

MORGAN CREEK

CAPITAL MANAGEMENT

ALTERNATIVE THINKING ABOUT INVESTMENTS

New China Perspectives



Welcome to the weekly issue of Morgan Creek's *New China Perspectives*. It is comprised of research from Morgan Creek's China-based investment team together with curated articles of interest. In addition to timely political and economic news covering greater China, Morgan Creek's China team seeks to provide in-depth perspectives on investing in the technology, consumer and healthcare sectors in the region. Our research leverages the "on the ground"

insights of our team together with Morgan Creek's decades-long experience in covering the region. Our team are focused, thematic investors primarily covering the technology, consumer, and healthcare sectors and investing in private companies and early-stage managers with deep local expertise. To learn more about our team and investment offerings, please email chinateam@morgancreekcip.com.

Best Regards,

Handwritten signature of Mark W. Yusko in black ink.

Mark W. Yusko
CEO & CIO

NOTES FROM THE BUND¹

This is the final installment of a four-part series exploring China's corporate debt. In newsletters prior, we focused on China's debt playbook to support strategic industries. In return, the local government could enjoy growth in GDP and tax income if the industrial cluster come to fruition. In this newsletter, we will illustrate local governments' practices through Hefei's perspective and how the city solved bottleneck problems for the country.

Within just 20 years, Hefei has demonstrated rapid growth in terms of GDP, from RMB 5 billion to RMB 1.1 trillion. This represents a 20-year compounded annual growth rate of 17%, compared with 13% of China's total GDP. The city is today a hub for technology talents and had over 9 million residents in 2021, compared with 4 million in 2000.²

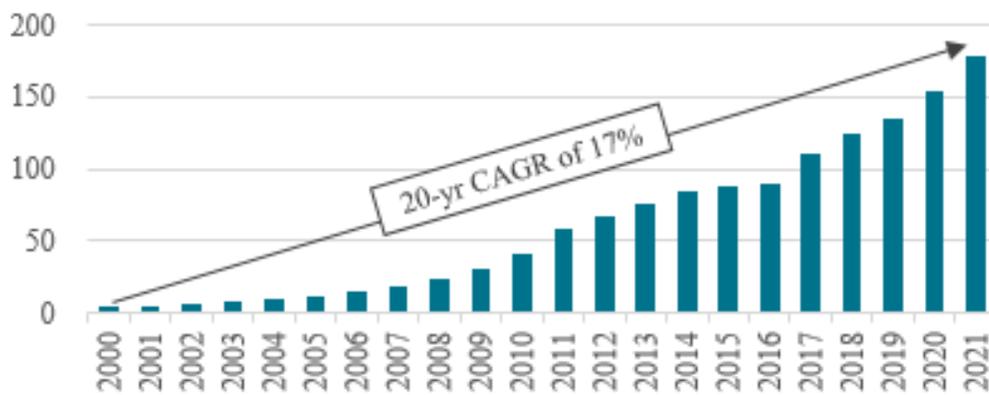


Figure 1: GDP of Hefei, Anhui by year (\$Billion)³

The success of the “Hefei Model” set a precedent for other urban investment and development companies. Hefei Urban Construction Development Co Ltd., for example, was a key pioneering investor in companies such as BOE [SHE: 000725], the largest panel maker in the world; Ofilm [SHE: 002456], the global Top 3 CCM⁴ producer by shipments; NIO [NYSE: NIO], which currently accounts for 1/3 of China’s luxury EV shipments, etc.⁵ Hefei created a world-class industrial cluster in its vicinity and also built what has become an important pillar of China’s economic engine.

The story of BOE

The timeline below summarizes the history of display technology.

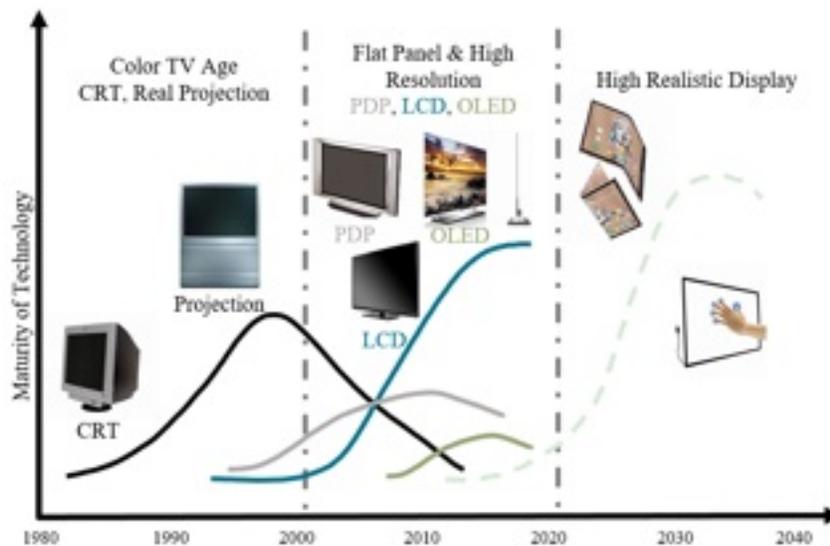


Figure 2: History of display technology⁶

BOE began life as a CRT⁷ display manufacturer and entered the TFT-LCD sector via an acquisition of an SK Hynix [KRX: 000660] unit in 2003. During that time, domestically, 80%⁸ of the value chain was dependent on imports. The legend of the world’s largest screen maker began.

BOE’s evolution and success are closely related to government support. Starting from 2005, supported by the Beijing government with over RMB 7 billion loans alongside a bank group of nine, the company executed its plan to localize its first production line for 17-inch TV display panels (i.e., the 5th generation production line). This was followed by another line for smartphone display panels (the 4.5th generation) via land rights and loan financing from the Chengdu government.⁹ However, difficulties began to emerge as the company tried to move towards manufacturing 18- to 32-inch TV display panels (i.e., the 6th generation).

- Technological gap: the market of larger display panels depended entirely on imports and required a budget

- of over ten billion RMB to develop local production lines.
- Hostile competition: Sharp [TYO: 6753], a large Japanese competitor in the global LCD TV market, approached the local governments of Shanghai and Shenzhen in 2008 to strike manufacturing deals. These two governments had first been approached by BOE, choosing to ultimately back out of negotiations with BOE.

The Hefei government was intrigued with BOE's proposed projects, and having a strong conviction in the industry, led the initial investment into the panel makers manufacturing pursuits. With only RMB 30 billion in fiscal budgetary receipts and RMB 16.1 billion in hand, the Hefei local authority made a commitment of up to RMB 9 billion (56% of the receipts in hand) and encouraged financial institutions to participate. This fundraising ended smoothly with RMB 3 billion from two Hefei Urban Investment Development Companies (UDICs) (an 81% stake in the plant), RMB 9 billion from 8 non-governmental investors, and RMB 7.6 billion from syndicated loans guaranteed by China Development Bank.¹⁰

Using a government entity to fund an emerging sector can make it easier for startups to gain access to other lines of private credit at more advantageous rates. With the government holding the majority stake in the entity, these corporate loans are considered high quality debt backed by local authorities.

By 2010, the 6th generation line was in production and created over 5,600 jobs for Hefei. Subsequently, Hefei built two more BOE plants for display panels of 42- to 55-inch (the 8.5th generation) and 65- to 70-inch (the 10.5th generation). In return, the company helped the city become the epicenter of display panels production. In five years, it witnessed the influx of over 100 global display component manufacturers, including but not limited to Sunnypol [SHE: 002876], Corning [NYSE: GLW], and Sumitomo Chemical [TYO: 4005].

Production Line	Beijing 5 th Generation 2005	Chengdu 4.5 th Generation 2008	Hefei 6 th Generation 2009	Hefei 8.5 th Generation 2014	Hefei 10.5 th Generation 2017
Investment Details (In RMB)	Loans Bank Group 4.8B Beijing Government 2.8B Fiscal Interest 180M Discount	PIPE Chengdu UDICs 3.4B Loans Syndicated loans (Backed by CDB) 1.6B	PIPE Hefei UDICs 3B Financial Institutions 9B Loans Syndicated loans (Backed by CDB) 7.6B	PIPE Hefei UDICs 18B Self-raised 9B Loans Syndicated loans (Backed by CDB) 18B	

Figure 3: Timeline of government support to BOE

BOE has demonstrated strong revenue growth since 2010 and has continued to boost its topline with each new plant coming into operation. By 2021, BOE had shipped the most display panels globally.

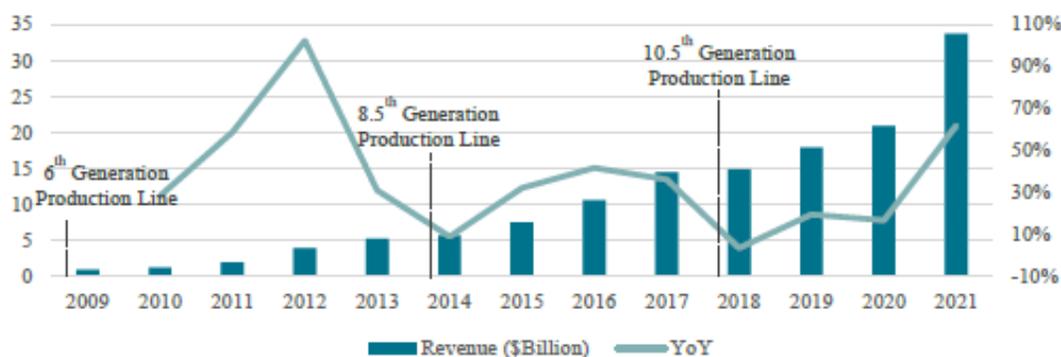


Figure 4: Revenues of BOE by year after Hefei's support¹¹

Due to the economies of scale that BOE enjoys in production, it boasts industry-leading gross margins.

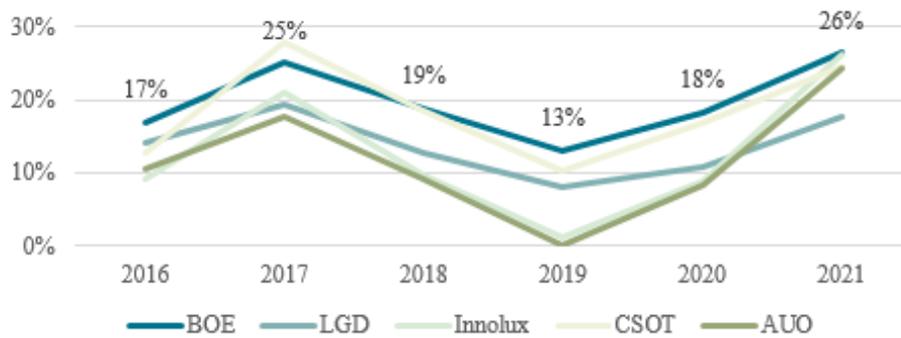


Figure 5: Key panel makers' gross margin by year¹²

BOE has shown success globally, with its overseas revenue growing at a CAGR of 38% since 2010. By 2018, the company has successfully occupied 19% of the global LCD TV panel market share, taking the lead from LG Display

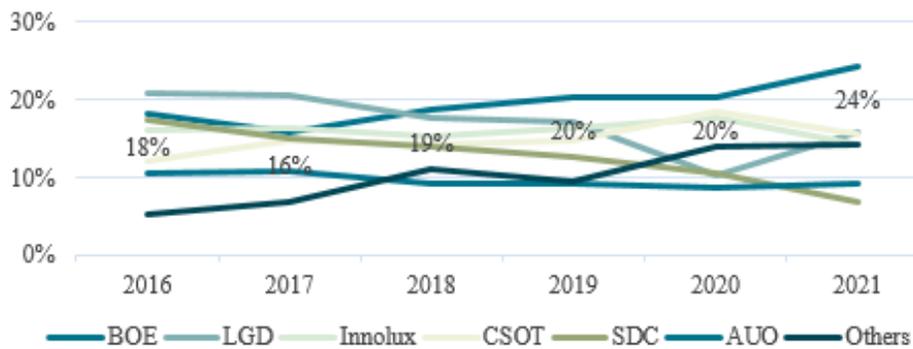


Figure 6: Global LCD TV panel market share¹³

Hefei made a good start with BOE, with the support of local government leading some of the world's top manufacturers to invest in the region and ultimately help to solidify its place as a key manufacturing hub for the display industry. More importantly, China ended its heavy reliance on foreign supplies.

Hefei's continued achievements

In 2017, Hefei identified the low degree of self-sufficiency in China's IC sector, and the potential of the market's increasing demand for DRAM¹⁴ with the maturity of cloud computing. The authority invited Gigadevice¹⁵ [SHA: 603986] to co-found Changxin Memory (CXMT) with RMB 14.4 billion from Hefei Industry Investment. CXMT started production in mid-2018 and by 2021, Hefei had attracted over 300 semiconductor companies to set up factories in the city with aggregate production of over RMB 40 billion. In 2019, with a similar methodology, Hefei saved NIO from the brink of collapse with RMB 7 billion injections through Hefei Urban Construction Development. In return, the EV maker assisted the local government to build an EV industrial park which later attracted an RMB 5.1 billion investment from a joint venture between Germany's Volkswagen Group and China's Anhui Jianghuai Automobile Co. (JAC). Please refer to Appendix 1 for detailed information.

Hefei is now the home to high-tech industries including biotech, semiconductor, new energy, artificial intelligence, etc. Attracting thousands of startups, the city enjoyed a boost in its tax income, with a 10-year CAGR of 12%.

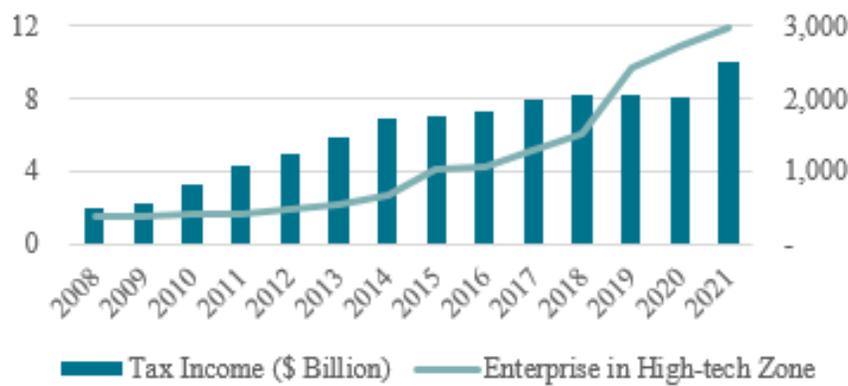


Figure 7: Rising number of enterprises located in Hefei to increase fiscal receipts¹⁶

The bad and The good

The relationship that developed between PV industry and the Hefei government proved positive for the region's economic development, but replicating this process in other municipalities was a challenge. Other local governments have made efforts to accommodate entrepreneurs, hoping to grow their own state's Longi or BOE. Consequently, zombie companies¹⁷ with poor operational efficiency that should have been closed were still in business. Over time, these companies grew too big to fail as they involved too many interested parties. LDK Solar Co.¹⁸ was one of the most representative examples. In 2011, the company created more than 20 thousand jobs and contributed 12% of the total fiscal revenue in its home city, Xinyu. In 2012, the company started to default on its debt. At that time, the Xinyu government decided to pour more money into LDK and lobby various banks to provide financial aid. Nonetheless, in 2016, the company declared bankruptcy with an astonishing debt-to-assets ratio of 3.8.

The Chinese national government uses the centralization of capital to direct resources to aid in fighting economic disparity between regions. Through means such as taxation, loan distribution, and land grants, central authorities are able to supervise development projects in industries they wish to support (such as display panels and PV), and ensure they align with the country's national strategies.

In RMB billion	BOE	Changxin	NIO
Year	2009	2017	2019
Industry	Display panel	Semiconductor	Electric vehicle
Targeted Business	18- to 32-inch LCD TV display panel	19-nm 12-inch DRAM	Headquarter
Purpose	Domestic substitution	Domestic substitution	Leading tech development
Budget	17.5	18	24
Hefei's Commitment	Up to 9	14.4	7
% of the Budgets	51.4%	80.0%	29.2%
Initial stakes	81.0%	99.8%	24.1%
Hefei's Additional Support	Subsidies on land rights, energy supply, infrastructure building, and fiscal interest deduction	Jun'2018, Hefei announced subsidies of up to RMB 20 million to eligible businesses in areas including IC and software	Infrastructure construction and talent recruitment
Hefei's Required Term	1. In production before Q4'11	1. In production before 12/31/2018 with a 10% yield rate 2. Repurchase Hefei's equity in 5 years	1. IPO within 60 months (2025) 2. Pay the capital increase price in cash (RMB 4.26B) in full on 3/31/21 3. Annual sales to exceed 20,000 vehicles for 2 consecutive years 5. Redeem at an 8.5% annual interest rate, if the requirements aren't met
Current Status (market share)	No. 1 panel manufacturer globally (24%)	No. 6 DRAM designer globally (1.4%) ¹⁹	No. 1 Luxury EV maker in China (33%)
Hefei's Benefits	Cluster of over 100 global display upstreamers: Sunnypol, Corning, Sumitomo Chemical	Cluster of over 300 IC companies: MTK, Phison, TFME	EV supply chain in NEO Park: JAC, Gotion High-Tech

CHINA NEWS SPOTLIGHT

New Market Confidence Bolsters Commercial Real Estate Demand: As China's response to COVID-19 enters a new phase and market confidence recovers, the nascent economic recovery is expected to boost demand for all types of commercial properties in China, industry experts said. "Consensus has been reached that China's economic growth is a priority for the world in 2023, and capital markets are making preparations for entering the China market via many channels," said Lu Qiang, executive director for capital markets of East China with Cushman & Wakefield, a global real estate services firm. [Read More.](#)

Iraq's Central Bank Plans Direct RMB Settlement for Trade from China: Iraq's central bank announced on Wednesday its plan to allow direct renminbi settlement for the first time for trade from China. The central bank will boost the balances of Iraqi banks that have accounts with Chinese banks in yuan, according to the bank's Wednesday statement. However, this is largely dependent on the central bank's yuan reserves, Mudhir Salih, the Iraqi government's economic adviser, was quoted saying by Reuters. [Read More.](#)

China Reopening Positive, Not Transformative for Global Growth Prospects: China's reopening is positive for economic growth in the rest of the world, but will not be a transformative event, Fitch Ratings says. China's zero Covid policy had not significantly restricted the global supply of manufactured goods, and stronger Chinese growth will be consumption-led, limiting the transmission to other major economies. This month, Fitch raised its China 2023 growth forecast to 5% from the 4.1% forecast in its December Global Economic Outlook (GEO) to reflect evidence of the impact of the authorities' shift from their "dynamic zero Covid-19" policy stance. We do not expect as strong a rebound as in 2021, when Chinese GDP grew by 8.4%, because tighter global monetary policy will weigh on demand for Chinese exports and we do not anticipate aggressive macro-policy easing in China. [Read More.](#)

EV Maker Nio Plans New 40 GWh Battery Plant in China: Nio (9866.HK) plans to build its first battery plant to produce big cylindrical cells similar to those used by Tesla, two people familiar with the matter said, as the Chinese EV maker seeks to cut its reliance on CATL (300750.SZ) for supplies. [Read More.](#)

Dida Chuxing Restarts its IPO in Hong Kong: Dida Chuxing (Chinese: 滴滴出行) submitted its IPO application to the Hong Kong Stock Exchange, which is its third submission for Hong Kong stock listing after two unsuccessful listings. The Dida Chuxing's IPO was co-sponsored by CICC (Chinese: 中金公司), Haitong International Securities Group Limited (Chinese: 海通国际) and Nomura Orient International Securities Co., Ltd (Chinese: 诺姆华). Dida Chuxing opened up the market by ride-sharing service. In 2014, it launched the ride-sharing service, which is also its largest source of income. In the past three years, Dida Chuxing's ride sharing service accounted for more than 89% of its revenue. In the first nine months of 2022, Dida Chuxing's ride-sharing service revenue accounted for 91.1%, smart taxi service revenue accounted for 3.6%, and advertising and other service revenue accounted for 5.3%. [Read More.](#)

Merck-Backed Kelun-Biotech Picks Banks for Hong Kong IPO, Sources Say: A biotech subsidiary of Sichuan Kelun Pharmaceutical Co. selected Citic Securities Co. and Goldman Sachs Group Inc. to work on its upcoming initial public offering in Hong Kong, according to people familiar with the matter. Kelun-Biotech plans to list as soon as in 2023, the people said, asking not to be identified as the information is private. It is too early in the process to determine the offering size, the people said. [Read More.](#)

Keymed and Lepu Biopharma Jointly Announce Global Exclusive Licence Agreement with AstraZeneca for CMG901: The US Food and Drug Administration (FDA) has accepted the biologics licence application (BLA) for Shanghai Henlius Biotech's proposed biosimilar HLX02 (trastuzumab for injection). Accord BioPharma (Accord US), the business partner of Shanghai Henlius Biotech, has submitted the BLA. The application is seeking approval for the biosimilar to treat HER2-overexpressing metastatic breast cancer, and metastatic gastric or gastroesophageal junction adenocarcinoma. [Read More.](#)

Coherus and Junshi Biosciences Announce Positive Final Overall Survival Results of JUPITER-02, a Phase 3 Clinical Trial Evaluating Toripalimab as Treatment for Recurrent or Metastatic Nasopharyngeal Carcinoma: Keymed Biosciences Inc., ("Keymed") (Stock Code: 02162 HK) and Lepu Biopharma Co., Ltd, (Stock Code: 02157.HK) today jointly announce a global exclusive licence agreement with AstraZeneca (LSE/STO/Nasdaq: AZN) for CMG901, a potential first-in-class Claudin 18.2 antibody drug conjugate (ADC). Under the licence agreement, AstraZeneca will be responsible for the research, development, manufacture and commercialisation of CMG901 globally. CMG901 is currently in a Phase I clinical trial for the treatment of Claudin 18.2-positive solid tumors. Preliminary results from the Phase 1 trial indicated that CMG901 has a favorable safety

and tolerability profile, and encouraging anti-tumor efficacy across the dose levels tested. [Read More.](#)

¹ The Bund is a historic waterfront area in central Shanghai, where Morgan Creek’s office is located. From the 1860s to the 1930s, it was the rich and powerful center of the foreign establishment in Shanghai, operating as a legally protected treaty port. The picture above is part of the historical waterfront.

² Source: CEI data

³ Source: Wind

⁴ Notes: CCM stands for Compact Camera Module.

⁵ Notes: The data is as of 2022.

⁶ Source: Emissive Displays Rise and Fall – and Rise Again <http://dev.informationdisplay.org/Home.aspx>

⁷ Notes: CRT stands for Cathode Ray Tube. CRT is a technology used in traditional computer monitors and televisions.

⁸ Source: Peking University

⁹ Chengdu Industry Investment Co., Ltd

¹⁰ Source: BOE 2009 Annual Report

¹¹ Source: Wind

¹² Source: Wind

¹³ Source: Statista

¹⁴ Note: DRAM is a type of semiconductor memory that is typically used for the data or program code needed by a computer processor to function.

¹⁵ Note: Gigadevice Semiconductor, founded in 2005, was at the time already a local industry leader in flash memory chip products.

¹⁶ Source: Wind

¹⁷ Note: Zombie companies are generally dependent on the refinancing of maturing debt for their continued existence, and may face solvency risks should interest rates rise or investors withdraw from further financing.

¹⁸ Note: LDK Solar manufactured multicrystalline solar wafers.

¹⁹ Source: ChangXin Memory Technologies Supplies Chinese Consumer DRAM Market <https://www.forbes.com>; Jun 9, 2021

²⁰ Source: BOE 2009 Annual Report, Gigadevice 2017 Annual Report, NIO 2019 10-K

Important Disclosures

The above information reflects opinions of Morgan Creek Capital Management, LLC (“Morgan Creek”) as of the date it is written and, as such, all such opinions are subject to change. No representation or warranty, express or implied, is given by Morgan Creek as to the accuracy of such opinions and no liability is accepted by such persons for the accuracy or completeness of any such opinions. Further, Morgan Creek does not warrant the accuracy, adequacy, completeness, timeliness or availability of any information provided by non-Morgan Creek sources.

Morgan Creek Capital Management | 301 W. Barbee Chapel Road, Suite 200, Chapel Hill, NC
27517

[Unsubscribe ljacob@morgancreekc.com](mailto:ljacob@morgancreekc.com)

[Constant Contact Data Notice](#)

Sent by myusko@morgancreekc.com