires the people within the organization.

The survey results also tell you that people should not wait for organizations to develop you into a leader. Every individual has to take ownership of their own leadership journey and for that I've found that self-reflection is a key tool. Learn by doing, and then reflect on how it went. In the last few years of my career I have always set aside time for myself each week to reflect on what went well, what I learned and what I could have done differently, and this really helped me keep learning and improving.

Q. As someone who has worked for a US company in China, to what degree are there different leadership challenges to be overcome here?

A. One of the biggest challenges for a lot of MNCs in China is the disconnect between what is going on on the ground compared

There are marked differences within a single cultural context

to what is expected at their headquarters. On the one hand, every headquarters will have its own business processes and practices, but on the other hand, in China everything feels different.

Bridging the gap is a major challenge, and at the end of the day it comes back to establishing trust and credibility on both sides. Aristotle's persuasion framework is a good reference, in that you need to appeal to logic, emotion and credibility. Just because you are right, doesn't mean that people will listen to you, whether you have data or otherwise, you still need to establish credibility. You still need to connect with people at a human level on both sides.

Q. What differences are there in the leadership approaches required between large MNCs and smaller startups?

A. In multinational companies you often hear the buzzwords 'change' and 'transformation,' but the reality is that while people may discuss it a lot, actually effecting change in an MNC is very difficult. For startups, you have to be more adaptive and ready to change all the time.

In China, companies never really talk about change or have a particular process for managing change, but they do it quite often because they believe change is expected and a part of the process. If the environment has changed, you also need to change. That same framework applies to startups, too. The external and internal environments are changing, as well as business objectives, so they have to be agile and ready for change.

The key link, however, whether you're in China or the US, or a small or large company, is that leaders have to maintain clarity on what changes and what remains. Leadership values, business purposes and fundamental business principles don't really change, but what changes is how a company goes about achieving results. And if a leader is able to clearly articulate what has changed and what has stayed the same, they will have more credibility and be better able to guide teams to manage the uncertainties and embrace the changes.

> Different people have different interpretations of effective leadership

Q. What are the challenges and opportunities presented by the increasing adoption of technology, AI use and the rise of remote working?

A. Technology makes things more effective, but not necessarily more efficient. Digital transformation has been a buzzword in recent years, but a McKinsey study found that over 70% of related initiatives did not deliver the anticipated results.

We're now seeing similar popularity with Artificial Intelligence (AI). Companies are trying to adopt AI to increase efficiency across the board, but adoption of new technology often requires culture change or business process change in order to achieve the expected results. That is where many companies tend to fall short.

One of the issues may be that in traditional firms, senior management is not always well-versed with technology. In my book, I suggested a reverse mentoring program, where younger, more tech-familiar employees can be used to leverage their knowledge, better inform senior management and also build relationships between levels in the company.

Q. How do you see trends within leadership changing over the coming years?

A. Firstly, I think most Western companies are a lot flatter nowadays than 10 or 20 years ago, it's much more matrixed and doesn't use the traditional reporting line structure. There is a lot of multi-team project-based operation, rather than it all being organization-driven, and this means that leadership is less about your position, but more about your ability to influence others, including those you don't technically have authority over. In the China context, most organizations are still hierarchical and less matrixed, but I would expect that to begin to change more in the coming years.

Second, particularly in the US, the acceptance of remote working is growing, at least in the tech sector and some newer organizations. The challenge here is how to establish trust and credibility in that environment and empower people to work at their best, which is hard if you've never spent time in the office together.

There have also been issues with the medium of messaging, ever since we've seen PowerPoint take over the business world. Decision-making is more driven by how the message is delivered, rather than its merit, and this is obviously not a good thing. AI technology could offer a way to reverse this trend somewhat, by better capturing and conveying the message to those in a more effective manner.

Finally, information overload is increasingly becoming a problem and will be exacerbated by the complexity of the business issues and matrix organization structures. I anticipate in the coming years AI will play an important role in helping leaders to simplify and maintain clarity in this dynamic and uncertain world.

Interview by Patrick Body

A BRIDGE TOO FAR

Local Government Financing Vehicles are integral to China's provincial economies, but mounting debts and low income streams are raising questions about their sustainability

By Sean Matthews

Image by Gabriel Heredia

China's LGFVs took on trillions of dollars in debt, and they are now struggling to pay it back

The millennia-old district of Bishan in Chongqing takes its name from an ancient jade artifact, but local bureaucrats had a different mineral in mind to describe their severe financial predicament in late August. According to Bishan officials, the time had come to "smash pots and sell iron"—a metaphor for liquidating assets to generate revenue at all costs—to address an overwhelming debt pile. They named a special task force after the forceful idiom.

Bishan is not alone in scrambling for desperate last-resort measures to address a burgeoning debt hangover. Local governments across China have racked up an estimated ¥66 trillion ($9.3 trillion) of debt—equivalent to half of last year's national GDP—held by a curious breed of financial firms—that may or may not be the responsibility of the local governments.

These local government financing vehicles (LGFVs) were first established in the early 1990s as middlemen to borrow on their behalf. They took on trillions of dollars in off-the-books debt to pay for the construction of public projects. But once a motor of growth, many are now straining under unsustainable debt and struggling to repay as land prices remain in the doldrums and China's economy slows.

The debt pain has mounted to a point where the International Monetary Fund (IMF), last year, described it as "China's Achilles heel."

"I would argue that LGFVs are going to be the cause of the next financial crisis in China," says Andrew Collier, founder of Orient Capital Research and author of *Shadow Banking and the Rise of Capitalism in China*. "Little has changed in terms of the threat they pose to the financial system."

Great Wall of debt

LGFVs exploded in size and number when China unleashed a ¥4 trillion ($560 billion) fiscal stimulus to stave off the Global Financial Crisis in 2008. Because local governments were short of funds and not allowed to run deficits at that time, the LGFVs were encouraged by the central government to act as conduits for Beijing's fiscal stimulus. They helped provinces prosper during the decades of China's debt-fueled growth, but started to unravel after the Chinese real estate bubble burst in 2021.

Funded by a combination of bonds and bank loans, LGFVs enabled the construction of impressive roads and railways while keeping liabilities off the government's balance sheet. "Because local governments in China are basically not allowed to borrow from banks directly, LGFVs were developed to meet the demand to circumvent certain regulatory requirements," says Gary Ng, senior economist for Asia-Pacific at Natixis Corporate and Investment Banking.

Over time, though, Ng says they have increasingly operated in a "gray area" because local governments have utilized them to support activities that go beyond public welfare. Some LGFVs have diversified into purely commercial businesses, in order to balance the books, such as data centers, electric vehicle charging stations and property development, which have a higher level of financial risk than public policy projects.

"The key point is that there's not really a direct guarantee from the local governments to repay the debts accrued by LGFVs, which makes it markedly different from the debt issued by the governments directly," says Ng.

LGFVs operate under regional and local governments, with limited autonomy in investment and financing decisions. They earned revenue by borrowing low-cost funds from Chinese state banks or issuing debt in the domestic public bond market, running utilities services, as well as sale and lease of land for property development—land also serves as collateral to secure bonds—taxes and central government transfers.

At the end of 2023, China had more than 3,200 LGFVs which had issued a combined ¥7 trillion ($1 trillion) of bonds in the local public bond market, according to data from FinChina. A record ¥4.65 trillion of this sum was set to mature in 2024, some 13% more than in 2023.

"The ability of some local governments to service debt has also been impacted by the slowdown in the property market since

2022, which has reduced fiscal revenues from land sales," says Rajiv Biswas, international economist and author of Asian Megatrends.

The rising debt pressure confronting LGFVs has made some of them the most visible casualties of China's economic slowdown. Among the most high-risk provinces are Guizhou—where outstanding debt last year represented nearly three-quarters of provincial GDP, above the 60% standard set by the central government—Inner Mongolia, Ningxia, Liaoning and Qinghai.

Collier says that LGFVs in these poorer provinces—with weaker banks and less access to state-backed loans—are likely to default unless they are bailed out. "The main big cities, like Beijing and Shanghai, are where capital is congregating, leaving weaker cities and provinces at the mercy of transfers from Beijing," he says. "The priority investment in semiconductors and other high tech, along with the military, will leave less capital available for peripheral institutions like LGFVs."

LGFVs are not unique to China, but their importance to, and prevalence in, the Chinese economy stands out. "Other countries have them —the US has various municipality-tied investment companies and there are a couple in the UK —but certainly, their size in China relative to the economy is not something we've seen elsewhere," says Rory Green, chief China economist at GlobalData.TS Lombard. "Their importance in terms of how much their investment contributed to growth and employment is probably one of the largest we've seen worldwide."

Today, LGFVs are facing issues of declining capital efficiency, large debt burdens and most recently, liquidity problems.

The East is in the red

Concern over the huge debt risk incurred by LGFVs over the past 15 years came to a head in 2022-2023, as the liabilities posed a risk to China's financial and economic stability. In some areas there were reports of groups of municipal service employees including teachers, bus drivers and government workers, who saw salaries slashed or go unpaid for periods.

The threat dissipated somewhat last summer when central authorities unveiled measures to de-risk LGFVs by mandating local governments and investors to shoulder some of the costs to resolve the sector's debt burdens.

"Beijing was pushing quite strongly last year to try and squeeze the LGFVs, make them sweat their assets and go through a more market-led deleveraging," says Green. "But with growth under pressure, recent weeks have seen a significant policy reversal, at least for this cycle," Green adds, noting that the National People's Congress unveiled a ¥10 trillion ($1.38 trillion) debt swap plan in early November to address hidden local government liabilities.

Senior government officials have sought to play down any sense of a crisis. "China's overall financial system is sound. The overall risk level has significantly declined," People's Bank of China governor Pan Gongsheng told state media in August. "The number and debt levels of local government financing platforms are declining" and the cost of their debt burden had "dropped significantly," according to Pan.

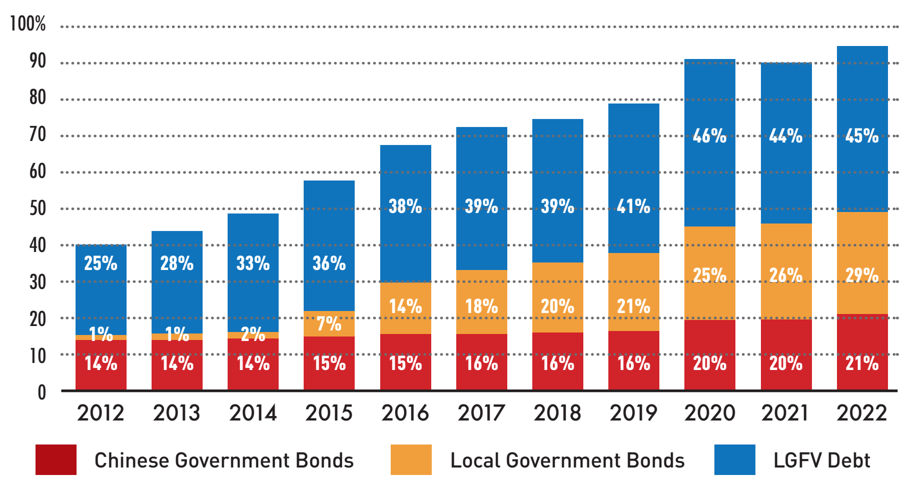
But LGFV debt remains a major headache for Beijing. At least ¥1 trillion ($140 billion) in bonds alone will mature in each of the next couple of quarters, and bonds represent only one-fifth of the total outstanding debt owed by LGFVs, according to S&P Global Ratings.

Not all LGFVs are alike. "Local governments in economically stronger provinces with more fiscal resources have been better able to support their LGFVs compared with peers in economically weaker provinces," says Ng. Furthermore, local officials operating in areas with stronger and less-indebted SOEs are also more likely to mobilize sufficient resources to support distressed LGFVs.

Ballooning LGFV debts and reduced incomes have led to a surge in the debt servicing burden for local governments. Twelve out of China's 31 provinces, regions and municipalities were spending more than 100% of their monthly fiscal income on debt servicing by the end of 2022, compared with none five years earlier—at that time, Jiangsu province had the highest debt service coverage ratio of just 41%.

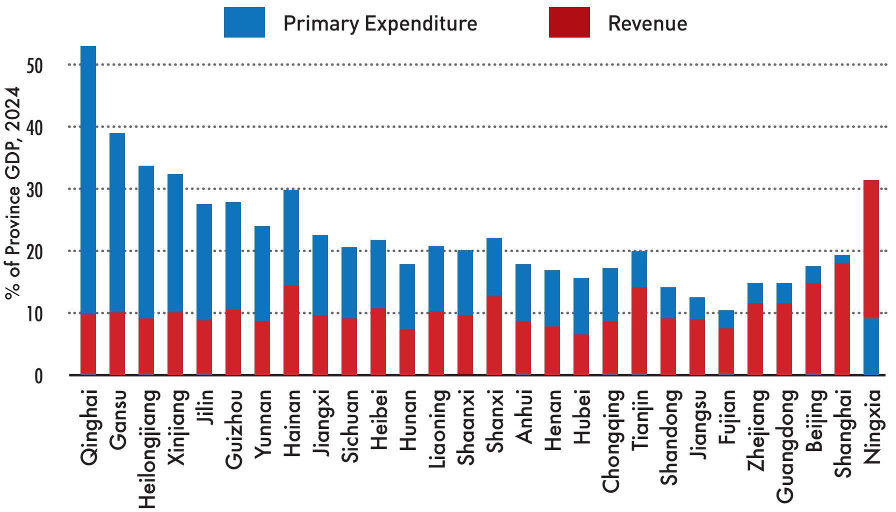
The punishing debt obligations are weighing on China's economy. "It's another drag on growth, for sure," says Green. "When you think of the big actors within China's economy, local governments are one of the main ones alongside banks, SMEs and households. Revenues are constrained, liabilities are high and there is immense pressure to clean up balance sheets."

DEBT DILEMMA | China's LGFV debt as a percantage of GDP has been growing, as have other forms of debt



Source: China Ministry of Finance, Wind, PIMCO

IN VS OUT | Many Chinese local governments have outgoings that outstrip their revenue, in several cases by well over 100%



Source: IMF

The strain on local finances has been underlined by reports of cash-strapped local authorities chasing companies for taxes dating as far back as the 1990s. In one case, a Shanghai-listed food and drinks manufacturer said it had received an ¥85 million tax bill covering 1994-2009.

Government spending has softened amid the crunch. At the local government level, infrastructure spending is tipped by Fitch Ratings to decline this year in 12 provinces that face a high debt-servicing burden. "These are all symptoms of pressure that the LGFVs are under," says Green.

No easy way out

Beijing has three main options on the table for resolving the LGFV debt hangover, each with its own merits and drawbacks. A massive bailout would be a show of force by the central government intended to immediately defuse risk from the debt pile and swiftly restore investor confidence. Domestic markets appear to have priced in the possibility to some extent, as borrowing costs for LGFVs fell to a 25-year low in April amid investor expectations that authorities would rescue any operations that ran into trouble.

But given that Beijing has already rejected a proposal from the IMF to spend ¥6.93 trillion to revive the moribund housing market, it seems unlikely that central authorities will countenance a blanket bailout of LGFVs.

"I don't see massive stimulus as a likely scenario under the current political reality. The cost is that you may have more debt on the central government level, in exchange for growth in the short term," says Ng. "But if stimulus is channeled to the right spaces, it could stimulate growth in the future or improve confidence. Maybe it's not that much of a bad choice, but there will be a cost to that."

So far Beijing has favored a 'salami slicing' approach that has taken the form of refinancing maturing bonds, replacing high-cost non-standard debt with loans, or directing banks to roll over loans to longer tenors for cash-strapped LGFVs.

But these are temporary fixes that aim to buy time rather than tackle root causes. Working out how exactly to achieve this goal will not be simple. "If measures are too targeted, it may not target the right problem," says Ng. "And if the right problem is identified, how to tackle it in such a surgical and controlled way from a very top-down level is also quite difficult sometimes."

Local governments have also been working to alleviate pressures by transferring cash-generating assets to LGFVs, allowing them to generate cash flow and improve credit quality to increase access to funding. This is not far-fetched as LGFVs already have some exposure to money-making commercial activities. But this is not a surefire solution either. Transitioning LGFV businesses to more commercial models will not be straightforward.

Thoroughgoing reform of the system would appear to be warranted, but Chinese banks would likely need to share the burden of resolving LGFV debts, given their loans account for 50% to 70% of a typical LGFV's debt.

Banks would need to be prepared to accept defaults and losses as part of improved market discipline. But reports suggest that they are generally unwilling to do so, according to Collier. "The banks have increasingly been squeezed in order to provide capital for the economy—their net interest margins have fallen steadily over the past few years. There are not many options left. At some point, like the property market, many LGFVs will have to default," he says.

"What is most likely to happen is a mix of salami slicing, with the ad hoc resolving of issues as they arise, and then at the same time, gradual reform of the fiscal structure and political economy to limit the need for these LGFVs. Unfortunately, for investors, it's not particularly exciting but I think that is what will take place," says Green.

Muted future

Ultimately, LGFVs are a symptom of the decades-long contradiction in China's fiscal and political systems. Local governments were caught between hard budget constraints and overly ambitious growth targets. Beijing's measures to date aim to draw the sting out of the debt risk, but do not move the needle on the fundamental causes.

"Although the risks related to LGFV financing are being addressed by China's national and provincial governments, the process of reducing these risks will take several more years to complete," says Biswas.

How to Play the Chess Game That is Foreign Trade in 2024

Trade between China and the US has dropped over the last five to 10 years, and the trend looks set to continue

by Ouyang Hui, Distinguished Dean's Chair Professor of Finance, CKGSB
and Dongyan Ye, Research Fellow, CKGSB

Against the backdrop of economic globalization, trade frictions among major countries are not only likely to intensify multi-party tariff confrontations, but also may push mutually beneficial, free and fair international trade to the edge of a cliff. Chinese enterprises going overseas not only have to deal with the risks of trade friction but also the challenge of 'industrial hollowing out.' How China's businesses respond to the 'new normal' will show how resilient and competitive Chinese foreign trade can be, but the question remains of how China can adjust its foreign trade strategy, diversify trade risks and expand into new market spaces.

In June this year, the US Treasury Department issued a Notice of Proposed Rulemaking (NPRM). The 165-page draft seeks to limit investment in China by US entities in three high-tech areas, namely semiconductors and microelectronics, quantum information technology and artificial intelligence. This draft came a month after the US announced the results of its review of the 301 existing tariffs imposed on China, deciding to impose additional tariffs on new energy, semiconductors and key minerals, thus triggering a renewed focus on trade as well as tariffs.

After the outbreak of the trade war between China and the US in 2018, tariffs between the two countries rose and trade barriers increased, and the volume of direct trade between China and the United States decreased. China has since attempted to adjust its foreign trade strategy and taken a variety of measures to alleviate the pressure brought about by the tensions. One such strategy has been to adjust its trade structure by strengthening cooperation with other countries and neighboring regions, reducing its dependence on the US and diversifying its trade risks through expansion into new markets.

This change has been reflected in the decline in China's direct trade with the US and its declining trade position with other

> China's governance approach is changing to advance its own definition of modernity

major partners such as Europe, Japan and South Korea. At the same time, China's trade with emerging economies such as ASEAN, in particular Vietnam and Mexico, has increased in relative terms. China has also increased direct investment into these emerging economies to reduce its dependence on any single market.

The difficulties posed by the trade tensions have meant that it has been difficult for China's trade to grow as quickly as it had done before. And while going overseas is not the panacea it was, thanks to the increased exposure to trade frictions, as many Chinese enterprises are still seeking out new markets, it is important to also highlight the risks of a hollowing out of Chinese industry.

Structural changes in foreign trade

There are clear changes in the trends of China's foreign trade before and after the trade war began in 2018. In 2017, the US made up 14.27% of China's total foreign trade, but this has since decreased to 10.7% in the first five months of 2024. Over the same period, trade with the EU, Japan and South Korea decreased by 2.30%, 2.33%, and 1.50%, respectively. Meanwhile, the shares of ASEAN, Vietnam, Russia and Mexico all increased by 3.27%, 1.17%, 1.85%, and 0.21%, respectively.

In other words, compared with 2017, the share of developed economies such as the US, Europe, Japan and South Korea in China's foreign trade has declined, while the share of emerging economies such as Vietnam and Mexico rose steadily. In 2020, ASEAN overtook the EU as China's largest trading partner.

China's trade as a whole has fluctuated since 2018, but has generally held an upward trend. In 2019, total trade declined by almost 1% due to the impacts of trade restrictions. The outbreak of the pandemic in 2020 compounded this with a global decline in trade as countries shut down to varying degrees in an attempt to deal with the impacts of COVID-19.

In 2021 and 2022, China had better control of the pandemic, and thanks to its relatively complete supply chain, as well as other countries still struggling to bounce back from lockdowns, China's export scale massively increased—29.81% year-on-year in 2021, and a further 4.4% y-o-y from that high base in 2022. In 2023, however, China's total trade declined by 5.91% y-o-y due to a decline in overall global trade and increasing trade frictions, it fell to just below the 2021 level, but was still a 44.55% increase compared to 2017. Up to May 2024, total trade has amounted to $2.46 trillion, an increase of 2.77% y-o-y.

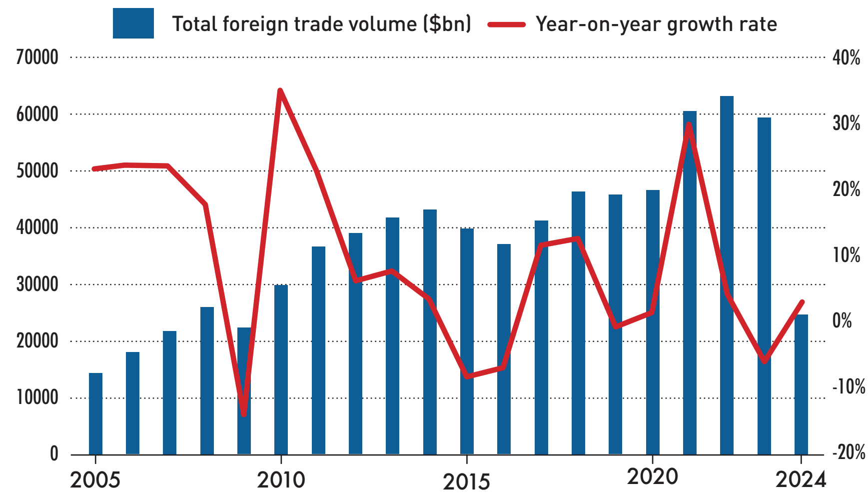
China-US trade declines

Between 2012 and 2022, the US was the largest destination for China's exports, with exports to the US accounting for 18.99% of the total in 2017. After an increase in 2018 due to manufacturers trying to beat the impending implementation of tariffs, exports to the US have been steadily declining year by year.

From 2017 to 2024, the shares of the US, the EU, Japan and South Korea decreased by 5.00%, 1.81%, 1.64%, and 0.26%, respectively, while the shares of ASEAN, Vietnam, Russia, and Mexico increased by 4.47%, 1.47%, 1.09%, and 0.41%, respectively. Since 2023, ASEAN has been the largest export destination for China, overtaking the US.

China's foreign trade balance has gone through two distinct rounds of decline followed by a rise. The trade surplus fell to a near-decade low in 2018, but it grew by 20% year-on-year in 2019, the same as it

GROWING TRADE | China's total foreign trade volume and growth have fluctuated in recent years



Source: CEIC

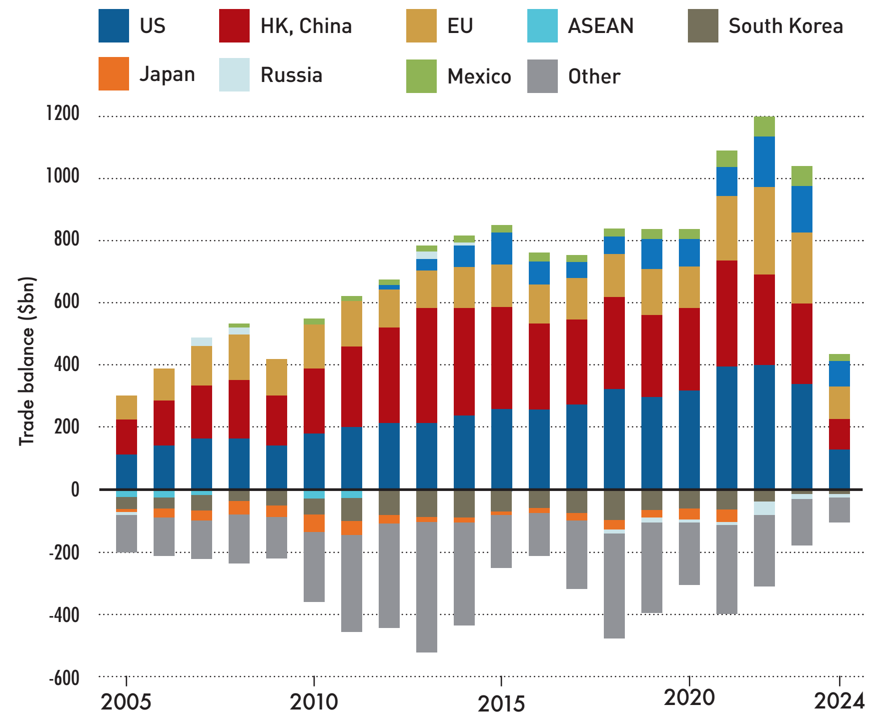
did in 2017 before the trade war broke out. China's trade surplus rose every year for the three years of the pandemic, reaching a record $837.928 billion in 2022. The trade surplus also remains relatively high in 2023 and 2024, although it has declined slightly year-on-year.

The United States, Hong Kong, China, the European Union and ASEAN are the top sources of China's trade surplus, with China's trade surplus with Mexico and ASEAN gradually increasing.

Between 2017 to 2023, China's share of trade with the US decreased by 5.07%, while the EU, Mexico, Vietnam, South Korea, and Canada increased their share. China was the US' largest trading partner from 2015 to 2018, but the EU replaced China in 2019. Since then, both Mexico and Canada have also overtaken China, and the country now sits in fourth place, where it is expected to stay for some time, given its lead over fifth place South Korea.

China, the EU, Mexico and Vietnam are the main sources of the US trade deficit. From 2018 to 2023, the US trade deficit with China narrowed from $418.2 billion to $279.4 billion, while the trade deficit with the EU, Mexico, and Vietnam grew. Additionally, the re-export trade from China to ASEAN and Mexico, and from ASEAN and Mexico to the US is trending upwards.

BALANCING ACT | The US share of China's trade balance has been shrinking in recent years



Source: CEIC

Chinese firms going global

In terms of outward direct investment, Chinese enterprises are accelerating their presence in Southeast Asia, especially in Vietnam. The US-China tensions and the pandemic have strengthened the trend of foreign investment flows into Vietnam and Mexico, in particular, for a number of reasons. These include actions to reduce production costs, improve product quality and expand into overseas markets, bolster a diversified layout within the global supply chain, circumvent US tariffs and trade barriers and improve overall risk-resistant capacity.

Even prior to 2018, China's direct investment into Vietnam was increasing year by year, from $427 million in 2014 to $2.465 billion in 2018. It then increased to $4.063 billion in 2019, before declining during the pandemic and returning to growth in 2023.

In terms of Mexico's FDI data, the US accounts for 40% and China only accounts for about 1%, but China has now become the fastest-growing source of foreign investment in Mexico. In 2018, China's direct investment into the country doubled from the previous year, and grew to reach a single-year high of $570 million in 2022. China is now the fourth largest source of foreign direct investment in Mexico.

Conclusion

Overall, in the context of the US-China trade war, China's trade with the US, Europe, Japan and South Korea and other major economies has gradually declined in China's share of foreign trade, while the share of China's trade with ASEAN, Mexico and other emerging economies is gradually increasing.

In order to cope with the trade war, China has attempted to circumvent trade barriers as well as encourage Chinese enterprises to go abroad and make direct investments and build factories overseas.

As Chinese companies go overseas, the risk of 'industrial hollowing out' in China is a cause for alarm. In recent years, China's manufacturing value-added as a percentage of GDP has been on the decline: in 2006, the share of manufacturing value-added as a percentage of GDP peaked at 32.5%, and hovered at a high level for the next five years, subsequently declining year by year from 2011 to 26.3% in 2020, a significant drop of 5.8% in nine years. Although this share rebounded to 27.7% in 2022, it is still at a multi-year low.

Compared with the US, Germany, Japan and other major global industrial countries at the same stage of development, the share of manufacturing in China has declined earlier and faster, which could trigger the 'hollowing out' of industries, weakening the resilience of China's economy to risks and its international competitiveness.

The Age of AI

Larry Zhou, Fellow and Chief Network Architect at AT&T, provides strategic insights for innovators and entrepreneurs on how to leverage AI, while encouraging Chinese companies to develop more targeted AI solutions

Interviewer: Sun Baohong, Dean's Distinguished Chair Professor of Marketing at CKGSB

US-China Technology Frontier Series

This Q&A is part of a series of articles developed by the AI+Web3 Research Center of CKGSB alongside industry experts on the US-China technology frontiers. The series aims to introduce the most cutting-edge theories and practices at home and abroad on the theme of digital technology and internationalization, open up the mindset of students, discuss new business opportunities brought about by the development of science and technology, and identify new opportunities for the technologization and internationalization of Chinese enterprises.

Artificial intelligence (AI) has gradually demonstrated ever-greater capabilities, and has already surpassed individual humans in terms of knowledge accumulation and coverage. And the AI wave is only just beginning. There are a number of key innovation directions open to exploration, including generative AI, convolutional neural networks and robotics.

In addition to its many generative functions, AI also raises questions related to such cutting-edge trends as human social simulation, brain-computer interface technology and AI doppelgängers, as these technologies will not only change the operational approaches of enterprises, but also profoundly affect the structure and development of society.

Chinese technology companies in particular are using AI and other technologies to address global competition and create better enterprise applications. But there is an importance in developing "expert models" that are better suited to enterprise applications and can provide more accurate solutions.

Q. Does AI possess intelligence and to what degree does it have advantages over humans?

A. There is a close relationship between knowledge and intelligence. Knowledge is what we acquire through learning, experience and the accumulation of information and facts. Intelligence, on the other hand, is the in-depth understanding and insight that comes from summarizing, reasoning and analyzing on the basis of this knowledge. Nowadays, AI demonstrates a similar process. In training an AI model, we first need to input a large amount of knowledge and data. When this knowledge accumulates to a certain level, an "emergence" of intelligence is possible.

It wasn't until November 2022, with the release of GPT-3.5, that OpenAI first observed the emergence of what was characterised as intelligence in AI. This emergence has similarities with the human learning process, as we also gradually generate intelligence after accumulating enough knowledge. GPT-4 was released in March 2023, reaching 1.76 trillion parameters, and was arguably the most advanced AI model at the time. Human cognitive connections total about 100 trillion, so AI is still a little way behind, but is on its way.

Through testing, GPT-4's intelligence level has reached an IQ of 80-90, however, in terms of knowledge coverage, GPT-4 is far beyond individual humans. The knowledge of individual humans is usually narrow and only covers specific fields, while that of GPT-4 covers almost all the knowledge of human civilization since its development. Moreover, GPT-4 does not need to rest and sleep like human beings, it is able to learn continuously, and its speed of acquiring knowledge is more than a hundred times that of human beings. By 2024, the latest GPT-4o model had reached an IQ of 120.

Now, most of the tasks that GPT-4 can accomplish are almost indistinguishable from human abilities. For example, in terms of visual performance, GPT-4's ability to recognize species and to recognize faces has surpassed that of humans. In addition, deep AI technology can generate a variety of languages, paintings, artworks and programs that cover almost every aspect of human creativity.

This makes us think: where will humanity go when faced with such rapidly developing AI?

Q: What are some of the main directions in which AI is currently being developed?

A: In the current field of AI, the mainstream technology direction is primarily divided into two, namely: Convolutional Neural Network (CNN) and Generative AI, each with its own strengths. Convolutional Neural Network is mainly used in the fields of image, face and speech recognition, using layers of convolution and pooling operations, image and speech data can be processed and recognized.

Generative AI is based on different types of models that can generate brand new content through complex algorithms and deep learning. It is stochastic and creative, and is capable of "creating something out of nothing," producing unexpected results and broadening the boundaries of human thinking.

The currently widely used ChatGPT is a key representative of generative AI. It is largely based on the Transformer model, which was first introduced in 2017 and has since been adopted and continuously optimized by OpenAI. In the process, OpenAI collected and processed a large amount of data in areas with low labor costs, such as Kenya, and through training for up to five years, the model eventually began to show intelligence. Once intelligence emerges, it is like opening Pandora's box, progressing rapidly and uncontrollably.

Generative AI has a wide range of applications, including in areas such as copywriting, report generation, drawing, video production and even writing programs. For example, in the financial industry, generative AI is powerful in data analysis and financial statement processing, capable of completing complex analytical tasks quickly and accurately, with far-reaching impacts on Wall Street and the entire financial industry.

Larry Zhou is a Fellow and Chief Network Architect at AT&T. In his forward-looking research, Larry focuses on on a number of topics, including Artificial Intelligence, the Internet of Things, Blockchain and Web3. Larry has demonstrated exceptional technical and architectural vision in the telecom industry as a true innovator and industry disruptor.

Currently, another area of great interest in the research direction of artificial intelligence is the simulation of human society. This direction aims to explore the formation and development of human society, trying to understand how complex social structures such as interpersonal relationships, social hierarchies, religions, classes, parties, etc. are gradually formed through simulation.

Nowadays, researchers can try to use artificial intelligence to simulate the formation of human societies and to predict the trends of future societies. Such simulations can help people to foresee possible consequences before making major decisions. For example, at the national level, when deciding on major policies, simulations can be used to assess the potential impacts of different decisions. In the past, it was very difficult to conduct simulations on such a large scale; now, with the help of artificial intelligence, this area of research has become more feasible and full of potential.

Robotics is also an important development. Although artificial intelligence has demonstrated strong computational and analytical capabilities, its actual ability to act still needs to be realized through robots. If we think of AI as the brain, robots give this "brain" the ability to act. AI doppelganger technology is also a compelling area. In the future, there may not only be one "you," but perhaps another "you" in the virtual world. This raises a deeper question: are we really the highest intelligence in the universe? Or are we just manipulated non-playable characters (NPCs), as in The Matrix?

As esoteric as these ideas may sound, advances in artificial intelligence have forced us to rethink how we do things. In addition to Internet and enterprise applications, the application of AI in the biomedical field is also remarkable. For example, the AlphaFold model introduced by Google was able to quickly unravel about 200 million protein structures, solving the problem of protein structure prediction. AlphaFold won the 2024 Nobel Prize in Chemistry.

MIT has developed a drug selection system that utilized AI to screen new antibiotics. The methodology used by AI in the drug selection process is completely different from the traditional methods used by human beings, and the antibiotics selected in the end had remarkable effects. This shows the extraordinary potential and uniqueness of AI in certain areas, beyond human abilities. Although AI sometimes brings unexpected results, its innovative ability and potential value cannot be ignored. In the future, we should further embrace and utilize AI to meet various complex challenges and needs.

Q: Robotics is an important development direction for AI. Can you talk in detail about the opportunities in China?

A. I think robots give AI the ability to actually act, going from just being able to think, to actually able to perform tasks in the physical world. Currently, robots used in traditional industry are commonplace, such as in warehouses, docks and on production lines. However, the future of robotics will be much smarter, especially when it comes to home robots, and I think these will be important developments.

As the global population ages, the demand for robots for the elderly will grow. Future household robots will not only need to have a high level of intelligence, but will also need to be able to adapt to a variety of different environments, which is very different from the way existing industrial robots work in fixed environments. These new robots will no longer be limited to simple, repetitive tasks, but will be able to operate independently in complex and changing scenarios, such as caregiving. For example, Tesla plans to launch home robots priced at less than $20,000, suggesting that future consumer trends may shift from the traditional show of wealth—comparing who has a nice car and a big house—to comparing who has more and smarter robots.

Currently, there are a number of open-source robotics projects that are worth looking at. These projects allow ordinary people to build robots at home. For example, one such project includes robots that can stir-fry and cook at home, and although it does not have a high success rate at the moment, ranging from about 20-30%, it shows us what is possible in the future. By refining and optimizing these projects, it is entirely possible for Chinese companies to further develop technologies to better serve the home market.

> Advances in artificial intelligence have forced us to rethink how we do things

Another important development in robotics is the brain-computer interface. Brain-computer interface technology makes it possible for humans to control machines with their thoughts by connecting the brain to a computer. Elon Musk's Neuralink project is a prime example of this, with a chip implanted in the brain that reads brain waves and helps to enable movement. This technology could help people who are unable to move due to physical impairments to regain mobility through robotic arms or legs. In addition, brain-computer interface technology could help blind people regain their vision. Although this sector is still quite crude, the technology will mature.

Brain-computer interfacing has another valuable application, namely, to provide a "second brain" for human beings. Currently, our brain has limitations in terms of memory and information processing capabilities, and through brain-computer interfaces, human beings are expected to obtain an external "super brain" as a "plug-in" to help people answer complex questions. In the future, AI may be directly connected to the human brain in this way to realize more efficient information processing and decision support.

Q: What are the benefits to developing enterprise-specific expert models for organizations?

A. In China, there is also huge potential for growth in the field of AI in the form of enterprise-specific expert models. With generic models such as OpenAI GPT-4, we have found that while broad in their capabilities, they do not always provide accurate results that meet specific needs. As a result, many organizations have reservations about its practical application. For example, some firms have banned the use of OpenAI's ChatGPT-4 because they believe that corporate data is valuable and confidential and should not be easily shared with third parties.

I think the value of generalized models in business applications, especially for enterprise-level use, has yet to be proven. In contrast, I prefer enterprise-specific expert models, which focus on specific domains and can provide more targeted and precise solutions. For example, Huawei has developed a system dedicated to weather forecasting, which is designed to meet the needs of enterprises that require special expertise in that particular area. I think the market potential for such expert models is huge.

Multimodal modeling is also an important direction in the latest development of AI. Multimodal modeling means that AI can not only process text, but also understand and generate content in multiple forms, such as video, images, music and so on. This makes AI increasingly human-like, able to access and process information through multiple senses. However, for enterprise applications, I think there is another type of model that may have more potential than multimodal models, namely a collection of expert models, a concept known as "Mixture of Experts" (MoE).

The core idea of the MoE model is to outperform a single large model, such as GPT-4, through the collaborative work of multiple smaller expert models on a specific outcome. Recently, a company called Mystery achieved this goal by using seven small models with 700 million parameters to outperform GPT-3.5, with its 175 billion parameters. Mystery plans to launch a program that consists of a dozen small models, each focusing on a different task area, which is expected to outperform GPT-4 in certain specific tasks.

In 2024, to further enhance the performance of Large Language Models (LLMs), a team from Duke University, Stanford University and Together AI proposed the innovative "Mixture of Agents" (MoA) approach. The system uses multiple layers—the key innovation—each containing a number of individual smart "agents." Each agent takes input from all agents in the previous layer to generate its response.

This design allows the system to take advantage of the diversity of models, mobilizing a wider range of capabilities than a single model by using multiple agents with different strengths. The multi-layered approach also allows for iterative optimization, where outputs are progressively improved as they pass through multiple stages. MoA opens up the possibility of creating a more powerful and comprehensive AI assistant by combining the strengths of multiple models.

Additionally, it suggests a path to resource optimization, whereby integration using small open source models may reduce reliance on large proprietary systems while producing high performance levels. Organizations of all types may be able to flexibly combine different LLMs to create customized AI systems based on their specific needs. From a research perspective, the MoA framework provides a new avenue for exploring how different AI models complement each other.

This area is of major interest to me because demand for computing power has always been a key limiting factor in the development of AI. Especially in China, the shortage of computing resources limits the training and application of large-scale generalized models. If we can use the limited computing power to train multiple small expert models/intelligent agents and combine them together, this approach has the potential to surpass a single powerful opponent through teamwork.

I'm also interested in longitudinal expert models, especially those that focus on enterprise-specific data. In the US, these models are called "vertical models," and they focus on a particular industry or domain-specific data set. Every organization has unique data, and this data is its most valuable asset. If an organization can use its own data and industry data to train expert models, these models may outperform large general-purpose models like GPT-4 on specific tasks.

The potential of such expert models lies in their ability to provide more accurate and specialized solutions, which is crucial for many businesses. By combining enterprise-specific data, expert models can generate more precise and targeted results, which not only improves efficiency, but also helps companies gain an edge over their competitors. Therefore, I believe that the application of expert models has a very bright future, especially in markets like China, where the use of limited computing resources to create targeted AI solutions is promising.

I believe that the application of expert models has a very bright future, especially in markets like China

Q: Will AI one day replace humans?

A. In reality, AI has been shown to be a powerful aid in many areas. However, as powerful as AI may seem, the results it generates do not always match human expectations. For example, AI tends to give very general or long-winded answers, but these answers often fail to solve specific problems. As a result, AI can only serve as an assistant in some cases, rather than replacing the need for humans altogether.

However, as AI evolves, this assistant role may evolve into a more companionable presence. AI assistants may get to know us better than any of our friends. Not only will they be able to help us in our work, but they may also be able to establish deep connections with us emotionally. This emotional accompaniment and increased understanding gives AI huge potential for use in the future.

Whether it is robotics or brain-computer interface technology, or the development of multimodal models, today's AI is gradually moving from a single function to diversification and intelligence. In the future, these technologies are bound to profoundly change the way we live and work, and we need to actively embrace these changes and fully utilize the opportunities that AI brings.

Interviewer: Professor Sun Baohong is currently Dean's Distinguished Chair Professor of Marketing and Head of the Web3+AI Research Center at CKGSB (https://english.ckgsb.edu.cn/faculty/sun-baohong/)

GAME ON

Video games are increasingly popular in China and the country's developers and publishers are also beginning to play a greater role on the world stage

By Patrick Body

Chinese tech companies own stakes in a large number of international game publishers and developers

Just 83 hours after the August release of *Black Myth: Wukong*, the game sold its 10 millionth copy, becoming one of the fastest-selling debuts in video game history. The game, produced by Tencent-backed Game Science, also broke records for peak concurrent users on both PC and PlayStation platforms. It marked a major breakthrough for Chinese games in the international market and the Chinese gaming industry as a whole.

For a long time, the Chinese video game industry produced local copies of international best sellers, but it is now the world's largest with widespread appeal across diverse swathes of the population. It was not easy to get to this point for the country's publishers, developers or even the gamers themselves, given the many regulatory challenges.

"China has gone from gaming novice to global powerhouse," says Joost van Dreunen, CEO of intelligence firm ALDORA and games professor at NYU Stern. "The Chinese video game industry has experienced significant growth and transformation over the past decade, becoming the world's largest mobile gaming market."

Logging in

The global video games market, which includes the games, the hardware they are played on and esports—professional players competing against one another in an organized format—was valued at $217.06 billion in 2022, according to research firm Grand View Research, with an expected revenue forecast of $583.69 billion by 2030.

China makes up about 20% of the global market, with domestic sales revenue exceeding ¥300 billion ($42.1 billion) for the first time in 2023, a 13.95% year-on-year increase, according to the China Audio-Video and Digital Publishing Association (CAVCA). Growth is expected to continue, with one estimate indicating an increase in market size to $95.51 billion by 2029.

Around 46% of the Chinese population engages with video games, lower than the 61% of the US population, according to the Entertainment Software Association, but due to population size, the number of individual users is significantly higher. Around 46% of gamers are women in both countries, and China and the US also have a similar average age, at 35 and 36, respectively.

Users play games across three main platforms—mobile, console and PC. In China, mobile gaming has seen the largest growth in recent years and, in 2023, it accounted for 66% of the country's total gaming expenditure and 74.88% of actual sales revenue, according to CAVCA. Console use in China is low in comparison to other markets, at just 15%—compared to 36% in the US—due in part to historical and current regulations limiting console access and content, but also due to the costs in comparison to a mobile phone.

"Consoles are expensive in China, and this can be prohibitive for some prospective gamers," says Ivan Su, Senior Equity Analyst for Morningstar Asia. "You also need peripherals, such as TVs, to use consoles so they can add to the costs as well."

Video games provide a number of income streams, ranging from sales of physical or digital copies of games, to themed or esports events and merchandise. But one key trend in recent years has been the use of microtransactions—in-game purchases, for real currency, of items such as equipment, characters or skins.

Microtransactions usually appear in free-to-play (F2P) games, which means they can be downloaded for no upfront cost but often have stunted gameplay speeds or minimal customizability to encourage in-game purchases, and have proven incredibly lucrative.

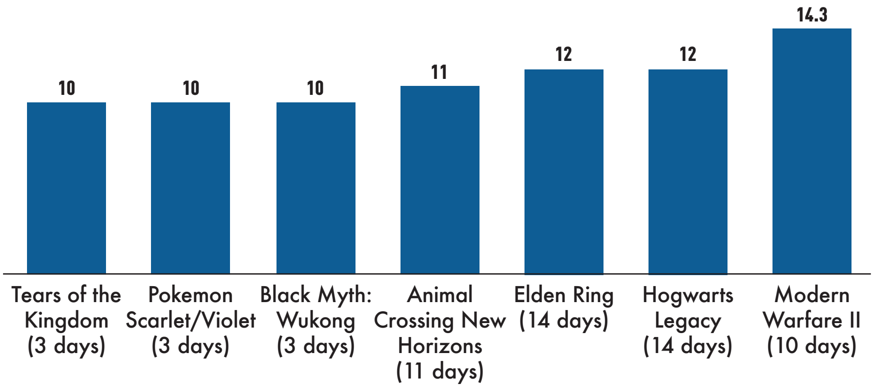
Major Players

Gaming in China is dominated by the almost-duopoly of Tencent and NetEase. In 2022, they together represented 61% of the total share of domestic computer and mobile games revenue. Their combined market share has decreased slightly in recent years, but they are still well ahead of the rest of the pack.

Tencent is the largest gaming company

NOT A MYTH

China-made *Black Myth: Wukong* became one of the quickest selling video games of all time, selling 10 million copies in three days



Source: tweaktown.com

in the world, in part by virtue of it being one of the world's largest internet firms. For its gaming operations, the company historically had a reputation for being a copycat, taking international gaming IP, then reproducing and publishing it.

The company has since published internationally developed games in the Chinese market through licensing deals. It has also seen success with self-developed games such as the mobile Multiplayer Online Battle Arena (MOBA) game *Honor of Kings* (although this is a copy of internationally famous MOBAs *DotA* and *League of Legends* (LoL). Tencent also owns the US publisher of LoL, RIOT Games.

The real key to Tencent's dominance, however, is its investments, such as in the developer that created *Black Myth: Wukong*. "They have acquired or invested in studios and publishers across the world like nobody else over the last half-decade," says Daniel Camilo, a China-based games consultant. "They did so before, but it has really ramped up recently."

NetEase began by producing its own online games as early as 2001, and has released several hit games. But the real breakthrough for the company came when it signed agreements with US-based Blizzard to be the Chinese publisher for a number of games, including the hugely popular massively multiplayer online role-playing game (MMORPG) *World of Warcraft*. The partnership between the two companies ended in 2022, due to disagreements, but has since been reinstated.

"NetEase has a different strategy to Tencent and is fundamentally a gaming company," says Camilo. "Although NetEase has also been investing and making acquisitions outside of China, it is much more active on the development side."

While Tencent and NetEase dominate, there are many other successful developers in the country. These include miHoYo, Perfect World, 37 Interactive Entertainment, iDreamSky, Giant Network and Kingsoft, as well as established internet companies ByteDance and Alibaba.

"These companies also dominate the market through a combination of self-developed titles, strategic partnerships and investments in smaller studios," says van Dreunen.

miHoYo's growth has been of particular note in recent years. The company developed a number of mobile games prior to 2020, to varying levels of success, but with the release that year of *Genshin Impact*, a Japanese-inspired gacha game—a type of game that utilizes loot boxes to encourage in-game spending—miHoYo experienced massive success both at home and internationally.

Leveling up

While the Chinese game market is much like those elsewhere, there are key differences. "Major trends in the Chinese video game market include a mobile-first approach, prevalence of free-to-play models, deep social integration, a developed esports ecosystem, rapid game iteration and increasing AI integration," says van Dreunen. "Compared to international markets, these trends differ in their intensity and speed of adoption, often driven by China's unique regulatory environment and tech ecosystem."

One example of the mobile-first, social integration approach has been a rapid proliferation of mini-games embedded within mobile apps such as Tencent's ubiquitous WeChat. "These games tend to be quite simple, but offer social engagement and easy accessibility through the platforms they are hosted on," says Su. "This access has been a large contributor to China's gaming industry growth."

The rapid growth and acceptance of esports in China are also of note. Professional gaming as a career has been growing in legitimacy in recent years, and the salaries can often be eye-wateringly high. In 2020, LoL professional Yu "JackeyLove" Wenbo joined Chinese team Top Esports, for a rumored signing fee of RMB 480 million ($6.9 million).

Public perception of esports, especially among millennials and younger generations, has become increasingly positive, but there is also a lot of support for the scene from the Chinese government.

"The government has been providing a lot of esports funding to build esports cities and recognize esports as a sport," says Xiaofeng Zeng, Vice President at Asian games market intelligence firm Niko Partners. "Esports players representing China have won medals at the Hangzhou Asian Games and other global events. The huge push from the government, and China's international esports success, will encourage more parents to accept the legitimacy of their children participating in esports."

The widespread availability of cloud infrastructure has also revolutionized the gaming landscape by offering scalable and cost-effective computing resources. As a result, gaming services stand out as one of the fastest-growing sectors for cloud computing in China.

There has also been a lot of talk of AI and its impact on the gaming world, but the changes have mostly been seen in the development of smaller games for younger audiences. "AI hasn't really changed that much for AAA games [games with large budgets released by major developers]," says Alex Xu, Chairman and CEO of game and animation studio MultiMetaverse. "Lots of companies are claiming they see lots of cost savings, but it feels more like the bosses are pushing the narrative, rather than companies truly benefitting from it."

Chinese developers have also increasingly focused on the localization of themes and content., Games such as the role-playing game (RPG) *Wuthering Waves* are heavily centered around Chinese culture. *Black Myth: Wukong* is another example that seems to have produced positive results.

"It has really made a name for itself compared to other big names like *Elden Ring*, *Sekiro* and *the Dark Souls* series," says Daniel Meharry, a 28-year-old from Glasgow. "The world design and gameplay drew me in. The fact that it was developed in China isn't really relevant for me; it's more that it is just a good quality game."

But *Black Myth: Wukong*, as the first AAA game produced in China, is an outlier, and the fundamental building blocks of most China-produced games are still largely drawn from foreign influences.

Gamification of other services has also seen major growth in the Chinese market, with notable examples including ecommerce platforms such as Taobao using virtual personas and AI-led marketing in China to engage with customers. Brands such as Coca-Cola are collaborating with platforms like Tencent Music Entertainment Group to create virtual personas that enable users to immerse themselves in a cyberpunk meta-universe for shopping and entertainment activities.

"Gamification is more pervasive and sophisticated in China compared to many other markets," says van Dreunen. "It is often integrated into daily life through super-apps and widespread mobile adoption."

> **The government has been providing a lot of esports funding to build esports cities and recognize esports as a sport**
>
> Xiaofeng Zeng
> Vice President
> Niko Partners

No cheat codes

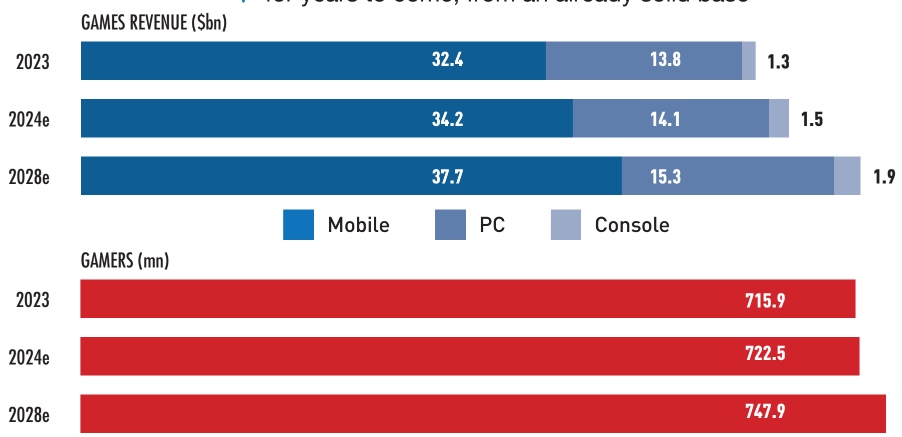
Regulatory barriers have also slowed the development of the Chinese market for years, and although there have been some positive moves recently, there is an unpredictability that may hamper future growth.

"The Chinese government has implemented significant regulations on the video game market, including strict gaming time limits for minors, content approval processes, anti-addiction systems, real-name registration requirements and monetization restrictions," says van Dreunen. "These regulations are more extensive and stringent compared to most other countries, significantly shaping the development and operation of games in China."

Licensing restrictions, in particular, are a key problem. Games published in China go through a licensing and approval process. Over the past few years there has been a slowdown, and several complete halts, in application approvals. But for Xu, recent months have seen a positive trend with regard to licensing approvals.

"Domestic licenses are getting back to normal, and more applications are approved every month," says Xu. "For domestic development, this is encouraging, as it will mean more companies are willing

GAME TIME | China's gaming market is expected to continue expanding for years to come, from an already solid base



Source: tweaktown.com

> Regulations are more extensive and stringent compared to most other countries, significantly shaping the development and operation of games in China
>
> Joost van Dreunen
> CEO
> ALDORA

to put in the time and effort to develop games."

Press X to join

Expanding overseas is now a hot topic for Chinese developers after seeing an increasing number of successes in the international market. Chinese game studios already dominate the global mobile gaming market, capturing 47% of the revenue share worldwide. Of the top 100 global mobile game publishers, 38 are based in China.

"The barriers to going worldwide have gone for a lot of developers," says Xu. " One example is Beijing-based S-GAME, where the leadership was mostly educated in the US and had a large familiarity with Western art styles and trends. Seeing one of their trailers at a recent SONY expo highlights the breakthrough for companies like this, even if they are only small 20-30 person teams."

Handheld: Mobile gaming is a major part of China's video game industry

Chinese companies have also become major players in shaping international gaming trends and practices, with increased investments in game markets in Southeast Asia, India, and other regions. The percentage of Chinese video game-related deals involving overseas companies reached 41.3% and 37.7% in 2022 and 2023, respectively, up from just 10.5% in 2016, according to Niko Partners.

But for international gaming companies looking at the China market, many barriers still remain to be overcome. Regulation limits access, and, as has happened in the past in other industries, foreign firms are required to partner with local video game publishers to publish their games in the country.

"The main barriers are to know what the real needs of gamers and their local cultures are, and then balance it within the bounds of the regulations," says Zeng. "For global game companies to successfully enter the market, they must understand and comply with these layers of regulations. This is the first step to entering the market. Effective game localization is another key success factor in China."

Final boss

Aside from the unpredictable regulatory barriers, the sector is on a clear upward trajectory. Technologically, Chinese video game developers are near the cutting edge and demand in the country is high and growing.

In addition, the proven success of Chinese games internationally, especially now that this has spilled over into the major AAA games with *Black Myth: Wukong*, indicates that massive growth is available.

"We understand live service very well, have proven success with box sale games and we've been doing microtransaction games for years," says Xu. "We, as Chinese developers, have almost unlimited power to unleash in the future. So much more is coming."

Beyond the Bamboo Ceiling

Despite their success in education and entry-level jobs, Asian Americans struggle to reach the top rungs of corporate America. What's holding them back?

By Alan Chen, Assistant Dean for Global Programs, CKGSB
and Mukul Pandya, former Editor-in-Chief of Knowledge @ Wharton

In the offices of Silicon Valley and the skyscrapers of Wall Street, a curious phenomenon persists. With a few exceptions, Asian Americans, long celebrated as academic overachievers and model employees, remain conspicuously absent from the uppermost echelons of corporate leadership. This so-called "bamboo ceiling"—a term coined to describe the barriers faced by Asian Americans in professional advancement—has proven stubbornly resistant to change, even as diversity efforts gain momentum in other areas.

The bamboo ceiling is a complex phenomenon, influenced by both external societal factors and internal community dynamics. Separate research by Prof. Jackson Lu of MIT Sloan School of Management and Alan Chen (Assistant Dean, CKGSB) both shed new light on the cultural, social and psychological factors contributing to Asian American underrepresentation in leadership roles. Our objective is to explore these multifaceted challenges and potential solutions.

The numbers tell a stark tale. Work published in the Harvard Business Review shows that Asian Americans comprise 12% of the professional workforce, yet hold just 5% of executive positions in major corporations. They are the least likely racial group to be promoted into management roles, even in tech companies where they are heavily represented at entry levels.

This disparity is all the more striking given Asian Americans' vaunted academic credentials and work ethic. They are overrepresented at top universities and have the highest median income of any racial group in America. By many metrics, they appear primed for professional success. Yet something seems to stall their ascent to the highest corporate ranks.

The reasons for this disconnect are complex, rooted in cultural differences, unconscious bias, internal community dynamics and systemic barriers. But as diversity becomes an ever more pressing priority for companies, the underrepresentation of Asian Americans in leadership roles is drawing renewed scrutiny. Some see it as the next frontier in the push for more inclusive workplaces. Others argue it reveals fundamental flaws in how corporate America evaluates and promotes talent.

Interestingly, within the Asian American community, those of South Asian (especially Indian) origin have seen notable success in breaking through to CEO roles at several iconic companies. Examples include Satya Nadella at Microsoft, Sundar

East Asian American Leadership Styles: Breaking the Mold

These leaders demonstrate that there's no one-size-fits-all approach to Asian American leadership. They've succeeded by blending cultural strengths with adaptability to American business norms, challenging stereotypes along the way. Their stories provide valuable models for aspiring Asian American leaders and underscore the potential benefits of greater diversity in corporate leadership.

While the bamboo ceiling remains a significant challenge, a new generation of East Asian American leaders is reshaping perceptions, based on their public talks, of what leadership looks like. Here are some notable examples:

Jensen Huang, CEO of Nvidia, is known for his demanding leadership style characterized by high expectations and a relentless pursuit of perfection. Huang emphasizes intellectual honesty, encouraging employees to admit mistakes and learn from them. He believes in a hands-on approach, often engaging directly with employees to provide guidance. Huang advocates for a flat organizational structure to facilitate open communication and quick information flow. He practices inclusivity, ensuring every team member has a voice, which fosters respect and loyalty.

Lisa Su, CEO of AMD, focuses on fostering innovation and strategic decision-making. Under her leadership, AMD has developed influential products like the Ryzen processors, significantly boosting its market share. Su's leadership style is marked by a commitment to technical excellence and a focus on empowering teams to drive technological advancements.

Eric Yuan, CEO of Zoom, has a leadership style that blends Eastern and Western values. Yuan emphasizes customer happiness, humility, and continuous self-improvement. He values self-learners and self-motivators, believing in hiring people with potential who can grow with the company. Yuan's leadership during the pandemic was marked by empathy and adaptability, ensuring Zoom's rapid growth while maintaining user trust and satisfaction.

Tony Xu, CEO of DoorDash, emphasizes a customer-centric approach and operational efficiency. His leadership style is focused on innovation and scaling operations to meet customer needs effectively. Xu has led DoorDash to become a leading player in the food delivery industry, particularly during the pandemic.

Pichai at Google, Shantanu Narayen at Adobe, Arvind Krishna at IBM and Indra Nooyi, former CEO of PepsiCo. This success raises questions about the specific cultural, educational, or social factors that might contribute to their advancement compared to other Asian subgroups. Their experience in breaking through the bamboo ceiling may also offer lessons to other Asian American leaders eager to make the same journey.

Cultural challenges

The influence of Confucian values on East Asian leadership styles cannot be overstated. Research highlights how principles of harmony, respect for authority, and group consensus can conflict with Western leadership expectations of assertiveness and individual initiative.

This, and other, cultural mismatches often manifest in subtle ways. Asian Americans may be less inclined to speak up in meetings, promote their own accomplishments, or challenge superiors—behaviors that can be read as passive or unambitious in American corporate settings.

Raj Gupta, former CEO of Rohm and Haas, provides deeper insight into the cultural adaptation required. "When I was humble, people assumed I was not capable," he recalls. "I had to consciously adapt my communication style to be seen as leadership material. It's about understanding the unwritten rules of American corporate culture, from networking to self-promotion, which often run counter to our upbringing."

Still, Asian Americans who do adopt a more assertive style may face backlash for violating stereotypes. "When I started speaking up more, I was labeled as aggressive," says one female executive in Alan Chen's research. The double bind is particularly acute for Asian American women, who must navigate both racial and gender stereotypes.

Bias in the boardroom

Unconscious bias and outright discrimination also create significant challenges for Asian Americans. Despite being seen as competent and hardworking, Asian Americans are often viewed as lacking leadership qualities like charisma or vision.

A so-called model minority stereotype can pigeonhole Asian Americans into technical roles, overlooking their potential for strategic leadership positions. It may also foster complacency about their underrepresentation in upper management.

More insidious forms of bias also persist. Some Asian Americans report being passed over for client-facing roles or important assignments due to assumptions about their cultural fit or communication skills. Others describe feeling isolated from informal networks and mentorship opportunities crucial for advancement.

The geopolitical climate adds another layer of complexity. Rising tensions between the US and China have fueled suspicion of Chinese Americans in some quarters, potentially hampering their career prospects. "You have to be mindful that your performance is not just a reflection of you, it can be a reflection of the broader race [between US and China]," cautions one executive.

Internal community dynamics

Professor Lu's study reveals a striking contrast between East Asian and South Asian professional networks. While South Asian professionals often form strong, supportive clusters within organizations, East Asian professionals often tend to be more isolated.

This lack of cohesion among East Asians is exacerbated by historical tensions and distrust between different ethnic groups. As one Chinese American executive observed in Alan Chen's research "There's distrust within the Asian community as well, say between Japanese Americans and Korean Americans and Chinese Americans."

Within the South Asian community, caste-based discrimination—actual as well as perceived—can play a role in perpetuating hierarchies and limiting opportunities for some professionals. These internal divisions can hinder collective efforts to advocate for greater representation in leadership roles and mentor the next generation of Asian American leaders.

Systemic barriers

Structural issues in how companies evaluate and promote talent may disadvantage Asian Americans. Traditional leadership pipelines and assessment criteria often favor traits more common in Western cultures, like extraversion and self-promotion.

"The way we define leadership in this country is very much based on white male norms," notes Michael Useem, an emeritus professor of management at the Wharton School of the University of Pennsylvania. "This isn't just about communication styles or assertiveness," he notes. "It's about how we conceptualize leadership itself."

This can lead to Asian Americans being overlooked for leadership roles even when they possess the necessary skills and experience, and Useem suggests that companies need to reevaluate their entire leadership development pipeline, from recruitment to promotion criteria, to address these systemic biases.

The lack of representation in existing leadership also creates a self-perpetuating cycle. Without visible role models or mentors who understand their specific challenges, aspiring Asian American leaders may struggle to envision themselves in top roles or navigate the unwritten rules of advancement.

Research shows that companies with more diverse leadership teams tend to outperform their peers. By failing to cultivate Asian American talent at the highest levels, corporations may be missing out on valuable perspectives and market insights.

The road ahead

Despite these chronic challenges, there are glimmers of progress. A handful of high-profile Asian American CEOs have risen to prominence in recent years, potentially paving the way for others. Some companies are also beginning to recognize the bamboo ceiling as a diversity issue deserving of targeted attention.

Initiatives like mentorship programs, leadership development workshops, and employee resource groups aimed at Asian Americans are gaining traction in some organizations. These efforts aim to provide the networking opportunities, visibility, and skill development that can help bridge the gap to senior leadership.

Companies need to examine their own biases and systems, including critically examining their promotion practices and leadership criteria, rooting out implicit biases that may disadvantage Asian Americans. This involves rethinking traditional definitions of leadership to value a broader range of styles and strengths.

In a September interview with Time, Lisa Su, CEO of Advanced Micro Devices (AMD), offers a striking example of Asian American leadership success in the tech industry. Su, who has led a remarkable turnaround at AMD over the past decade, emphasizes the importance of making strategic bets in technology and fostering key partnerships.

Under her leadership, AMD has significantly expanded its AI capabilities through strategic acquisitions and product development.

Addressing the underrepresentation of women in tech leadership, Su suggests giving talented individuals big opportunities to shine. "My philosophy is that the best way—and it's not just about women, it's about talent in general—is to give great people big opportunities and let them shine," Su told Time. Her success story and approach to leadership and diversity offer valuable insights for aspiring Asian American leaders in the tech industry.

But Asian Americans themselves also need to play a role in pushing for change. They may need to step outside their comfort zones, actively seeking out stretch assignments and visibility. Building strong networks and seeking out mentorship, both within and outside their cultural communities, can provide crucial support and opportunities.

Wayne Ting, CEO of Lime, shares his own experience: "My job responsibility and scope given to me was the Asia market, which makes sense, which I am really good at. But I tried to take on clients from different markets, say European markets or Middle Eastern markets or even the United States." Ting's approach highlights the importance of actively seeking opportunities beyond one's comfort zone or assigned role.

Organizations can support these efforts by creating affinity groups that bring together diverse Asian American professionals and fostering a culture of inclusive mentorship. As one executive advised, "We need to unite as a community. It's through supporting each other and showcasing our collective strengths that we can change perceptions and create more opportunities for leadership."

But these must be coupled with broader cultural change to create truly inclusive environments where diverse leadership styles can thrive.

Prasad Kalyanaraman, Vice President at AWS, stresses the importance of community and strategic positioning. "Strategic posturing is key," he advises. "It's really important for everyone to unite together within the Chinese American community in order to have better recommendations from society." He suggests developing soft skills and leadership presence, on top of network building.

Education also plays a role. Business schools and executive education programs can help by incorporating more diverse perspectives on leadership and providing targeted support for Asian American students navigating career advancement.

Breaking through

Ultimately, cracking the bamboo ceiling is not just a matter of fairness, but of unleashing untapped talent. In an increasingly global and competitive business landscape, companies that can harness the full spectrum of their employees' strengths will have a decisive edge. For corporate America, learning to nurture Asian American leadership talent may be key to staying ahead in the 21st Century.

Implementing these steps requires a

long-term commitment and significant cultural shifts within organizations. However, the potential benefits—including increased innovation, improved decision-making, and access to a broader talent pool—make this investment worthwhile.

Companies that successfully break the bamboo ceiling not only create more equitable workplaces but also position themselves to better understand and serve increasingly diverse markets. In an era of global competition and rapid change, the ability to nurture and leverage diverse talent, including Asian American leaders, may well become a key competitive advantage.

As Stephanie Mehta, CEO of Mansueto Ventures, wrote in the Modern CEO newsletter in April 2024, quoting Bing Chen, co-founder and CEO of Gold House, an Asian American advocacy group, "When traditional systems don't afford consistent opportunities to top talent, top talent will be forced to find another way—and often does. When someone else doesn't want you, you build your own house and hopefully let everyone else in." The challenge now is to ensure that the house has room at the very top for leaders of all backgrounds.

"We have to do more to speak up, have a louder voice, and not be afraid to challenge," says Ting.

A Corporate Checklist

Breaking through the bamboo ceiling requires a multifaceted approach that addresses both external biases and internal community dynamics. By fostering greater cohesion, mentorship, and cross-cultural understanding within Asian American communities, while also challenging societal stereotypes and biases, organizations can create a more inclusive leadership pipeline in corporate America.

For companies serious about dismantling the bamboo ceiling, here is a checklist of specific steps organizations can take to help Asian American high-potential leaders advance into the C-suite:

- **Reassess Leadership Criteria**
  Companies should critically examine their definition of leadership potential. Traditional Western leadership traits like assertiveness and self-promotion may inadvertently disadvantage Asian American candidates. Expand criteria to value diverse leadership styles, including collaborative approaches and quiet strength. This reassessment should permeate all levels of the organization, from entry-level hiring to C-suite promotions.

- **Implement Bias Training**
  Mandatory bias training for all employees, with a specific focus on stereotypes affecting Asian Americans, can help combat unconscious prejudices. This training should cover topics like the model minority myth, cultural differences in communication styles, and the impact of bamboo ceiling stereotypes on career advancement.

- **Establish Mentorship Programs**
  Create formal mentorship programs that pair Asian American high-potentials with senior executives, including non-Asian mentors. These relationships can provide crucial guidance on navigating corporate culture and accessing informal networks. Ensure mentors are trained to understand the unique challenges faced by Asian American professionals.

- **Sponsor High-Visibility Projects**
  Actively assign Asian American employees to high-profile projects and client-facing roles. This exposure can help combat stereotypes about Asian Americans lacking leadership qualities and provide opportunities to demonstrate strategic thinking and interpersonal skills.

- **Develop Tailored Leadership Programs**
  Design leadership development programs specifically addressing the challenges faced by Asian American professionals. These could include modules on executive presence, strategic communication, and navigating cultural differences in the workplace.

- **Create Employee Resource Groups (ERGs)**
  Support the creation and growth of Asian American ERGs. These groups can provide peer support, networking opportunities, and a platform for raising awareness about bamboo ceiling issues within the organization.

- **Set and Track Diversity Goals**
  Establish clear, measurable goals for Asian American representation at all levels of leadership. Regularly track and report on progress, holding senior leadership accountable for achieving these targets.

- **Review Promotion Processes**
  Audit promotion processes for potential biases. Implement structured interview processes and diverse evaluation panels to ensure fair consideration of Asian American candidates for leadership roles.

- **Encourage Cultural Fluency**
  Foster an organizational culture that values cultural fluency. Encourage all employees, especially senior leadership, to develop a deeper understanding of Asian cultures and communication styles.

- **Provide Executive Coaching**
  Offer executive coaching to high-potential Asian American employees. This personalized support can help individuals navigate specific challenges and develop strategies for career advancement.

- **Create Stretch Assignments**
  Deliberately create stretch assignments for Asian American employees that push them out of their comfort zones and allow them to develop and showcase leadership skills.

- **Address Intersectionality**
  Recognize and address the unique challenges faced by Asian American women, who often encounter both racial and gender barriers in their career progression.

- **Partner with External Organizations**
  Collaborate with external organizations focused on Asian American professional development, such as Ascend or the National Association of Asian American Professionals. These partnerships can provide additional resources and networking opportunities.

- **Celebrate Success Stories**
  Actively highlight the achievements and career paths of successful Asian American leaders within the organization. These stories can serve as powerful role models and challenge existing stereotypes.

- **Foster Open Dialogue**
  Create safe spaces for open discussions about the bamboo ceiling and related challenges. Encourage Asian American employees to share their experiences and insights, using this feedback to inform and refine diversity and inclusion strategies.

Taking Off

Kellen Xie, senior vice president of eVTOL aircraft manufacturer Autoflight, discusses the opportunities available for the development of the 'low-altitude economy' and the challenges of developing fully autonomous flying vehicles

Aside from commercial airliners, most people think of transport as a ground-based endeavour. But in the coming years, the development of what is known as the "low-altitude economy" is likely to flip this notion on its head. Development of electrical Vertical Takeoff and Landing (eVTOL) aircraft for passenger and cargo use is already well underway, and they are soon going to be appearing in skies near you.

In this interview, Kellen Xie, senior vice president of eVTOL aircraft manufacturer Autoflight, discusses the need for multiple redundancies in the aircrafts' systems, the flexibility of travel options using eVTOL units and the strict regulatory environments that govern the budding "low-altitude economy."

Q. What are the vehicles and products that you are working on at Autoflight, and what are the company's goals?

A. The class of product that we are working on is called electrical Vertical Takeoff and Landing (eVTOL) aircraft. It is a 100% electric vehicle. It has wings for flying distances, and also has lifting propellors which allows for takeoff and landing without a runway. It being electric also keeps noise levels quite low when compared with more traditional vehicles like helicopters.

We have a passenger version, called Prosperity One, and a version for cargo, called the Carry-All. The cargo version can carry up to around 400kg of payload and fly for over one hour and 20 minutes, and the passenger units can take up to five persons, with a maximum flight range on a single charge of beyond 250km.

Another advantage of this type of aircraft is that it can be, at some point in the future, fully autonomous. The passenger version currently requires a safety pilot due to regulatory requirements, but it is capable of autonomous flight thanks to a number of flight computers and high-accuracy sensors that help with navigation, decision-making and altitude controls.

Q. What do you foresee as the main uses of your technology?

A. Out in the countryside and in areas where the infrastructure isn't that well-developed, both the cargo and passenger vehicles showcase very good potential. In areas where infrastructure is better, for example where there are high-speed trains and highways, etc., then I would say the passenger version is probably more useful for specific trips. It really depends on where you are and what you need. For example, in countries with a more challenging geographical environment, such as islands or mountainous areas, then this type of eVTOL

Kellen Xie is the senior vice president of eVTOL aircraft manufacturer Autoflight.

aircraft can have many more use cases when compared with flat, open terrain.

We are aiming for full autonomy for both versions at some point in the future. The cargo units are already fully autonomous, and will likely not be used within city centers, but more between warehouses in suburban areas or from the mainland to islands, etc. The passenger version requires a much higher safety level and because of that we're likely to continue using safety pilots for at least another five to 10 years.

Q. To what degree do you see the products replacing existing technologies/modes of transport?

A. eVTOL is a very special mode of transportation. It has the capability of getting cargo or passengers from point to point in a very flexible way. For example, if you want to fly from A to B today, but B to C tomorrow, you can absolutely do that, and the more flexible point connections that are built up, the better the opportunities will be. This is unlike the more traditional highways or high-speed trains, which are limited to built infrastructure and fixed destinations. You build a network and then you're stuck with it. With eVTOL, you can utilize different numbers of units on a daily or even single-trip basis, assigning different destinations depending on consumer needs.

Additionally, it offers a different kind of private transportation. It's not like mass transport where you have to be crowded in with other people, it's like a car that has a much wider range of destination options and offers the ability to comfortably travel 150km in less than an hour. This option can be great in major cities, where you can avoid traffic jams and quickly travel during peak times. That can cut journeys that would usually take an hour or two, down to less than ten minutes. This provides an extraordinary experience when compared to ground transportation.

> There are very high regulatory standards in terms of safety for the eVTOL units

Q. To what degree are there regulatory barriers to product development, both in cities as well as other areas of operation, and how does this differ within different regions of China and elsewhere in the world?

A. There are very high regulatory standards in terms of safety for the eVTOL units. We have to prove similar levels of safety as the large air transportation companies, and they are often higher than those for traditional helicopters as the units have to have multiple redundancies. For example, our units have 10 lifting motors, and we have to make sure that if any one of them fails, the machine can still fly, the same goes for things like pushers, flight computers and battery modules, the unit must keep working if a component is to fail. We actually have flight computers designed by different teams in order to make sure any mistakes made are not made twice. There are a lot of safety mechanisms and designs built into the aircraft itself, and these are required to pass the relevant safety certifications.

Q. What are the main practical challenges with developing low-altitude economy products, both manned and unmanned?

A. There are probably fewer challenges with the cargo version than the passenger version, mostly due to human involvement and where they are likely to be operating. But the main difficulty is that it is all quite new. The technology is pure electric, and that hasn't been done before, so actually proving that it meets safety standards and other regulatory requirements can be very challenging. The whole testing process can take years.

Our company was founded in 2017, but the founder and his team have been working on electric aircraft development since 2000. That's a long time of technology accumulation and thousands of tests to even make it to where we are now. It's not something you can do overnight, or copy from anywhere else. It requires a lot of R&D, testing and new iterations to prove that the systems are safe.

When it comes to infrastructure, there are also challenges. In the future we will have to flip our usual transport approach on its head, as the units will be flying above the city. When you leave work, instead of going downstairs to the road or metro system, you will be getting an elevator to the top of the building to get to the landing pad. But there aren't many buildings that have such infrastructure in place already, so getting that together is also a challenge and will take some time. And that will certainly also be subject to strict regulatory measures.

Q. To what degree are you expecting widespread adoption of your vehicles, for both commercial and personal use, and over what timescale?

A. Personally, I would say that during the first 10 years usage is going to be limited to fixed routes. Typical scenarios could be airport to city, airport to airport or suburban area to city center routes. Then, after 10, 15 or 20 years, it will be a lot freer and be able to go from point to point, and you'll be able to call an eVTOL aircraft via an app, like you would a taxi, and it will be able to take you from wherever you are, to wherever you would like to go.

Q. To what extent has Autoflight received government support in the development of its technology?

A. The prioritization of the low-altitude economy is a very wise move, because we really have not utilized the sky above us, for example, 1,000 meters and below, to any major degree yet. The government is now pushing the development and use of drones, eVTOL units and general aviation aircraft to make more use of this space and develop the low-altitude economy.

We have generally received some good support, but I think the support that we need is the opening of more trial routes, so that we can actually utilize our aircraft to run operations and run tests. This will allow us to improve in a lot of areas and will help the industry mature into a safer and more useful sector. I also think that if the general public can see more examples of eVTOL and other aircraft flying around, they will grow to see how safe it can be, and that will develop public trust as well as getting people excited about the future.

Q. What are the plans of Autoflight in terms of fundraising and investment and what are the company's long-term development goals?

A. The current investment environment in China is very encouraging. We just raised a new round of funding and our competitors have also received numerous rounds of financial support as well. In the current economic environment in China, it can be difficult to raise funds, but for this industry in particular we are still seeing very positive outcomes.

Of course, we're striving to be a better company, increase our revenue generation and enlarge our economic scale by providing services to more and more people. The long-term plan is obviously to become a publicly listed company.

Q. Can you elaborate on Autoflight's plans to operate beyond the China market and to what degree will current geopolitical issues hinder this expansion?

A. Our first commercial civil delivery was to Japan, and that has already been done. It was a delivery of pre-certified units that are going to be used to fly at the Osaka Expo in 2025. We're also in talks with numerous consumers from different countries around Asia, and we've done demo flights in the UAE. There is also an Autoflight office in Germany working on European certification as well.

> **There are probably fewer challenges with the cargo version than the passenger version, mostly due to human involvement**

We very much see ourselves as an international company and are determined to develop the international market.

Q. How do you expect the low-altitude economy to develop over the coming five to 10 years?

A. There are quite a lot of different technologies mixed into the low-altitude economy. It is not only the aircraft, that require a wide range of new technologies, but also the infrastructure on the ground, such as depots, dispatching systems, communication systems and tracking management systems.

In the next five to 10 years I expect our sky is going to become quite busy. It will obviously still be under very strict safety controls to make sure that no accidents happen, but it will grow, starting from the use of cargo units in suburban areas, from warehouse to warehouse, and then gradually moving into more urban areas. There will also be a growth in areas for tourism, for aerial sightseeing and things like that.

There are a huge number of possible scenarios for the low-altitude economy and I expect to see these becoming increasingly comprehensive and exciting, with many people starting to benefit from taking part in the sector.

Interview by Patrick Body

HOME TRUTHS

China's real estate market faces myriad issues from rising debts to a lack of demand and the country's leadership are struggling to find workable solutions

By Maria Hsin

As one of the backbones of the Chinese economy, solutions need to be found to issues in the real estate market

Images of idle construction cranes and incomplete high rises have become synonymous with the Chinese real estate market in recent years, as speculation, developers' debt, unfinished or empty homes and dwindling consumer confidence have all taken their toll on the market.

Several of the country's major developers are facing liquidation; local governments are under pressure from the Central government and the market to sort out problems of debt and unfinished development; and housing purchases are at all-time lows. And while the government has tried to take steps to rectify the issue, the Chinese real estate market is still on shaky ground.

"The Evergrande crash at the end of 2021 marked the beginning of the epic collapse in China's housing market," says Larry Hu, Head of China Economics at Macquarie Group.

Changing the locks

China's real estate market experienced unparalleled growth for most of the last two decades, at times making up around a quarter of the country's GDP. Growth was driven by massive urbanization and rapid economic development, and boosted further by big stimulus packages introduced by the government after the Global Financial Crisis in 2008.

Developers were building homes at an incredible pace and prices soared to unsustainable levels, leading to a fall in consumer confidence and massive debts held by developers, local governments and homeowners.

"Generally, the main problems in the past were the unhindered expansion by property developers, which pushed up home prices and result[ed] in a bubble," says Leonard Law, Senior Credit Analyst at Lucror Analytics Singapore. "The expansion was supported by voracious investment demand from buyers—as Chinese investors generally have fewer options to invest their wealth. They were seeking to profit from rising home prices. Local governments also benefited from rising land sales revenue."

In 2017, the government attempted to rein in speculative property purchases with the slogan "Houses are for living in, not for speculation," but its warning went largely unheeded. And in 2020, it introduced the Three Red Lines policy that sought to set limits on debt-asset ratios. While intended to reduce systemic risk, the policy choked off liquidity and set off a chain reaction of defaults, stalled projects and plummeting home sales.

"They were introduced to curtail borrowing by developers," says Law. "That said, it had the unintended consequence of pushing some developers—especially the highly leveraged ones—to hide their debts off the balance sheet."

Unsold, completed homes increased to 391 million square meters in April 2024, up from 227 million square meters in 2021. While pre-sold, under construction and unsold, under construction homes fell from 3,908 and 2,996 million square meters in 2021 to 2,405 and 2,401 million square meters as of April 2024, according to J.P. Morgan.

A number of major real estate developers in China have defaulted on loans, with Evergrande Group, formerly the largest developer in the country, now facing liquidation, a process which started in January 2024. In August 2023, Country Garden Holdings defaulted on interest payments on dollar-denominated debt with a face value of $1 billion, subsequently stating in October of that year that it would be unable to meet all of its offshore debt obligations. A hearing to consider the company's liquidation has been scheduled for January 2025. Other major developers, including Kaisa Group Holdings, have also defaulted on both domestic and offshore bonds. Smaller developers are similarly struggling.

"I would estimate that developers' total offshore debt amounts to around $300 billion in bonds," says Zhaopeng Xing, a senior China strategist at ANZ Research. "The onshore problem is similar, with around ¥3 trillion ($420 billion) in bonds and ¥12 trillion in bank loans. Most of the debts are under restructuring."

But restructuring will be a tortuous process and bondholders and banks are not

> **Given the lessons from the previous easings, the government decided to step in as the buyer of last resort for developers**
>
> Larry Hu
> Head of China Economics
> Macquarie Group

in a good position to recover their debts from the developers. Banks and other creditors may have to accept a very low recovery rate.

"The government is still working hard to push forward home delivery," says Xing. "It wants financial institutions to add support to developers, but there is already so much debt. I don't think banks want to add more support. It's a contradiction. If they want more support from institutions, the first thing is to restructure all debt. After that it will give financial institutions some confidence."

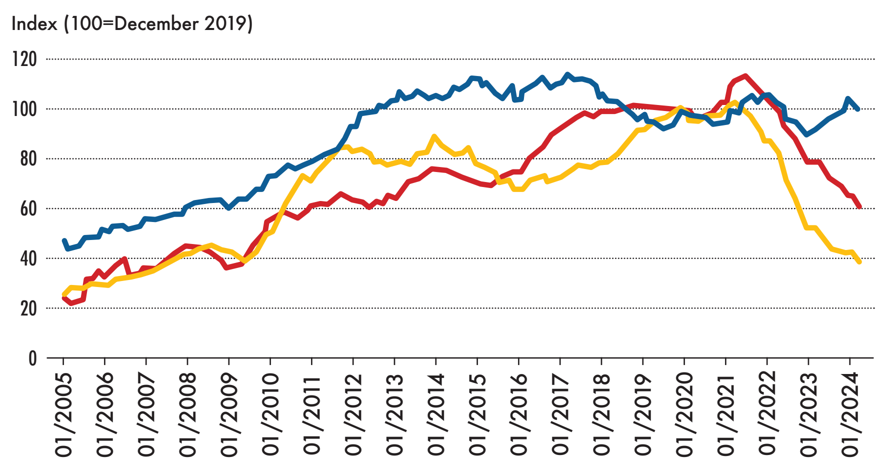
As a result of developers' financial problems, there is now a massive surplus of unsold or unfinished inventory across the country. Low demand for these properties—as well as across the wider economy—means that developers are unlikely to start drawing a significant income from them. An issue exacerbated by China's aging population is sluggish new household formation.

"You have four grandparents being supported by two parents being supported by one millennial," says a China market veteran who wished to remain anonymous. "In the past, everything was the opposite."

There are also regional differences to consider in the current real estate market, as low-tier cities are experiencing greater pain than top-tier cities. "I don't think the current demand can digest all the property in lower-tier cities," Xing said. "It will probably take more than three years to bring the current inventory down to a favorable level."

The crisis has also rippled beyond China's borders, with several ambitious Chinese-backed real estate projects in the US faltering. Greenland USA, a subsidiary of China's state-owned Greenland Group, has defaulted on nearly $350 million in loans tied to the ambitious Pacific Park development in New York. And Oceanwide Plaza, a $1 billion three-tower project in downtown Los Angeles, entered bankruptcy earlier this year, with contractors claiming Oceanwide owes about $400 million to creditors.

A REAL STATE | The past two years have seen a steep drop in sales and new construction projects in China's real estate market



Source: CaixaBank Research

Finding the keys

Fairly drastic policy changes will be required to bring the country's ailing real estate sector back to a stable state. However, the impact of steps taken so far has been mixed at best, with some providing temporary relief and others struggling to gain traction. Between 2022 and April 2024, there were three major changes to policy aimed at easing the issues.

"In 2022, there were aggressive mortgage rate cuts and the issuance of the '16 Measures' document in which policymakers urged financial institutions to lend to developers," says Hu. "The third came in January 2024, with the 'Project Whitelist' which encouraged local governments to recommend eligible housing projects to banks."

Some local governments and major cities have removed the long-standing limits on the purchase of multiple homes, offering subsidies to first-time buyers and cutting local mortgage rates. "The high mortgage rates are a big problem, and while cities like Guangzhou and Foshan have cut them to 3% in recent months, that probably isn't enough," says Xing.

But the largest central government policy announcements came in May, which included the establishment of a fund to help local governments purchase unfinished and unsold homes lying empty within their jurisdictions. But there has been a very slow uptake on the funds, with banks clearly unwilling to lend out money with such risks attached.

"Given the lessons from the previous

easings, the government decided to step in as the buyer of last resort for developers, funded by the PBoC and local government special bonds," Hu said. "By doing so, the government can help fill the gap left by pessimistic homebuyers. Meanwhile, it can also provide liquidity to cash-strapped developers who are forced to conduct fire sales."

There may be some reluctance on the part of local governments and banks to disburse the funds, in that purchasing these unsold or unfinished apartments then raises the question of what you do with them. Who is going to buy them and at what price? If they are sold by the local governments at anything less than current market rates, then it could pull down property values, compounding all sorts of problems.

This approach has echoes of the Troubled Asset Relief Program (TARP) that was implemented in the U.S. to help bail out the banks after the 2008 financial crisis, but the China plan is significantly smaller in size—representing just 0.4% of GDP, rather than the 5% for TARP—and is less clear in its implementation.

"Policymakers do have the option to expand it in the future, but the bigger questions arise around implementation, given that Beijing is delegating the asset acquisition to local governments and SOEs," says Hu.

As is often the case in China, transparency regarding the process and source of the money is also an issue. "Fiscal spending is not very transparent in China and the question is always, 'Where does the money come from?'" says Xing. "Many local governments are already having fiscal problems."

But Xing also added that the May policy marks a milestone in the rescue of the property market. "In China, dealing with a crisis usually has three stages," he says. "The first is to stop the crisis with market funds, the second is to stop the crisis with fiscal money, the third is to stop it with funds from the central bank (PBoC). We're now in the second stage."

Addressing the issue

While there have been several individual bank bailouts, notably absent from China's playbook has been any large-scale bailout of developers or a "bad bank" approach to absorb toxic assets. The government's reluctance to pursue more aggressive solutions has left many companies in a state of limbo, neither fully operational nor officially bankrupt. A structured bankruptcy process, similar to the US Chapter 11, could allow viable companies to restructure while providing clarity for creditors.

Efforts to attract foreign investment to the troubled sector have also fallen flat. "I don't see many opportunities because they are not cheap enough," says an industry expert. The combination of political risk, currency controls, and still-high valuations in prime markets has kept most foreign investors on the sidelines.

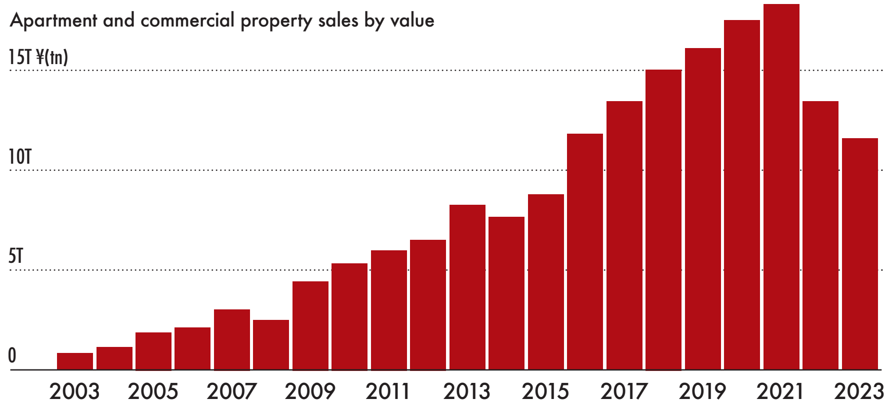
In addition, attempts to boost demand through non-financial means, such as easing residency requirements in some cities, have had limited impact given the broader economic uncertainties and shifting demographic trends. Urbanization focused on developing smaller cities and towns could help absorb excess housing inventory. This would require coordinated policies on *hukou* reform, infrastructure development and industrial relocation.

Other solutions that have been suggested could include a large-scale program to upgrade existing housing stock for energy efficiency which could stimulate the construction sector while addressing environmental goals. Converting some excess residential inventory into elder care facilities could address both the real estate glut and the growing demand for senior housing.

Open doors?

Despite the difficulties in the property sector, it is not necessarily all doom and

SLUMPING SALES | The total value of apartment and commercial property sales has slumped from a 2021 high



Source: visualcapitalist.com

> I don't think the current demand can digest all the property in lower-tier cities
>
> Zhaopeng Xing
> Senior China Strategist
> ANZ Research

Incomplete: There are high numbers of unfinished and unsold homes in China

gloom for businesses. Given the struggles faced by domestic developers, there are perhaps areas where Western firms could seek to enter the market, although these would be very high-risk. "While the current climate presents significant challenges, opportunities exist for those with patience, local knowledge and risk appetite," says the industry expert.

There are small opportunities for Western developers in areas such as upscaling existing real estate stock with smart or green tech, logistics facilities and data centers, high-end rental properties and some educational and healthcare facilities. However careful due diligence and realistic pricing expectations are crucial.

Partnering with SOEs could also provide Western firms with a safer entry point into the market, but again, the risks are quite high. Some SOEs like Poly, China Overseas Land and China Resources Land remain relatively stable, but it is hard to tell how long this will last.

But the key to attracting more foreign investment lies in shoring up the market for all investors and developers.

In addition to the general moribund nature of the market, other matters for Western firms to keep in mind include the regulatory uncertainty in China and the growing geopolitical tensions between China and the West.

"Cultural understanding and strong local partnerships are crucial," says the industry expert. "Many Western firms that previously ventured into Chinese real estate have struggled due to misaligned expectations or difficulties navigating the local business environment."

"Any Western involvement in China's real estate market will require a long-term perspective," they added. "Recovery is likely to be gradual and uneven. However, for those with patience and resources, the current crisis could present a once-in-a-generation opportunity to establish a foothold in one of the world's largest real estate markets."

> **Fiscal spending is not very transparent in China and the question is always, 'Where does the money come from?'**
>
> Zhaopeng Xing
> Senior China Strategist
> ANZ Research

Build back better

Ten years ago, people presumed the China property market bubble was ironclad and would not pop, and that has clearly not been the case. What the future holds for the real estate sector is unclear, but what is clear is that it will not be a return to the exponential borrowing and expansion of the past.

The demographic crisis is lurking in the shadows, but the main problem right now is that the whole system is not conducive to a fundamental market correction. In order to solve the problem, a replacement for land sales as a means of local government financing needs to be found. In theory, this could be a property tax, but years of faltering attempts at introducing such a levy mean it is hard to see happening.

It is evident that China's real estate woes present quite a puzzle to solve and will persist for some time. Many major Chinese developers remain in technical bankruptcy, and it is unclear how their massive debts will ever be repaid. The government seems unwilling to pursue an aggressive bailout, instead opting for a slow-motion solution that could drag on for years.

"Overall, I believe the Chinese government is capable of managing the downturn and has been trying to address the problems," says Law. "The end goal is to have the property market become more stable (by not returning to the high turnover business model of the past), more financially resilient (by reforming the pre-sales model and tax system) and to meet society's need for affordable housing. That said, this is not an easy task and would take at least five to 10 years to realize."

Optional to Mandatory: How is digital transformation creating a wave of change?

Digital transformation has become a top strategic priority for many organizations, but it presents a series of challenges for most enterprises

By Li Haitao, Dean and Dean's Distinguished Chair Professor of Finance at CKGSB

Great companies need to keep up with the times, and digital transformation is undoubtedly a key step in doing so. Maintaining an emphasis on business intelligence, digitization and low carbonization in future development strategies will promote innovation and the upgrading of countries' industry and core competitiveness.

But to be successful, business leaders need to take into account the unique context of their enterprises, formulate a clear vision and strategy, assess each link in the business chain and continuously improve management efficiency and scientific decision-making.

Entrepreneurs must be able to define where each decision, if made, would take the company. Without a clear answer, they could risk undertaking a digital transformation just because they think they should, rather than with a specific purpose in mind. This is where a business leader's vision and strategic planning skills come in.

At its core, digital transformation is about utilizing key data to improve the efficiency and competitiveness of a business. This includes product demand forecasts, customer preferences, production management and financial monitoring. By understanding the data, organizations can make smarter decisions, ensure product quality and customer satisfaction and maintain financial health.

With traditional technologies, access to information is slow and insufficiently detailed. Digital transformation enables the rapid collection of highly detailed information by leveraging IT and the industrial internet, allowing companies to make timely and informed decisions through the use of artificial intelligence (AI) and algorithms.

But digital transformation is often not easy, and applying a digital mindset to traditional corporate culture is a process that requires helping employees adapt to new ways of working. They must understand how to use and integrate technology, update infrastructure, assess data security and meet new demands, as well as ensure system interoperability. It also requires dealing with the collection, storage, and analysis of large amounts of data, while addressing privacy protection, regulatory compliance and the complexity of multinational operations.

Leaders need to make difficult decisions regarding resource allocation and organizational structure when integrating digital transformation into their business strategies. Competent change management and decision-making are key to thinking clearly about the future and unifying the organizational mindset to face the possibility of failures and challenges.

A leader's top priority

In terms of the changes required by business leadership to help adapt to the new environment, vision and strategy come first as they provide a clear direction for the business. Vision defines what the business wants to be, and strategy determines how to achieve that goal.

For example, Wal-Mart introduced the slogan "Everyday low price," to provide customers with the lowest price alongside the best quality service. The company underwent a digital transformation, as a tool to achieve goals within this framework, and now uses technologies such as inventory management systems to increase efficiency and reduce waste.

Beyond vision and strategy, a business leader's motivation is key to realizing digital transformation goals. The process requires a willingness to build complex systems to overcome challenges of internal culture, infrastructure and privacy risks.

Furthermore, leaders need to promote openness, flexibility, and innovation when driving cultural change to a point where failure can be tolerated and new ideas encouraged. They should be champions of change, actively supporting it by inspiring employees to engage in digital transformation, experimenting with new ideas and promoting cross-functional collaboration. They also need to decide where to invest and provide adequate resources for the process, including technology infrastructure, talent development and the adoption and innovation of new technologies.

Change should also be continuous, to improve management efficiency and decision-making, and allow the enterprise to run more efficiently. The key steps include building organizational culture, establishing infrastructure and practically applying data. At the same time, in the face of security threats and risks, we need to recognize that technological innovation has positive and negative effects, and therefore pay attention to defensive measures, such as safeguarding customer privacy and data security.

Optimized decision-making starts with a clear understanding of the logic of a business. While it is possible to optimize decision-making with AI, entrepreneurs must think deeply about the core mission and unique aspects of their organization, and base their use of AI on these principles.

Assessing each link

Each link in the chain of doing business has a specific purpose, and it is important to assess each part of the process to ensure a more fluid digital transformation.

• *Real-time access to comprehensive information is critical for making decisions at each of the links in the chain.*

Information on sales, purchases and profitability allows for faster, more flexible decision-making than the quarterly reports of the past. In digital transformation, assessing the business' current state and identifying opportunities are important steps, and can include analyzing business conditions, technology, infrastructure, the competitive environment, market demand, internal processes, technology systems, and employee skills. This comprehensive assessment helps identify opportunities and challenges and provides strong support for subsequent steps.

• *Enterprises need to carefully assess the extent to which inputs and outputs match at each stage of digital transformation.*

A key issue is understanding the impact of digital transformation on the state of a business and its bottom line. Collecting real-time customer information and having a comprehensive understanding of the current situation is fundamental to developing an effective strategy. Organizations should tailor their digital transformation programs to focus on improving the quality and richness of data collection at every step to maximize their contribution.

• *Ensure effective communication with stakeholders, including employees, customers, partners and investors.*

Stakeholders' understanding and support are critical to the success of digital transformation. For internal stakeholders in particular, there needs to be effective communication and engagement. Digital transformation is not just about technology and system changes, it also needs to involve a balance of interests and an understanding of the ins and outs of an organization.

• *Increased transparency may expose problems in areas such as sales.*

These issues require organizations to adopt flexible project management methods and increase agility. Through gradual experimentation and iteration, companies can implement changes on a small scale, identify any issues and make timely adjustments. This helps them cope with problems such as information leakage and partner changes. It is also better suited to digital transformation's uncertainty and complexity, helps gain internal and external stakeholders' consensus and increases the transformation's chances of success.

• *Trial, error and rapid iteration are very important practices in digital transformation.*

Each enterprise has unique situations and challenges where it needs to flexibly adjust its strategy accordingly. Through small-scale trials and rapid iterations, enterprises can identify problems and adjust promptly, avoiding the large-scale input of mistakes that may arise. Digital

> **Leaders need to promote openness, flexibility and innovation when driving cultural change to a point where failure can be tolerated and new ideas encouraged**

transformation is an iterative process, and as technologies and environments continue to change, organizations need to continually adjust and improve their digital strategies. This understanding is critical for organizations to maintain flexibility and agility in digital transformation.

What do successful companies do right?

As a leader in the e-commerce industry, Amazon has made significant progress in customer experience, logistics optimization and artificial intelligence application through continuous technological innovation and optimization. Its Amazon Cloud Technology (AWS) has also become a leader in the market.

Disney has demonstrated digital transformation success in the entertainment industry by utilizing digital technology to expand the distribution of their content, including a successful launch in streaming services.

Starbucks not only focuses on technology and architecture, but also strives to foster agile innovation for employees to bring change. It is now a strong digital innovation organization, with a mobile app for customers that supports remote ordering, a membership points program, payment systems and internal systems that utilize AI for labor allocation and inventory management.

Wal-Mart has invested heavily in digital transformation to improve supply chain efficiency, enable smart inventory management and provide a better online shopping experience.

Similarly, many Chinese companies have excelled in digitalization, especially some platforms that have directly adopted digital technology, such as Jitterbug. These platforms adopt digital strategies at the initial stage, enabling companies to understand real-time user preferences and feedback and quickly adjust their products and services. Chinese companies' advantages in digitalization are mainly reflected in the context of the Internet. Through platforms such as Taobao, Tmall and JD.com, companies can understand the real-time market performance of their products and adjust quickly, which is not possible for traditional brick-and-mortar department stores.

> **From lights-out, unmanned factories to highly automated and intelligent production in areas such as new energy vehicles and photovoltaics, Chinese enterprises are moving toward an intelligent future**

Against the backdrop of a huge market, Chinese companies are motivated to digitally transform themselves, especially in the manufacturing sector. Industry 4.0 and the Industrial Internet of Things (IIoT) have been put forward to help drive digital transformation and improve productivity. Through IIoT digital management systems, enterprises have realized efficient supply chains and intelligent inventory management, improving production efficiency and product quality. This kind of digitalized production helps maintain international competitiveness and promotes the sustainable development of the economy.

From lights-out, unmanned factories to highly automated and intelligent production in areas such as new energy vehicles and photovoltaics, Chinese enterprises are moving toward an intelligent future, especially in the mid- and high-end sectors where increased digitization has already had a significant effect. The emphasis on intelligence, digitalization and decarbonization in China's future development strategy will further drive innovation and upgrading in the manufacturing sector.

Companies need to keep up with the times

One of the biggest trends of the future will be a high degree of intelligence and automation in production. Robotics and artificial intelligence have already emerged as major players in the manufacturing industry. Tesla's robotic image and Boston Dynamics' robotics demonstrations show what the future of manufacturing could look like. As robots become more intelligent and automated, production will become less dependent on human labor, a core aspect of competition.

Future changes in society will bring great material abundance, but we may also face some problems in this process. I believe that entrepreneurs will face greater challenges in this era. It's a tough task to create a great business and an even tougher one to keep it alive for a long time. Businesses must keep up with the times, as the environment, regulations, supervision, customer preferences, etc., constantly change. Digital transformation is key, but it is important to not adopt technology blindly.

Business leaders need to have a deep understanding of their goals and vision. If it's just about making money, one may choose to give up. The difference between a great entrepreneur and an ordinary one lies in the size of their vision and dream. If one has a strong vision, one will be motivated to overcome difficulties, pursue the dream of 100 years of business, seize opportunities, and realize lasting success.

Translated into English from the article "可选到必选，数字化转型如何掀起变革浪潮?" originially published by the Harvard Business Review Chinese Edition.

Conserving Energy

Xu Xiaoju, co-founder of Yinghe Technology and founder and CEO of CESC, discusses the developmental challenges facing the energy storage sector and how to address consumer concerns over affordability

Green energy generation and energy storage solutions have seen a rapid growth in quality in recent years, as popularity and demand rise around the world. Chinese firms are at the cutting edge of the industry, and Yinghe Technology has been at the heart of the improvement, producing the battery-making equipment used by new energy giants such as Tesla, LG Group, BYD and CATL. While batteries are becoming increasingly commonplace in EVs worldwide, there is now an increase in companies offering integrated power generation and storage solutions for residential and industrial purposes and allowing users to save money on energy supply and sell excess back to the grid.

CESC is one such company offering integrated solutions both in China and around the world, and in this interview, Xu Xiaoju, co-founder of Yinghe Technology and founder and CEO of CESC, discusses the need for greater consumer education on battery quality, the increasing focus from industry participants on improving battery safety and the future industry trends.

Q. To what degree are Chinese firms at the cutting edge of EV battery and other energy storage technologies?

A. Chinese battery and energy storage technologies are definitely world-leading. Firstly, over the last 20 years, China has put a lot of effort into the electric vehicle (EV) and new energy industry, promoting the development of supply chains and sourcing of raw materials. There have been two decades of aggregation and the whole industry has grown a lot. The second reason is down to the diversity of applications for the technology, meaning that developments in one area can provide benefits to others.

Q. What are the main developmental challenges the sector is currently facing?

A. There are three different difficulties or challenges that the energy industry is facing. On the technology side, even though we have seen massive advances in energy storage over the years, there is still a need for more improvement, particularly when it comes to things like safety.

China now has some of, if not the best, technology, infrastructure and products on offer, but the second issue is working out how to spread this better into the global markets. There isn't a huge amount of Chinese companies that have been very successful in their globalization, and improving this will help spread the technology further.

Thirdly, consumer education is lacking at the moment. We have so many energy storage companies in China and there is a range in the quality of their products, whether that be in terms of actual storage or safety, and this makes it hard for the end user to understand what a so-called good product is. This has created a challenge for the whole market, and once solved should also lead to a general improvement in quality across the board.

Q. What approaches are you, and others in the industry, taking to solve these challenges?

A. Technology-wise, the industry is particularly focused on research and development aimed at improving the safety of the batteries, especially the newer types of batteries. We have lithium-ion batteries that are more common now, but there is still work to be done on making them safer. There are other companies that are developing new technologies as well, but they perhaps haven't been commercialized just yet, but that is a matter of time.

In terms of globalizing China's technologies, we have seen a growing number of Chinese companies trying to go overseas and do business around the world. They're often doing this through establishing links with local companies in their target markets which can help both with technology and selling the product.

But when it comes to educating the consumer base, there hasn't really been a good answer for that yet. It is likely something that will come with time. We have more EVs out in the market now, for example, and as long as we have a growing number of products and big brand names become more familiar, the users will ultimately become more familiar with the products. It's a long-term process.

Q. For CESC, who are your target consumers and to what degree does this differ from other energy storage solution providers?

A. What we offer as a product are integrated energy storage solutions. The easiest way to think about it is as a giant power bank that comes with a solar panel to charge it. For residential customers, it would be a smaller size than the larger ones used in industry. We are targeting both B2B and B2C segments.

However, the main goal is to provide high-quality products that help the consumer with solving issues. For residential consumers, we are targeting users who are trying to have a better-stabilized electricity supply at home. Not only do they generate electricity from the solar panels, but they can also store that power in the batteries and then sell any excess back to the grid. There are also use cases in countries that have a less consistent power supply, so the users there can generate their own electricity and store it safely for use when needed.

On the commercial and industrial end, the target users vary between restaurants, factories and hotels, basically wherever there is a need to use a lot of electricity. If they have the integrated solar energy system, not only can they have a positive environmental impact, they can also save quite a lot of money on their power supply, and should eventually make a profit on the product. Beyond residential, commercial, and industrial applications, our offerings also extend to utility-scale solutions, which fall into the B2B or Business to Government (B2G) category.

Q. To what degree is affordability a concern for consumers?

A. It's best to think about it as an investment that will pay off over time, but consumers are naturally interested in how long it actually takes to break even or start making a profit. There are two key things to consider here, the first is that in pretty much every country around the world, governments are promoting the use of new energy and better energy storage, so there are often subsidies available, especially when it comes to industry.

Secondly, the rate at which people can expect a return on their investment, through energy saving or selling energy back to the grid, can vary from country to country and by product. For example, in China, in certain areas it might only take three to five years to make the investment worth it, while in other areas it might be between six and seven years. But one thing that can be guaranteed is that within the current average battery life, which is around 10 years, consumers will see their investment pay off. Overall, the average is about seven years, but that isn't a concrete number as there are a number of external factors that can affect it.

The other thing we consider from a business point of view is that it's vitally important to both increase the adoption of green energy across the world and provide people with reliable electricity in places where it may not be readily available. Both of these aspects are meaningful to me as part of the fundamental driving force behind the business, but value for money for our customers is also a priority.

Xu Xiaoju is the co-founder of lithium-ion and power automated production equipment manufacturer Yinghe Technology and the founder and CEO of CESC, an integrated energy storage solution provider for residential, commercial, industrial and utility purposes.

China now has some of, if not the best, technology, infrastructure and products on offer

Storage: An example of a utility-scale installation of CESC's storage solutions

Q. To what extent are sanctions and geopolitical tensions factoring into your current business strategies?

A. Geopolitical factors definitely matter. We're currently expanding our business into the European, North and South American and African markets and it still feels like there is a welcoming attitude and market need in many places. Some places are easier and harder than others, but that just requires us to explore different solutions for the different markets.

> We have seen a growing number of Chinese companies trying to go overseas and do business around the world

Q. As a female entrepreneur in a sector that has been largely dominated by men, to what degree has this provided advantages and challenges for you?

A. I was very glad that I was born in China, as I find the overall business environment here is quite supportive of female entrepreneurs. Over the past 20 years of business experience, I haven't personally found many of the challenges stemming from my being a woman. I also think we have some advantages in our natural communication abilities and our ability to endure difficulties. Any business is fraught with difficulties that need to be faced, and handling those requires solid communication skills to bring teams together and attract talent.

Q. How do you see the trends progressing in the energy storage industry over the next five to 10 years?

A. One of the main trends over the coming years will be an increase in product safety. Batteries are currently made using chemicals and in some cases those chemicals might not be particularly stable, so increasing our ability to keep them safe and efficient is something that a lot of companies are working towards. This is also necessary to help with public perception and consumer buy-in.

Secondly, solar energy is the most abundant energy source in the world and is something that we need to utilize more in order to help deal with global warming, so I expect to see these types of solar energy applications become increasingly popular with the support of energy storage applications.

Interview by Patrick Body

TAILORED TECHNOLOGIES

Transsion has seen success in African markets due to its tailoring of products, and the company is hoping the approach works elsewhere in the world

By Patrick Body

Transsion has taken a multi-brand approach to multiple price-points in each market that it operates in

The sky at the opening ceremony for this year's African Cup of Nations was filled with the first-ever choreographed drone show on the African continent. At points throughout the performance, the luminous drones shifted into formation, spelling out TECNO, the sponsor of the event and one of the three mobile phone brands that occupy almost half of the African market.

All three brands are owned by Transsion Holdings, the fourth biggest phone manufacturer in the world and a company that has been the guiding force in developing feature and smartphones designed to suit the growing African market over the past decade and more.

Now that the company has cemented itself in markets across the continent, it is looking to expand its global reach further. But rising competition, the growing digitalization of manufacturing and a dearth of owned patents, all pose challenges to Transsion's continued expansion.

"What made Transsion unique was its three-brand strategy that catered to multiple consumer segments," says Ramazan Yavuz, EMEA Director at market intelligence firm IDC. "This strategy, along with the creation of products designed for local demand allowed them to rise up the global ranks of mobile phone manufacturers."

Dialing in

Shenzhen-based smartphone manufacturer and ancillary services provider, Transsion Holdings, was founded in 2006 by Zhu Zhaojiang as Tecno Telecom Limited. After rebranding to Transsion in 2013, the company listed on the Shanghai Stock Exchange's STAR Market—the science and technology innovation-focused arm of the bourse—in 2019. As of August 2024, Transsion was worth ¥83.38 billion ($11.61 billion) and, according to IDC data, Transsion shipped 28.2 million smartphones in Q4 2023, making it the world's fourth largest seller, up 68.6% year-on-year.

While much of its manufacturing and R&D takes place in China, the company operates primarily in markets across the Global South under its subsidiary brands TECNO, iTel and Infinix. Across the three brands, Transsion offers a notably large selection of products, with models available for a range of different price points and with tailored features such as extended battery life in areas with less consistent electricity access and improved camera functionality for consumers with darker skin tones.

Transsion also owns and operates brands that extend beyond the handset market. Oraimo specializes in smartphone accessories such as power banks, chargers and headphones, Syinix is a consumer electronics play, and Carlcare, which is akin to Apple Care, provides dedicated after-sales services for the three handset brands.

"The products are mostly produced in Shenzhen, but they are completely designed for Africa and other target markets," says Tao Zhigang, Professor of Economics and Strategy at CKGSB. "They have also been quick to move into different areas such as foundations of mobile services and complementary charging technologies."

The company has also branched out into the software space, with its music app Boomplay. "Transsion hasn't just developed its hardware offerings, but also its software," says Seyram Avle, associate professor of Global Digital Media at the University of Massachusetts, Amherst, Global Horizons Senior Fellow, Swedish Collegium for Advanced Study and former visiting fellow at the Harvard Center for African Studies. "Boomplay has become a well-used music app across the African continent after Transsion signed multiple deals with record companies to build up a large catalogue of music of African origin."

Africa was the company's first major play, starting in 2008, and the company now holds a majority share of the mobile handset market in many of the continent's 54 countries. According to Canalys, Transsion controlled 48% of the African market in Q3 2023, shipping 8.6 million smartphones, well above second-place Samsung at 26%.

More recently, the company has begun expanding into other markets across the globe, including several in Latin America and a number across Asia, ranging from

India to Indonesia. According to IDC, in 2023, around 50% of Transsion's operations were located in the Middle East and Africa, with 30% in APAC, 10% in Latin America and between 9-10% in Central and Eastern Europe. This is a marked change from 2015, where 88% of operations were in Africa and the Middle East and just 12% were in APAC.

"What we are seeing is a company that grew in Africa and is now expanding to all regions across the world," says Yavuz. "After the point where they were successful in Africa they next targeted the Indian subcontinent, where they opened up local assembly companies and saw some strong growth, and right now they are growing in APAC and Latin America. But there aren't any real signs of the company targeting markets in Western Europe, the US, Canada or Japan."

Quality connection

The company has utilized several winning strategies to cement its dominance across Africa. One such strategy was to develop the company's products under three distinct brand marquees. "Consumers knew about TECNO, iTel and Infinix as separate entities, but they do not really associate them with each other," says Avle. "This helps them promote competition in the market, but also keeps it within the company to some degree."

The segmentation also allowed them to provide products across each cost segment. iTel focuses on the low-end more affordable handsets, TECNO on the low- to mid-end segments and Infinix on the higher-end \$200-\$400 segments to compete with larger manufacturers such as Xiaomi, Samsung and Apple. At the same time, each brand still offers handsets for less than \$100 to provide some level of affordability.

"The pricing was very suitable for African consumers at a time when the global brands were too expensive for those with a low income but a desire for a smartphone," says Yavuz. "Also, because the company had time in a relatively niche market, they were able to establish a solid distribution strategy across big cities and rural areas. This helped gain brand awareness and reach a wider consumer base."

> **The pricing was very suitable for African consumers at a time when the global brands were too expensive for those with a low income**
>
> Ramazan Yavuz
> EMEA Director
> IDC

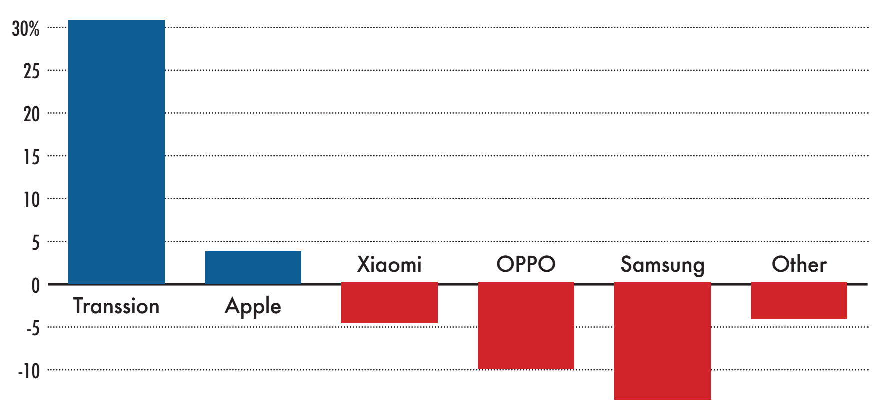
It is important to understand that the African market demand is still split down the middle between feature phones—a cellphone that contains a fixed set of functions beyond voice calling and text messaging but is not as extensive as a smartphone—and the more modern smartphones. Acknowledging this was part of Transsion's tailoring of products to market needs, something it did on a country-by-country level.

Progressing from there, the company sought to react to specific market needs and add features as required by their target demographics. For example, they were one of the first companies to offer the Amharic alphabet on the mobile phones produced in their Ethiopian factory. As a result of this approach, Transsion has offered, at times, up to 50 different handsets at once—a number far higher than the average on offer from competitors such as Apple, Huawei and Samsung, whose offerings tend to number in the low-to-middle single digits.

A particularly in-demand feature has been improved camera quality, with technology that better responds to the darker skin tones of the African consumer base. Africa is currently the youngest continent in the world, and providing cameras that help with reflecting darker complexions at night or in environments with little light emphasizes the appeal of Transsion phones

SHIPPING SMART

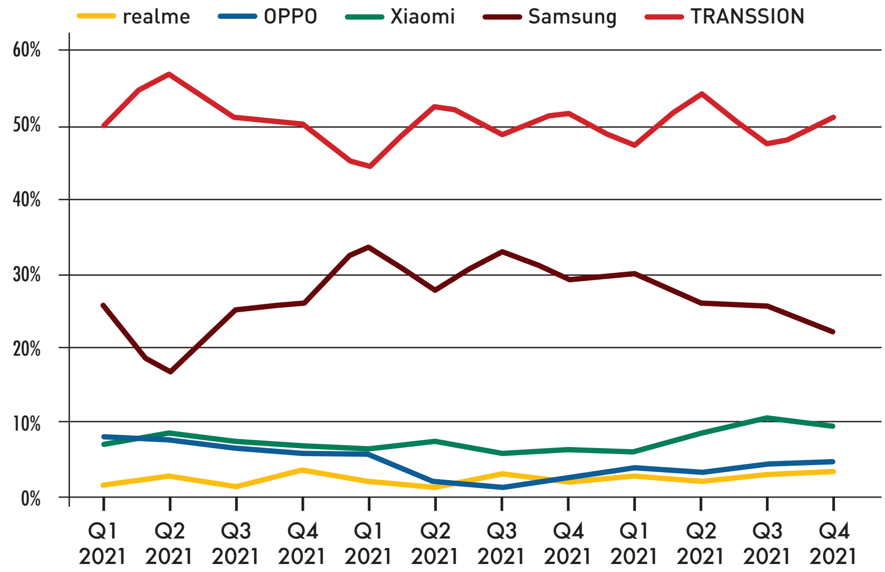
Transsion's smartphone shipment growth between 2022 and 2023 dwarfed those of other major smartphone brands



Source: IDC

MAJOR MARKET

Transsion has a dominant market share in Africa thanks to its tailored products and multi-brand approach



Source: Canalys

in the younger 'selfie generations,' as well as older consumers.

"The company conducted research to find out what its consumers wanted and acted accordingly," says Avle. "For example, the demand for better cameras came in part from studies they did with young people in African cities, particularly those that use social media often."

Tecno's CAMON series—short for 'camera monster'—Infinix's S selfie series and iTel's S Brand are all focused on increased camera quality, particularly in the front-facing cameras of their products, and prices range from $60 to $250 for higher-end products.

Another tailored feature provides better quality battery life in markets with varying levels of access to, and reliability of, electrification sources. As with camera quality, there is a diverse range of models on sale with varying battery sizes for those who need to prioritize battery life over other types of functionality.

Transsion also offers handsets with multiple SIM card slots to help consumers better utilize the large number of telecommunications service providers on the continent. "Every country in Africa has many operators," said Qiu Yusheng, Transsion's former Head of Investment. "These operators have different strengths and weaknesses in signal coverage in different regions, meaning users often need to use several SIM cards to ensure signal when calling from different places."

But the company went further, and in cooperation with Amazon, it has built up its cloud service offerings to reduce the need for multiple SIMs. "We have customized technology for mobile phone chip manufacturers to hide all SIM cards behind the cloud," said Qiu. "As long as a Transsion mobile phone user can connect to the internet, even if there is no SIM card in the phone, the software-as-a-service (SaaS) platform can locate one and automatically develop a plan with the strongest signal and cheapest tariff for the customer."

Transsion is also supplementing its offerings through its other subsidiaries. Accessories brand Oraimo, for example, offers a range of battery-related products, from handheld power banks to portable solar generators and home energy storage systems. For example, the PowerSolar 38 solar home lighting system provides portable solar-powered tube lights and three charging ports for phone handsets.

Transsion has also utilized a targeted approach to the needs of new markets. The company's initial foray into India, for example, was led by iTel, strategically targeting the lowest price segment in Tier-2 and Tier-3 cities and consumers that either couldn't afford or didn't perceive a need for a smartphone. It has also developed unique features like oil-resistant fingerprint recognition in nations like India where it has grown as an increasingly competitive player.

Carlcare, Transsion's dedicated after-sales care service, has also proved popular with consumers and is useful for maintaining customer satisfaction rates. It is also a useful tool when it comes to entering new markets, as it acts as an easily replicable core competency for the company.

"Product repair has always been important but Carlcare was innovative and new in Africa," says Avle. "That sort of soft service is easily replicable in other markets, and they have introduced it in Indonesia already. There is more competition in these newer markets, so this is something that can help set them apart."

Transsion's presence in the manufacturing and technology innovation hub of Shenzhen has helped with the company's diverse range of products, allowing for quick and efficient iteration based on consumer needs. "It is a perfect example of utilizing the supply chain in China to provide products for elsewhere," says Tao.

The company also has manufacturers and designers located closer to its target markets, such as its manufacturing plant in Ethiopia and design and user interface personnel in Kenya and Nigeria.

Signal problems

Transsions growth has been impressive, but changes in the global tech environment, legal issues and increasing competition, both local and international, mean that the company faces challenges to take steps to keep up.

Competition is fierce and that results in two key considerations. Global economic conditions mean that vendors have to care about profitability more than ever, and maintaining costs at an affordable level is a challenge for all manufacturers. At the same time, advanced technologies are the key difference maker right now, whether that be through the inclusion of AI or the use of cutting-edge chips.

"Whatever market segment or country you are aiming at, you have to be a technologically advanced company to survive," says Yavuz. "In this respect, brands like Samsung and Xiaomi have better resources to draw on globally, so Transsion has to invest to keep up while maintaining appropriate price points for consumers and for generating profit. It's a hard balance."

With regard to patents in particular, Transsion is struggling to keep up with its larger, better-funded rivals. Aside from some patents related to camera technologies, it is not at the cutting edge of patent creation, and this in turn has an impact on the company's ability to woo investors.

"Transsion came into the game quite late and is reliant on existing technologies," says Avle. "Although the products were innovative, they were not anything technologically new. Patents-wise they are behind in a big way and this is a major challenge and concern for long-term survivability."

It has also become a legal concern, particularly in India. In 2024, both US-based chip designer Qualcomm and electronics firm Philips sued Transsion for patent infringements, and Huawei reportedly filed a lawsuit against the company in 2019 for copyright infringement. Nokia is also pressuring Transsion to start making payments for patented technologies used in the company's phones.

Transsion has argued that some patent holders "do not own or only own a small number of patents" in some of the emerging markets where it operates, but still demand high licensing fees based on a global uniform rate without taking local factors into account.

What Transsion does have in this area, however, is what they consider a unique data set of consumers drawn from the African market. If or how they can fully monetize and use this to their advantage remains to be seen.

"They have a massive trove of data from a continent that others don't have and there are concerns about how that data is used," says Avle. "It's hard to tell, but it appears, from how they pitch its value to their investors, that the long-term game is to use it to raise additional capital or stock value."

Competition from local challengers across its operating markets is also growing. Telecom companies from Egypt, Algeria, Kenya and South Africa, among many others, have all released plans to make phones for the African market. Pan-African investment group Mara recently launched a new made-in-Rwanda smartphone aimed at primarily serving African markets. And major telecom companies Orange and MTN have also launched phones to help gain more customers and close the digital divide.

Xiao Yonghui, Transsion's CFO was also detained by Chinese authorities in September, but the reasons behind the detention have not yet been released.

Future calls

Transsion is one of many companies helping prove that Chinese firms are no longer reliant on the size of the domestic market for success, but at the same time, it is also utilizing the power of the Chinese supply chain in building tailored products for markets overseas.

The company has a very strong baseline of market share and product development that have led to astonishing results in Africa. The innovative and personalized nature of its products has clearly met a demand that was hitherto not being met. But in an increasingly high-tech-reliant manufacturing sector, the company needs to be able to keep up to keep costs down and maintain affordability against growing local and international competition.

"Transsion has actually always been overseas, and we are convinced of this path," says Qiu. "Chinese people are hardworking and enduring, and have their own unique insights in product understanding and supply chain construction. So as long as we find the right direction and find some like-minded partners on the way, we can continue to succeed."

Handsets: Infinix, iTel and TECNO are Transsion's handset brands

CKGSB BUSINESS CONDITIONS INDEX

Growing Pains

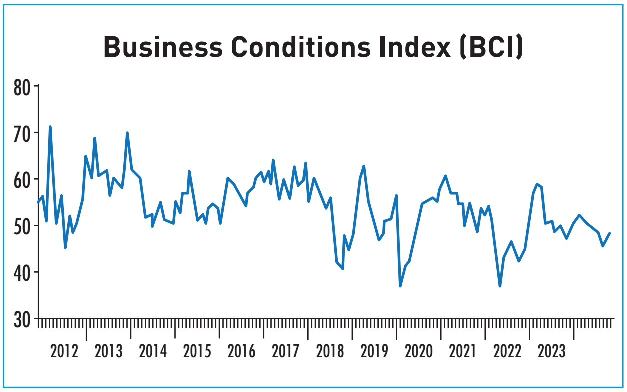
CKGSB's Business Conditions Index, reflecting confidence levels in China business, shows a weakened economy, with a trend that looks set to continue

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

The CKGSB Business Conditions Index (BCI) registered 48.1 in October, increasing from September's overall figure of 46.0. The BCI is currently indicating a weakened economy, and from the second quarter's economic growth figure of 4.7%, it appears as if the trend of difficulties in the economy is set to continue.

Introduction

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

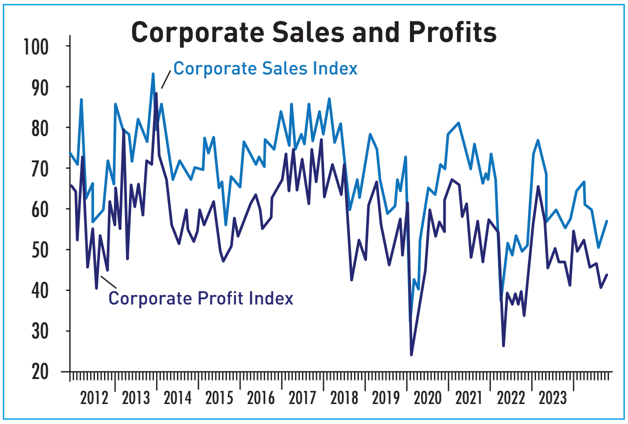


Key Findings

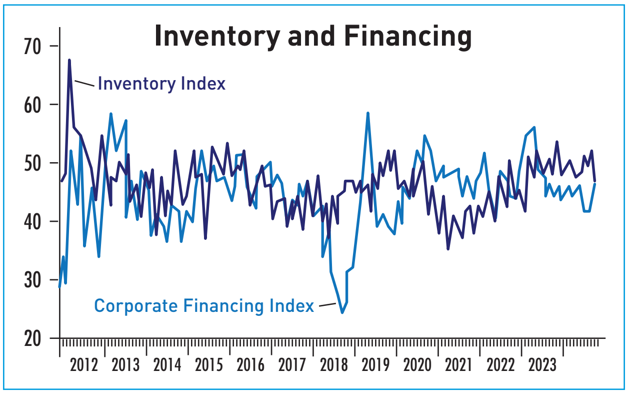
- The BCI is currently indicating a weakened economy, and it appears as if the trend of difficulties in the economy is set to continue
- Factory gate price prospects are hovering at an all-time low, a sign of the huge price pressure facing China's manufacturing sector
- Inventory was the only one of the four subindices to fall this month

Analysis

The CKGSB BCI comprises four sub-indices: sales, profit, financing environment, and inventory. Three measure prospects



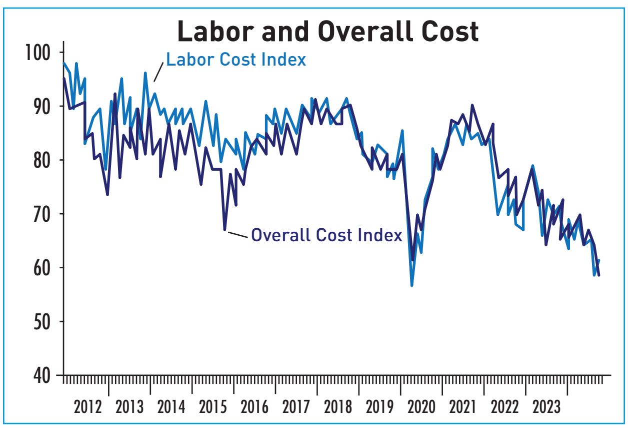
and one, the corporate financing index, measures the current state of affairs. In October 2024, they performed as follows:



Three of the four subindices rose and one fell in October. The corporate sales index made a clear leap from 50.3 to 56.4 while the corporate profit prospects grew less dramatically from 40.8 to 42.8.

Corporate financing prospects rose from 41.9 to 46.3, while the index for inventory fell somewhat, from 51.4 to 46.9. Inventory was the only one of the four subindices to fall this month.

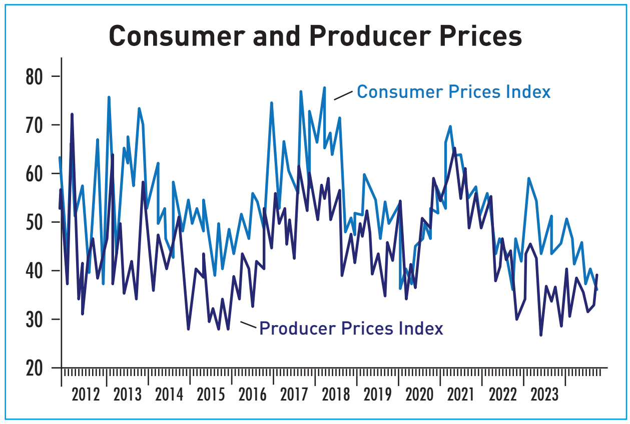
While for the other subindices—sales and profit—a positive trajectory indicates growth, for inventory, a positive trajectory indicates falling warehoused stock and a negative index points to overcapacity. When the first three sub-indices rise, it means that the situation is improving, and when they fall, the situation is deteriorating. For inventory the reverse is true.



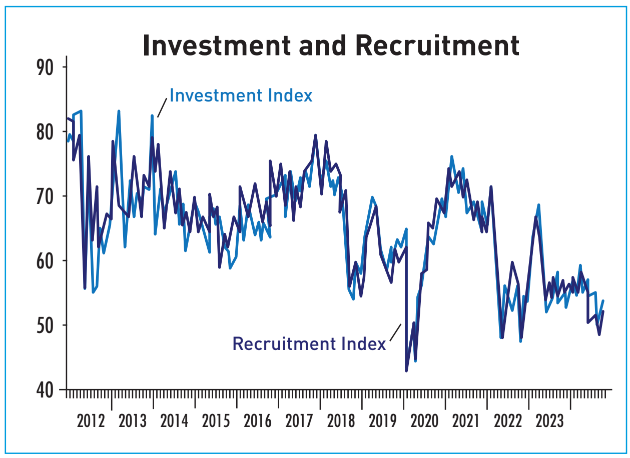
Aside from the main BCI, we also forecast costs, prices, investments and recruitment demand over the next six months.

This month, prospects for labor costs rose marginally, from 58.6 to 58.6. The overall costs index fell again in October, from 60.9 to 59.6. Falling labor cost expectations show that most companies anticipate costs to reduce in the next half year, as do overall cost predictions.

Despite this, labor and overall costs remain buoyant, and as such, while they may increase pressure on companies' bottom lines, they do not necessarily mean a deterioration of business conditions. It could instead be telling us that the economy is heating up, and companies are feeling the push to spend as demand recovers.



The consumer price index remained level this month, moving marginally from 37.1 to 37.0. The producer price index rose by a clear margin, from 33.2 to 38.7. Despite the small uptick, factory gate price prospects are hovering at an all-time low, a sign of the huge price pressure facing China's manufacturing sector.



We now turn to investment and recruitment, which are two indicators of plans for expansion in China's business world. In the past few months, they have been falling by clear margins. The index for investment bounced back from 49.7 to 53.5, and the index for employment did the same, from 48.8 to 51.8.

Conclusion

The BCI is currently indicating a weakened economy, and from the second quarter's economic growth figure of 4.7%, it appears as if the trend of difficulties in the economy is set to continue.

CKGSB CASE STUDY

Spirited Competition: How alcohol company Langjiu builds brand potential

With yearly sales growing from $300 million to $20 billion over the last 20 years, Langjiu is at the cutting edge of China's baijiu boom

By Li Yang, Associate Professor of Marketing, CKGSB
and Wang Xiaolong, Senior Researcher, CKGSB Case Center

Amid the recent Moutai-led boom in premiumization of China's national drink, baijiu, and the growth in popularity of Maotai-flavor liquor, Langjiu has focused on improving its brand potential. Moutai and Langjiu have since diverged from a relatively similar position to have several key differences.

Brand energy

Potential and kinetic energy are two important concepts in physics, and to extend them to marketing, a large number of brands' interpretations show clear differences between them. Some brands show abundant kinetic energy through high turnover, high efficiency and fast delivery. The faster the speed of processes, the greater the kinetic energy.

Other brands focus more on potential energy, taking a slower approach to early growth and brand building to rise to greater heights and develop a brand premium, which can then be converted into other successes. The greater the size of the brand, the greater the potential energy. Langjiu has begun to focus more on potential rather than kinetic.

Because of this, international companies or brands invariably have extremely high potential energy. In addition to well-known examples such as Apple and Tesla, brands such as Caterpillar (CAT), the world's premier construction machinery brand, also have great potential energy. This provides a wide range of horizontal and vertical opportunities, and can be used to influence users, the industry, or even set standards.

There are many perspectives on defining a brand's potential energy. One such definition posits that this kind of brand will be at the forefront of consumers' minds, will exert a strong influence on those consumers, and generally be ahead of the competition in the market, coalescing into a brand image that consumers cannot resist.

From another perspective, brands with potential energy are more aligned with feelings of social recognition, respect, and self-realization, focusing on psychological needs such as love, belonging, and fulfillment rather than just the product and its uses. This tends to help push them into higher price brackets. Often, the brand's founder will likely have very distinct values and an unshakeable adherence to the brand and its content.

So, how can a liquor brand such as Langjiu create momentum, utilize its potential energy to premiumize the brand, generate higher gross profits, and build loyalty?

> The construction of the Langjiu Estates was driven by the desire to create longer-term and more meaningful relationships with customers

From river to bottle

The Langjiu brand is centuries old, and in more recent times, has gone from national recognition in the 1980s, to facing bankruptcy in 2002 and back again.

Smart and regionally-based advertising strategies around the time of the 2008 Beijing Olympics helped bring up revenues, which would exceed $10 billion by 2010. Between 2012 and 2016, a series of restrictions on officials consuming baijiu caused the whole liquor industry to dip again. After this dip, Langjiu began to plan a new round of steadier and more long-term focused brand growth.

Moving to higher ground

Langjiu's marketing strategies before 2017 fell neatly into the brand kinetic energy bucket, aiming at high turnover. Many liquor brands in China are still having difficulties building brand momentum, relying heavily on traditional marketing strategies, which are mainly used to expand awareness.

Against this backdrop, Langjiu weighed the benefits of increasing brand momentum in terms of rapid revenue generation, against the drawbacks of dependence on products alone, and decided to build brand potential, which is arguably the more difficult path and a longer-term strategy.

Langjiu believes that the market environment and the company's history allow it to build much greater brand potential. One such option was to benchmark against the industry leader, Moutai, with which it has a number of similarities, including where the companies are based, price, quality, sales and reputation. Both companies won the 'Nationally Famous Liquor' awards in the 1980s. Because of this award, the company began to publicly present itself as being among the top 2 baijiu products in China.

For Maotai-flavor baijiu, as with many spirits, the aging process affects the quality of the product, and with this in mind, Langjiu created *Qinghualang*, a high-end brand with retail prices on a par with Moutai using a highly distinguishable navy-blue bottle as its trademark. Although Moutai had better brand potential at the time, the key difference between the two was a greater level of aging in Langjiu's product, which was intended to make up for the gap in brand potential and prove that drinking it was worthy of the Top Two slogan.

While doing this, Langjiu invested heavily in upgrading technology and the production process, as well as using advertising campaigns to increase recognition of its new slogan. The company also extended the slogan in various ways, emphasizing the company's links with nature and comparing its benefits to those of Moutai.

Between 2017 and 2019, Langjiu also positioned several of its brands at different price points in the baijiu market, utilizing the growing potential of *Qinghualang* to gradually pull up the rest of its product lines with it.

Model movement

Alongside new slogans, Langjiu has gradually shifted from the traditional distribution model toward a sales model that emphasizes the brand-consumer relationship, and it was during this process that the growth of brand-building momentum began to appear.

Langjiu began by 'going out,' linking itself to various famous Chinese companies. Langjiu has a lot of history to draw upon, and this tends to resonate with decision-makers in such firms. Additionally, serving Langjiu products at subsequent dinners with the companies allowed the product quality to speak for itself.

As a result, the companies would often place large orders with Langjiu and influential business leaders would recommend Langjiu's products. Baijiu is often the lubricant in business relationships, and Lanjiu became the first choice for more of these occasions thanks to the influence of these famous entrepreneurs.

After 'going out' came 'inviting in.'

As early as 2002, Lanjiu began to use the idea of 'user experience' in its marketing efforts. Utilizing the natural resources it has access to, which include a number of caves, as well as its distillery for visits by entrepreneurs and celebrities.

Langjiu's hospitality capacity has evolved from a guest house that could host around 80 people, to the Langjiu Estates in China's Sichuan Province, which include a five-star hotel nestled within the natural scenery that accents the area, the distillery, an activity center, and access to the caves. Tianbao Cave in particular is a popular spot, where visitors can see the storage of aging baijiu containers which have been nicknamed the 'terracotta warriors of wine.'

The construction of the Langjiu Estates was driven by the desire to create longer-term and more meaningful relationships with customers. There is also a membership system that helps connect consumers through events such as forums and golf tournaments. The Langjiu Estates receive nearly 1,000 visitors from all over the country every day, including entrepreneurs, celebrities, influencers, business elites, wine distributors, and partners from all walks of life.

"The Estates serve as a venue to bring high-quality life experiences and enjoyment to its members, and this echoes the spiritual core of Langjiu," says a company spokesperson.

'Going out' acted as something of a conduit to customer acquisition, but 'inviting in' cemented the company's influence with its consumers and helped drive the brand's potential forward.

Values and global dialogue

Given the success of changes to its marketing approach, higher sales revenues and the continued development of Langjiu Estates, the company's brand potential reached new heights. In 2021, the company began to transition away from its previous marketing approach of associating itself with the market leader, Moutai, towards tapping into its own brand power with a longer-term mindset.

There was also a recognition that as much as there is value in a name, the best brands provide other kinds of value, through user experience, giving back to society, and promoting human progress. This became the basis of Langjiu's approach to differentiating itself within the Chinese liquor market.

The company sought to learn from the successes of world-leading vineyards in France in developing the brand into something that can be viewed on that level. The goal is to have baijiu become a symbol of Chinese culture on the global stage.

Langjiu then created a new campaign that drew upon the company's long history, natural resources, and new experiential offerings in the Langjiu Estates, emphasizing the value it could provide beyond a good quality product.

The company also began to take a leadership role in leveling up the industry itself. At a festival organized by the company at its estates in 2022, Langjiu released a list of product control and development guidelines, which are more stringent than the national guidelines for baijiu production.

Looking forward

The key for Langjiu now is to once again emulate Moutai and other luxury or premium products across the world, by creating the perception of scarcity. This requires both ensuring the quality of the product and also continuing to increase brand potential, so that the brand becomes something of a social currency, to be chased by people.

The company has set out several goals to achieve this. Firstly, it will continue to develop *qinghualang* as its most important product and aim to increase its value and attractiveness to the consumer base.

Additionally, production and storage are an important cornerstone of the development strategy. Langjiu currently has its highest capacity levels in the company's history, with 60,000 tons of production capacity and 180,000 tons of storage capacity. By 2030, the company is planning to expand this to 100,000 tons of annual production and over 500,000 of storage. This is particularly important given the increased value gained by aging the product.

Talking about the future, the company's chairman Wang Junlin released the 'Hundred Years of Langjiu' plan, which details three major company goals to be realized by 2030.

1. Maintain an important position in the Chinese liquor industry, alongside Moutai, both making high-end baijiu.
2. Make itself lead the Maotai-Luzhou-flavor liquor market.
3. Turn the Langjiu Estates into a world-class winery and place for those who love the product.

These three goals show the height of Langjiu's brand potential, with the first two focusing on the domestic market, and the third pointing to the global market. The goals also make clear the relationship between Langjiu and Moutai. They are not necessarily competitors, rather they are partners that can help improve each other. However, if Langjiu wants to ever surpass Moutai in market value, internationalization will be the way to do it.

A new perspective

There are clearly some structural problems for China's liquor industry, particularly when seeking to expand globally. Baijiu production in 2022 slipped to around 50% of the 2016 level, and revenue growth rates were low. Customs data also shows that in 2022, China's baijiu exports accounted for just 0.24% of total production and 0.7% of total revenue.

Domestically, these issues are related to demographic shifts, with a declining birthrate and a change in lifestyles that result in unpredictable alcohol consumption trends in young people. Some brands have attempted to appeal to younger audiences with targeted products, and others have begun to sell online via e-commerce platforms, but generally, brands have been slow to change.

In order to resolve these issues, there are several options. The domestic market needs to pay more attention to attracting younger customers, there needs to be greater attention paid to premiumization, and brands should look deeper at internationalization.

Chinese enterprises can no longer just rely on domestic market thinking to solve their issues. Rather they need to take inspiration from international markets and products to continue their brand building, as Langjiu has done by emulating vineyards elsewhere.

Chinese brands need to 'invite in' the advanced elements of international brands with help from the global market, global resources and global talent so that they can 'go out' into the world more successfully. It will also help avoid the potential involution and homogenization that comes from solely depending on the domestic market.

Langjiu's brand potential building is an example of this approach, but the company is not without its challenges. The process of internationalization and premiumization is a difficult one but also stands a good chance of success.

CLASSROOM REVOLUTION

China's EdTech industry was battered in 2021 by a crackdown on extra-curricular classes, but the country's embrace of new technologies like AI is breathing new life into the sector

By Ni Tao

China needs to find the right balance for EdTech adoption, so that it complements, rather than replaces, existing teaching

Watching a student learn with the aid of an artificial intelligence (AI) app on a tablet is no longer anything novel for Iris Yin. The Shanghai-based high school teacher says students now regularly use AI to assist with a growing number of academic tasks. “Technology products like AI are widely used, especially when students are left to study on their own, with applications such as photo-based question answering, speech recognition and personalized tutoring,” she says.

Around the world, teachers like Iris are becoming ever more accustomed to the growing penetration of technology both inside and outside the classroom. Educational technology, or EdTech, refers to the combined use of computer hardware, software, and educational theory and practice to facilitate learning. “China’s EdTech sector began its expansion in 2013-2015,” says Eva Yuan, co-founder of Teenibear, a Beijing-based firm making smart learning hardware. “That was when a lot of startups cropped up to provide online learning platforms, digital content and interactive teaching tools.”

A wealth of technologies

EdTech has become an umbrella term for a wide array of technologies designed to complement multiple aspects of the teaching or learning experience. They range from augmented reality (AR) and virtual reality (VR) to Internet of Things devices and cloud computing.

The EdTech market has expanded exponentially over the past decade across the world, with China emerging as a major player and innovator in many aspects of the industry. According to China Insights Consultancy, the market for hardware in China was valued at ¥43 billion ($6 billion) in 2023, and is forecast to expand to more than ¥79 billion ($11 billion) by 2028. A report from GlobalData shows that the projected CAGR of the China EdTech market will exceed 6% between 2023-2028.

According to Yuan, the three most popular categories of intelligent educational hardware in the Chinese market are e-learning tablets, smart dictionary pens and portable audio players for English learning. These devices fundamentally change the way education is provided, especially in home settings. Students can exercise their autonomy in learning, posing questions to and chatting with AI-powered virtual tutors.

In a country known for rote teaching and “cramming” education, students who are increasingly dissatisfied with this method are seeking more personalized learning experiences. EdTech products have also made remote learning not just possible, but also more attractive.

However, EdTech can be a double-edged sword. There are concerns related to problems encountered by students, including a lack of concentration, mental distress caused by alienation and even failing eyesight. In addition, for teachers in the China system which almost exclusively relies on rote learning, there is the risk that their role will be usurped by technology.

Despite these issues, most parents are happy with the addition of technology. Xuehong Guo, a mother living in eastern China’s Hangzhou, is deeply impressed by an e-learning tablet she bought for her two young sons. “My strongest impression is that the tutorials feel real, just like a teacher with rich teaching experience. It’s not rigid or mechanical,” says Guo.

Filling the void

China’s tech titans have a reputation for grasping any opportunities for monetization, and their approach to EdTech has been no different. Hefei-based iFlytek, known as one of the country’s “Four AI Dragons,” arguably has the industry’s most comprehensive product portfolio, covering e-learning tablets, smart dictionary pens and portable translators.

Several startups are also helping lead development in the sector. Zuoyebang, a player in the K-12 segment, equips its smart tablets with AI apps that mean students can have their assignments graded, corrected or improved by an AI tutor. Traditional online course providers such as Huohua Siwei are also shifting towards a more tech-driven approach, offering quality-oriented education like coding, speech training and Go playing.

Before the rise of these new leaders, China's EdTech space was dominated by after-school tutoring giants such as New Oriental and TAL. Both had a deep foothold in the sector until July 2021, when the Chinese government introduced its 'double reduction' policy, designed to reduce the homework burden and pressure to attend masses of after-school tutoring on primary and secondary school students.

Aided by a steady influx of venture funding until 2021, Chinese EdTech players had the money to lavish on talent recruitment, product design and supply network to continue refining their offerings. But the tide turned, and these once-high-flying companies got caught in the regulatory crosshairs. As a result of the 'double reduction' policy, billions of dollars in value were wiped off firms like New Oriental and Yuanfudao, and the country's after-school tutoring sector was decimated.

Given the cultural pressure for Chinese children to excel in their educational endeavors, the void left behind by the tutoring firms was quickly filled by new EdTech entrants such as Alibaba-backed Jingzhunxue, which marry their knowledge of customer needs with increasingly cost-effective AI technologies to roll out consumer-facing hardware products.

Model consumers

The business model for EdTech in China and the West began in a similar fashion, with companies mainly focused on online course offerings. But the Chinese EdTech market has since diverged from the Western model, and large disparities now exist, in part due to the complexities of the regulatory environment.

"The regulatory environment in China is strict, particularly in K-12, as opposed to the freer markets overseas, which allow for a more natural style of innovation," says Yuan. "Additionally, K-12 education drives most of the demand in China and is focused on children's training, whereas vocational education and lifelong learning are more prominent abroad."

There are also differences between educational goals in each market. "While AI in Western education is often used to support students' independent exploration and inquiry-based learning... China's AI applications in education are more focused on concrete teaching and practice scenarios," says Mengxi Jiang, senior project leader at Daxue Consulting.

> **At present, the educational community is generally cautious about ChatGPT**
>
> Sun Tianshu
> Dean's Distinguished Chair Professor
> CKGSB

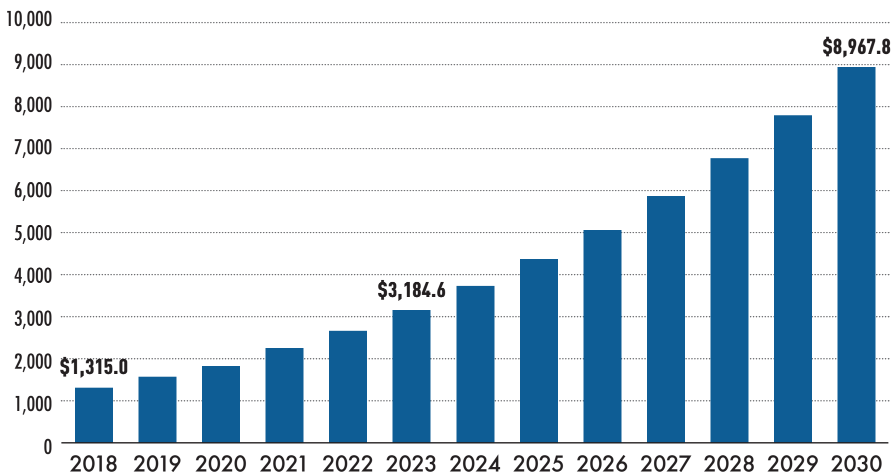
"At present, the educational community is generally cautious about ChatGPT, with many schools in the US banning the tool due to concerns about cheating, IP issues and the impact on students' ability to learn and practice," says Sun Tianshu, Dean's Distinguished Chair Professor of Information Systems at CKGSB.

As with other industries, China has a major supply chain advantage, which helps to slash the costs across its EdTech products. Nonetheless, these strengths do not necessarily ensure that Chinese firms have a head start in their competition with international rivals, mainly because of "vast differences in educational institutions and cultures," says Yuan.

This could mean a bumpy ride for Chinese EdTech companies banking on global expansion to compensate for dwindling profits at home. Excessive competition, homogenous products and an economic downturn have combined to dent their revenues. To the extent that some

GROWTH FOR GROWTH

The EdTech content market in China has been growing in value consistently over the past five years, and this is expected to continue



Source: Grand View Research

> **The ‘double reduction’ policy has both stimulated and stymied the EdTech sector**
>
> Mengxi Jiang
> Senior Project Leader
> Daxue Consulting

firms have looked to expand overseas, success stories are few and far between in the West or even Southeast Asia.

TAL is among a handful of pioneers going global. Emboldened by the popularity of its math education in the home market, the Beijing-based powerhouse set up its first overseas operation called Think Academy in the United States in 2019, aimed at providing primary school students with localized online and offline math courses. It has met modest success along the way, expanding to several countries and recording “triple-digit” growth rates for several consecutive quarters, according to TAL’s financial report for the quarter ending May 31, 2023.

An agent of equality?

In addition to personalized teaching and enhanced efficiency, the rise of EdTech promises to democratize education in China’s remote, underdeveloped regions. In 2018, students in an impoverished county of southwestern Yunnan were given a chance to learn real-time from star teachers at an elite institution in Chengdu via an Internet and satellite-enabled projection screen installed in classrooms. This move was widely praised for bolstering the accessibility of quality educational resources and leveling the playing field.

The significance of AI education is often seen in light of its implications for the future of learning and work. “With the rapid uptick of AI, youngsters fresh out of university have an opportunity to lead world-leading AI projects,” says Feng Zhou, CEO of NetEase Youdao, an e-learning platform and smart hardware producer.

Despite the purported benefits, EdTech is never far from controversy. Critics say it widens the gap between haves and have-nots, with many AI products being priced out of reach for poor families. Educators have called for regulating the use of AI, out of concern for the ethical implications of promoting AI to an unsuspecting audience. “I think it presents challenges and problems in the form of uncertainties and false information,” says Jianli Jiao, Professor of Educational Technology at South China Normal University.

Other deficiencies of EdTech solutions became apparent during the Covid era, when many parents and teachers complained that students experienced issues like an attention deficit or a poor sense of engagement. Convinced that technologies alone would never replace good teachers and a physical classroom, many were eager for the return of offline classes to restore a true sense of learning and belonging.

“In the field of education, we need to clearly define the proper division of roles between teachers, systems, and technology products. The process of educating individuals is the expertise of teachers,” says Zhou. “EdTech should not interfere with this process but should instead provide support in areas such as knowledge delivery and problem-solving.”

The deployment of EdTech tools can sometimes be hobbled by a mismatch

Classroom company: many of China’s top tech firms are working in EdTech

between desires and capabilities. "Many schools are lacking the necessary technological and human capital resources for both teachers and students," says Jon Santangelo, founder of Chariot Global Education, a Guangzhou-based private educational consultancy.

Another case against EdTech has to do with its occasional emphasis on fast delivery to maximize output. To many critics, this obsession is antithetical to the nature of education as a long-term endeavor that involves patient teacher-student interaction and students' self-motivation for independent learning and exploration.

"Though results derive from actions, the overall AI deployment now is being pushed too hastily without a clear roadmap, driven mostly by the ambitions of educational officials and the interests of industry, which may lead to a violation of the fundamental principles of education," says Jianguo Deng, a professor teaching communication at Fudan University's School of Journalism.

Experts caution against plunging children into the AI world at too early an age, for many lack the underpinning for this type of learning. Zhou is against sending primary and secondary school students to learn AI technology. "Children should focus more on building a solid foundation in science and engineering, as well as mastering fundamental subjects including English," he says.

> **In the field of education, we need to clearly define the proper division of roles between teachers, systems, and technology products**
>
> Feng Zhou
> CEO
> NetEase Youdao

A joint approach

It's unclear if Chinese authorities will continue their regulatory squeeze to cool down the AI frenzy. Memories are still raw of the devastating blow dealt by the "double crackdown" on the country's after-school tutoring segment. According to Jiang, as of April 2024, more than 95% of offline after-school training institutions for compulsory education subjects have been shut down, and the closure rate for online institutions exceeds 85%.

"The 'double reduction' policy has both stimulated and stymied the EdTech sector. The policy has accelerated the adoption of new technologies like AI and stimulated growth in areas like quality education and intelligent hardware," Jiang notes. "However, the sudden shift has posed challenges for many businesses and caused significant disruption in the industry."

Although the impact is still acutely felt today, Yuan says she recently noted a warm-up in sentiments toward after-school tutoring, driven by a perceived recovery of demand as well as a relaxing of restrictions, ostensibly to create jobs.

While expectations are high for EdTech to change education for the better, many users are increasingly wary of its pitfalls. The Covid era is a wake-up call for them to emphasize a combination of EdTech and human interaction. In addition, the notion that EdTech itself will promote educational equality has proven to be a myth.

In the case of generative AI, "users have to meet certain prerequisites, like applying for an account, being willing to pay, knowing how to write prompts, identifying mistakes in AI-generated content (AIGC), and embedding AIGC into their existing knowledge," says Deng. "The emergence of AI will not necessarily remedy unequal access to education."

Many students who are overdependent on AI to generate answers from prompts risk losing the ability to think independently or exercise their critical faculty. This fills Yin with concern. Although she credits the role of EdTech in lightening her load when handling tasks like allocating and receiving student homework, challenges abound. "A big worry is about students becoming so reliant on EdTech that they stop thinking on their own," she says. "Another is whether AI will substitute traditional teacher-student relationships."

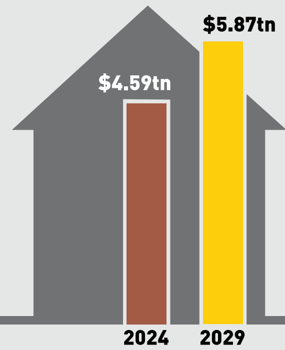
The spread of EdTech does decentralize the authority of teachers under a traditional educational model, making in-person classroom attendance seem outmoded compared to more sophisticated forms of learning. Nonetheless, the establishment of a teacher-assisted education for an increasingly technological world is a trend that's here to stay, meaning teachers will have no other choice but to brace themselves for the incoming changes.

"Today's educators must learn to harness artificial intelligence and work with AI and robots," says Jiao. "We need to teach children how to master AI. There are some drawbacks to EdTech, and valid concerns around some parts of adoption. But there is no reason for educators to dismiss or ditch EdTech altogether. The market and tech will continue to grow, especially in China."

"In the long run, the development and application of ChatGPT technology will unquestionably have a huge impact on all education systems," says Sun. "We believe that the root of the issue of proper adoption lies not in ChatGPT itself, but in how we view education and how we think about the challenges and opportunities that AI presents."

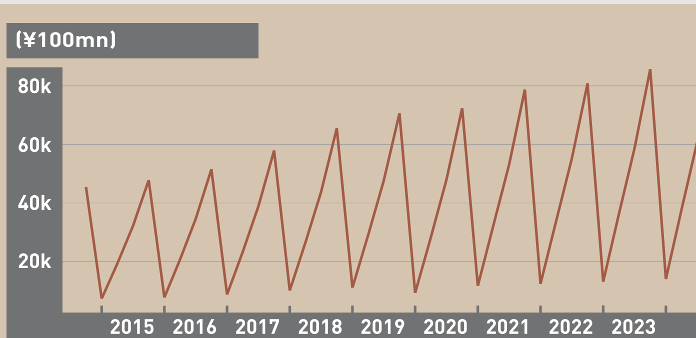
BUILDING BLOCKS

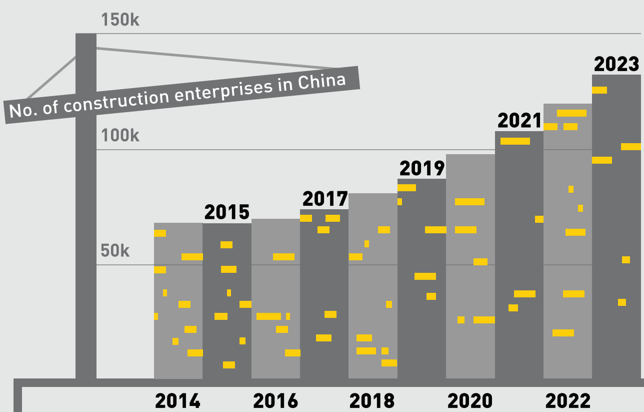
Despite some of its current difficulties, China's construction market is still the biggest of any globally, worth around $4.5 trillion. It is expected to grow at just over a 5% CAGR through to 2029.



Construction GDP

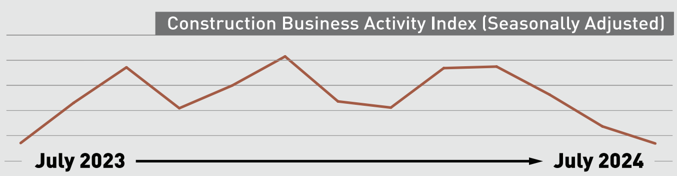
The GDP contribution from China's construction industry fluctuates on a yearly basis, with Q1 having the lowest contribution, due to winter and the lunar new year, and then increasing over the year until it peaks in Q4. The longer term trend has been a growth in both the peaks and troughs each year.

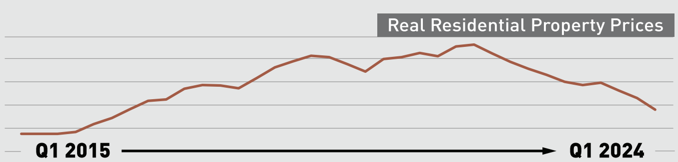




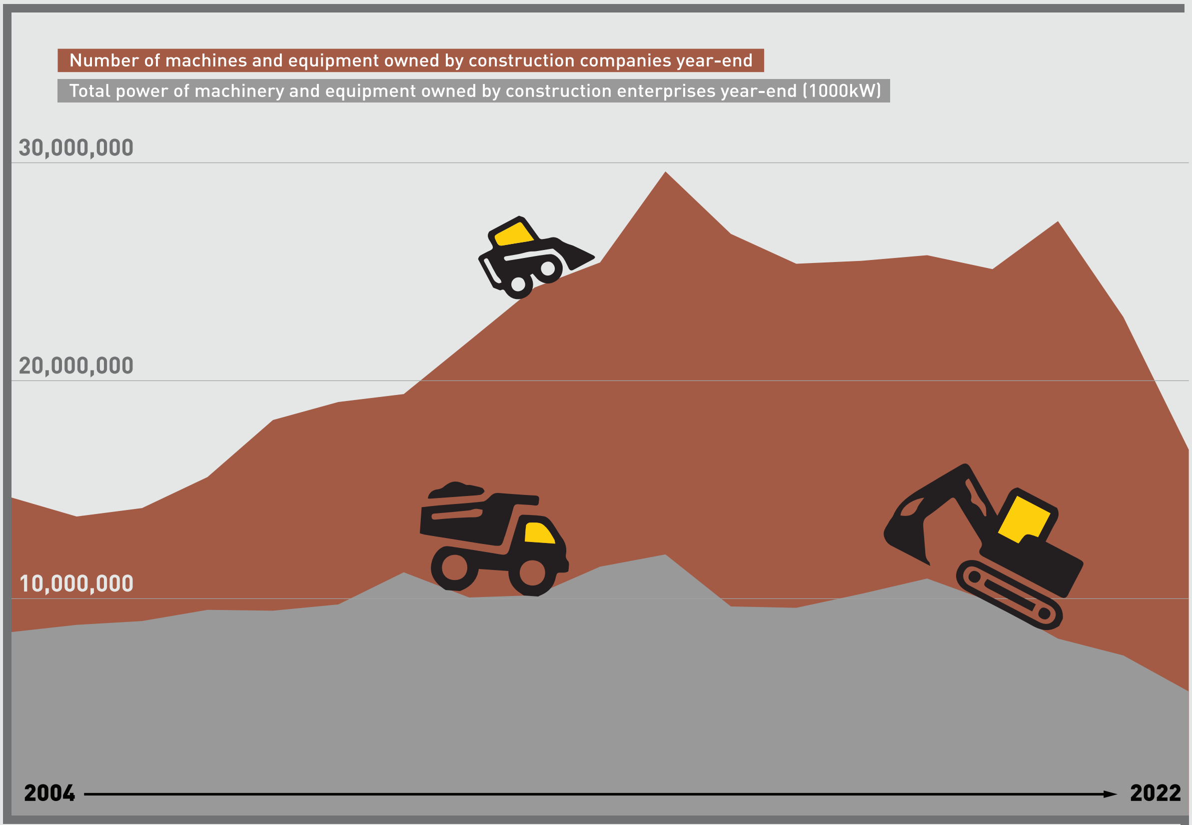
As a result of a government crackdown in 2021 aimed at managing the growing debt levels in the sector, many of China's largest developers have been under significant financial strain. But that has not stopped the trend in the overall number of construction enterprises in the country from increasing.

However, in recent months, there has been a clear downward trend in the business activity index for the construction sector, as well as a steady decline in residential property prices. These downward trends indicate that significant issues with both supply and demand remain.





Another interesting trend that suggests we are now past a peak for China's construction industry is the steady drop in the total number and power capacity of construction machinery and equipment. A higher number for either would suggest greater activity in the market.



By Region

China's eastern province of Jiangsu has by far the highest number of construction employees of any part of the country. This is also reflected in the fact that Jiangsu generates the most construction industry revenue of any region.

No. of construction employees in China in 2022	
Jiangsu	8,772,329
Zhejiang	4,942,142
Fujian	4,707,380
Guangdong	3,443,633
Sichuan	3,400,189

Construction industry revenue in 2022 (¥bn)	
Jiangsu	4,066
Zhejiang	2,386.11
Guangdong	2,295.65
Hubei	2,115.5
Sichuan	1,784.56

Sources: Mordor Intelligence, National Bureau of Statistics, Bank for International Settlements data CHINA data

The stats you need to know

Macro

Slowing Exports

China's export growth slowed sharply in September while imports also unexpectedly decelerated, suggesting manufacturers are slashing prices to move inventory ahead of tariffs from several trade partners. Outbound shipments grew **2.4%** year-on-year, the slowest pace since April, and missing a forecast **6.0%** increase in a Reuters poll of economists.

Source: *Reuters*

School is in!

China will now double the annual scholarship quota for undergraduate students to **120,000**, that of postgraduates to **70,000**, and doctoral students to **20,000**. China will also increase the annual scholarship value to **¥10,000** (**$1,415**) per undergraduate student, up from **¥8,000** currently.

Source: *Bloomberg*

Investment Increase

China's National Development and Reform Commission has announced a **¥100 billion** (**$14.1 billion**) central budget investment plan and another **¥100 billion** strategic construction project list. Local governments have been quick to reach, with Sichuan, Jiangxi and Jiangsu provinces all holding meetings to discuss strategies for securing the funds.

Source: *Caixin*

Business

Revenue Rise

Revenues at Xiaohongshu, the start-up known as China's answer to Instagram, surged to **$1 billion** in the **first quarter** of 2024 as it ramped up advertising from retailers targeting Gen Z women. The picture and video sharing app generated **$200 million** in net profit in the first three months of the year on just over **$1 billion** of sales. This is up from **$40 million** in the same period last year on revenues of about **$600 million**.

Source: *Financial Times*

DIY in China

Ikea unveiled its biggest ever investment in China after rising footfalls across its stores in the country. Ingka Centres, the real estate division of Ikea's parent company Ingka Group, spent **¥8 billion** (**$1 billion**) on Livat Shanghai, a retail and commercial centre that took five years to complete and opened on Thursday.

Source: *Financial Times*

Business Bust

The financial data of Hong Kong- and Chinese mainland-listed companies have seen a notable slowdown in China's economy since 2021. The data showed gradual growth in revenue every six months since the first half of 2010, reaching approximately **¥40 trillion** (**$6.2 trillion**) in the second half of 2021. Since then, however, half-year revenue has leveled off, with **H1** 2024 showing a **1%** y-o-y drop.

Source: *Caixin*

Driving Away

China's key electric-vehicle (EV) makers set monthly delivery records in September as government subsidies and price cuts gave sales in the fiercely competitive industry a boost. BYD, the country's top EV-maker, sold **419,426** vehicles in September. The figure, which consisted of **164,956** battery EVs and **252,647** plug-in hybrids, marked a **45.9%** year-on-year increase and a new monthly sales record.

Source: *Caixin*

Technology

Quantum Upgrade

In a country first, Chinese research firm Origin Quantum has kept its **72-qubit** quantum computing chip running in "stable operation" on its Origin Wukong superconducting quantum computer for **nine months**. The company is now upgrading its production line of superconducting quantum computers after finding success with its self-developed chip.

Source: *South China Morning Post*

Up and Away

Chinese flying car startup, Vertaxi, has raised over **¥200 million** (**$28.3 million**) in a new funding round as capital floods into the emerging sector. Guangdong-based Vertaxi, which manufactures electric vertical take-off and landing aircraft (eVTOL), secured the Pre-B round from a group of investors led by Zhongshan Investment Holdings, a venture capital fund backed by the Zhongshan city government in Guangdong province.

Source: *Caixin*

Battery Barrage

Contemporary Amperex Technology (CATL), the world's largest battery producer, is focusing its research and development team on the use of artificial intelligence to discover the next generation of battery materials. The company now has **20,000** people working in R&D and discovering the materials that will push forward battery innovation is their main aim. CATL accounted for **37.6%** of the global power battery market in the first **seven months** of 2024.

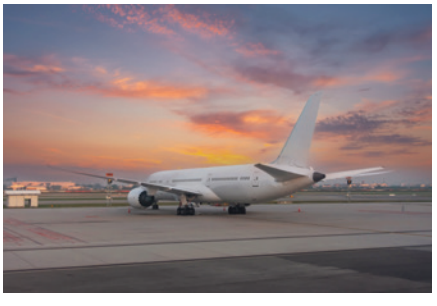
Source: *Caixin*

Agritech Expansion

Sinochem-owned Syngenta Group, one of the world's largest agricultural technology firms, aims to boost its sales and service network in China by **two-thirds** in **four years** as the nation strives to achieve food-security and sustainability objectives. The company has set a target to expand its "modern agricultural platform" service centres in the country to **1,000** by **2028** from just over **600** currently.

Source: *South China Morning Post*

Consumer



Not Taking Off

Three more European airlines have recently joined their peers in scaling back operations in China as they grapple with sluggish demand and a Russian airspace ban that has made it harder to compete with Chinese rivals. Scandinavian Airlines, Lufthansa and LOT Polish Airlines have all announced the cancellation of at least one route to China.

Source: *Caixin*

Paying Up

Tencent Holdings' WeChat Pay, one of China's dominant digital payment platforms, saw a jump in transactions during the "golden week" national holiday, as consumer spending shows signs of recovery after Beijing rolled out its biggest stimulus package since the pandemic. Known as Weixin Pay on the mainland, the digital wallet recorded a **20%** year-on-year surge in transaction numbers during the week-long break.

Source: *South China Morning Post*

Subsidizing Sales

China has approved nearly **¥11 billion** (**$1.56 billion**) in subsidies through the national automobile trade-in platform, helping drive sales of cars and home appliances. The subsidies are part of a **300-billion-yuan** (**$41 billion**) stimulus program designed to increase consumption. **Half** of the fund allocated to local governments in August is earmarked to help people replace old, worn-out consumer goods.

Source: *Caixin*

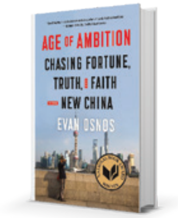
BOOKSHELF

Ambitions and Issues

Ken Jarrett, Senior Advisor at strategic advisory firm ASG, recommends books that have continued relevance to understanding China's development, long-term trends and current geopolitical issues

Ken Jarrett is a Senior Advisor at strategic advisory firm ASG, where he draws on decades of business and diplomatic experience in China and across East Asia to provide perspective and advice to businesses, investors, and other organizations with interest in the region. Most recently, he spent five years as President of the American Chamber of Commerce in Shanghai. Under his leadership, the Chamber helped hundreds of companies establish and grow their networks in China and navigate operational and regulatory challenges. Previously, Ken was a distinguished diplomat whose positions included service as Consul-General in Shanghai, and as Deputy Consul-General in Hong Kong.

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

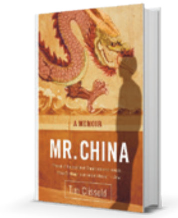


Age of Ambition by Evan Osnos is an excellent entry point for those looking for an introduction to what makes contemporary China tick. It's a readable, insightful book about the dramatic changes that continue to sweep through China. The book is now ten years old, but no less relevant, even if the sense of ambition and drive so evident in the book has come down a notch or two since 2014. One of the book's great strengths is Osnos' ability to bring his characters to life, and through them, help readers learn about China.

What book on China do you turn to the most frequently?

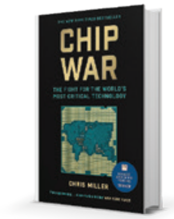
China's Economy by Arthur Kroeber is one book I keep nearby just in case I have a question about China's economy, financial system or some other technical topic about the country. The book is more of a reference work than a book you would sit down and read, but for those who might want to read it cover to cover, it's not hard to do since the book is quite well written. The material is presented in Q&A format and Mr. Kroeber has anticipated almost every question out there.

Which China book are you reading currently?



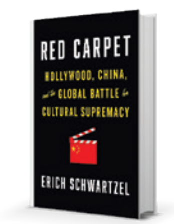
Mr.China by Tim Clissold is on many must-read lists about China. Although it came out in 2005, and is considered a classic, I'm only getting around to reading it now. It's a true story of how Clissold helped a Wall Street trader raise funds and buy factories across China just as the country was opening up in the 1990s. Along the way, they lose millions of dollars and get a tough lesson on what makes China different. It's still relevant to those doing business today.

What book best helped you understand a key issue in current US-China tensions?



Chip War by Chris Miller, an economic historian at Tufts University, is essential reading for anyone looking to understand the current rivalry between the United States and China over semi-conductor design and manufacturing. The book goes beyond the bilateral rivalry to explain the development of semi-conductors in the earliest days in Silicon Valley to the current concentration of advanced chip production in Taiwan. The history is presented in a gripping narrative that makes the book hard to put down.

Which China book do you think is the most overlooked?



Red Carpet: Hollywood, China, and the Global Battle for Cultural Supremacy by journalist Eric Schwartzel is a highly engaging description of the recent arc of Hollywood's engagement with China. It covers the period when Hollywood studios were competing to film in China, release films there and secure Chinese financing, to today's dynamic, in which Hollywood prefers to keep China at arm's length. It's a fascinating case study of just one industry and how quickly changing geopolitics brought an end to Hollywood's romance with the Chinese state.

CKGSB
长江商学院
CHEUNG KONG GRADUATE SCHOOL OF BUSINESS

CKGSB 2024 ESG and Social Innovation Report

Driving Responsible Management Education

Read more about our report here.

CKGSB
长|江|商|学|院

THE UNIVERSITY OF SYDNEY

CKGSB Global Unicorn Program

New Energy and the Disruption of Traditional Industries

11-14 February 2025 Sydney, Australia

The Global Unicorn Program in New Energy and the Disruption of Traditional Industries will focus on innovative solutions and business opportunities in the global zero-carbon transition, enabling participants to address global challenges in the areas of new energy, sustainable development, and climate change. The course will also help participants to grasp Australia's distinctive contributions in new energy, sustainability, digital transformation of traditional sectors and scaling up opportunities.

ASEAN-Australia Ties

Exploring market opportunities and strengthening ASEAN-Australia business relationships.

Innovations and Tech Disruption

How tech advancements transform traditional sectors, support climate change mitigation, and promote the circular economy.

Unicorns and Success Stories

Impact and achievements of next-gen unicorns across China, ASEAN, and Oceania.

Action Learning

Pitching and developing innovative business ideas.

Company Visits

Insights into Australia's unique research, development, and tech incubation ecosystem.

Who Should Attend

- Business leaders attuned to climate change and green innovation
- Investors focusing on Australian market opportunities
- Tech entrepreneurs at the frontier of innovation
- Key figures from NGOs and the public sector
- Executives looking to ignite internal innovation

Your Program Managers

Ms. Mara Yuan
Asia Pacific
+86 18611102323
ytyuan@ckgsb.edu.cn

Ms. Jennifer Wang
Europe
+44 7717748855
jenniferwang@ckgsb.edu.cn

Ms. Madi Yoo
S. Korea, Japan & MENA
+82-10-5505-6239
madiyoo@ckgsb.edu.cn

Ms. Renee Rong
Americas
+1(781)333 9055
xrong-bp@ckgsb.edu.cn

Learn more