

# CHINA IN 2022

OUR ANNUAL RECAP OF KEY MARKET DEVELOPMENTS THAT EXECUTIVES SHOULD KNOW ABOUT

December 2022

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Dear Readers and Business Partners,

A year with unprecedented challenges comes to an end and with it the time for us to weigh up 2022. In our entire China consulting practice, spanning more than 30 years, we have never encountered such a series of political and economic shockwaves – both internationally and within China. The Russian war in Ukraine followed by soaring energy prices, sky-high inflation and the increasing ideological bloc formation as well as escalating geo-political tensions between the US and China leading to a new height of trade and technology sanctions were not only unfavorable elements added to the global ‘crisis cocktail’ but also point to an end of unconditional globalization. The shadow of ‘decoupling’ broadens while European governments are still grappling to define their position towards China.

Domestically, periodic lockdowns as part of its Zero-COVID policy resulted in global supply chain disruptions and international travel restrictions. Rising economic pressure and the slump of the real estate industry prompted widespread uncertainties and waning consumer confidence. In its 20<sup>th</sup> National Congress, China’s communist party placed a strong focus on high-quality development and national security. The following G20 Summit in Bali demonstrated both the benefits and strict limits of US-China diplomacy. Hopes remain high that the two superpowers can work to stabilize political ties amidst these daunting global economic challenges.

The outlook for 2023 remains somewhat modest: while decoupling is here to stay as an irreversible trend, international companies operating in China are tasked with reviewing their China strategy to both seize long-term growth potential and to build in foundations to reduce possible risks and to strengthen the resilience of their global, regional, and local value chains. With our profound local market expertise, amplified by our industry expert network and co-operation partners we stay committed to supporting our clients in navigating through the challenges that lie ahead.

As every year, we have compiled another review “China in 2022”. Based on our insights from consulting projects we are more than happy to share our market and industry perspectives. Additionally, we will continue to keep you updated with our monthly “China Newsletter” and invite you to subscribe. On behalf of our teams across the offices in Munich, Mumbai, Kuala Lumpur and Shanghai, we thank you for your trust in us during 2022 and wish you a healthy and successful year ahead. Just as we conclude our annual recap, we see an acceleration in ease of COVID restrictions in China. Nonetheless we recommend staying cautious as immediate consequences – positive and negative – are yet to be seen. We wish you and your families a happy and prosperous holiday season and all the best for 2023.

Your EAC Shanghai Team



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# THE BIG PICTURE – REVIEW OF OUR LAST YEARS PREDICTIONS

Let's take a look at our attention points and predictions from 2021 EAC China Review...

**Reality Check:** *China introduced a more rigorous Zero-COVID policy with massive regional lockdowns throughout the year. Unprecedented shift “from Zero-COVID to Zero-Control” in Dec. 2022.*

**Reality Check:** *With 3.0%, GDP growth failed previous expectations as result of COVID-induced supply chain disruptions, real estate slump and waning consumer confidence.*

**Reality Check:** *With further consolidation of power, focus on both high-quality growth and national security - ideology trumps economy.*

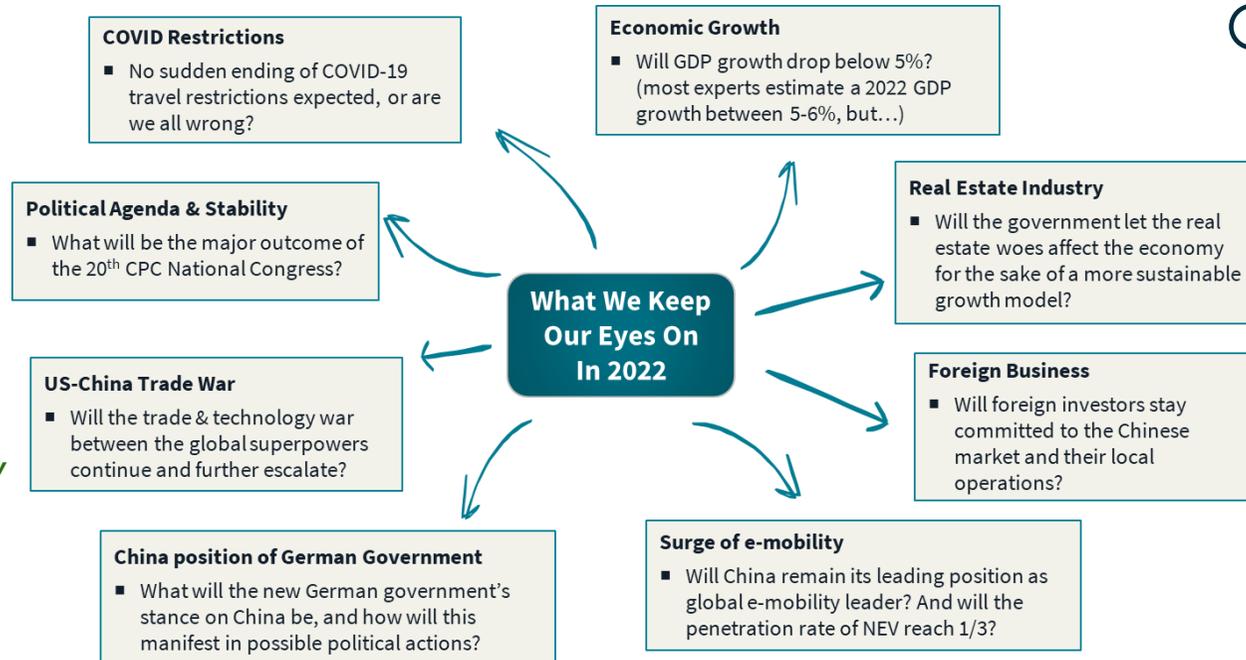
**Reality Check:** *Not only continued but further escalated with the US Semiconductor Export Ban in Oct. 2022 as latest example.*

**Reality Check:** *Clear stance still to be seen. Besides China visit of chancellor Scholz, German Government stepped up its rhetoric towards China and is in process to develop a China Strategy in 2023.*

**Reality Check:** *Another explosive growth of NEV sales in China with 6.7 mln vehicles in 2022 – YoY growth of >90% and penetration rate of 25%.*

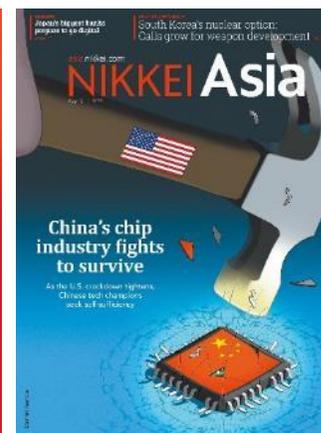
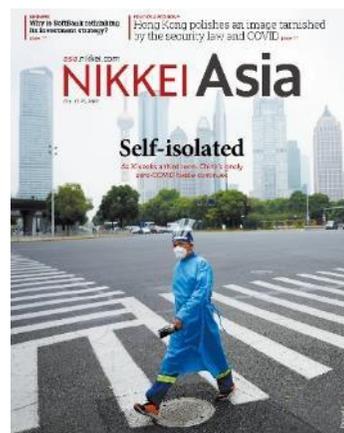
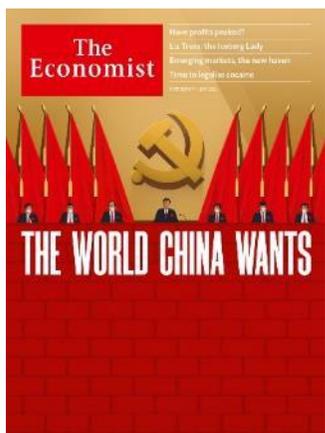
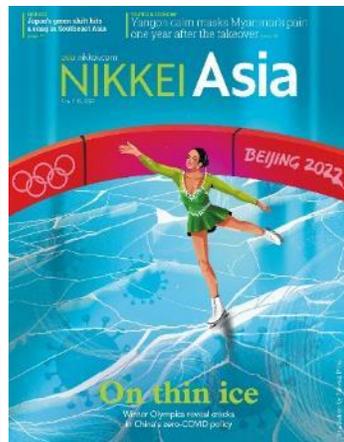
**Reality Check:** *After decrease of prices and property sales as well as build-up of backlog of undelivered apartments, government stepped in with new measures to stabilize the sector.*

**Reality Check:** *With FDI still increasing, shift from investments to building supply chain resilience as difficulties in doing business increase.*

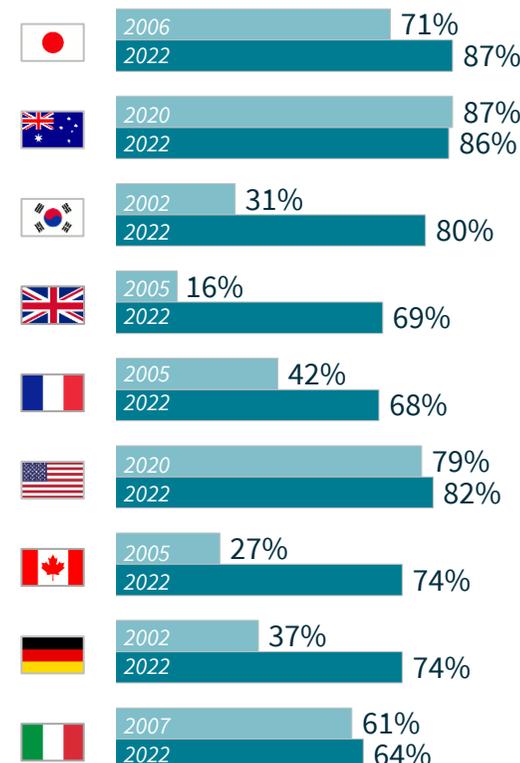


# THE BIG PICTURE – CHINA NARRATIVES

International cover pages in 2022 reflect foreign perspectives on the country's changing approach to business regulation and geopolitics – unfavorable views of China are on the rise



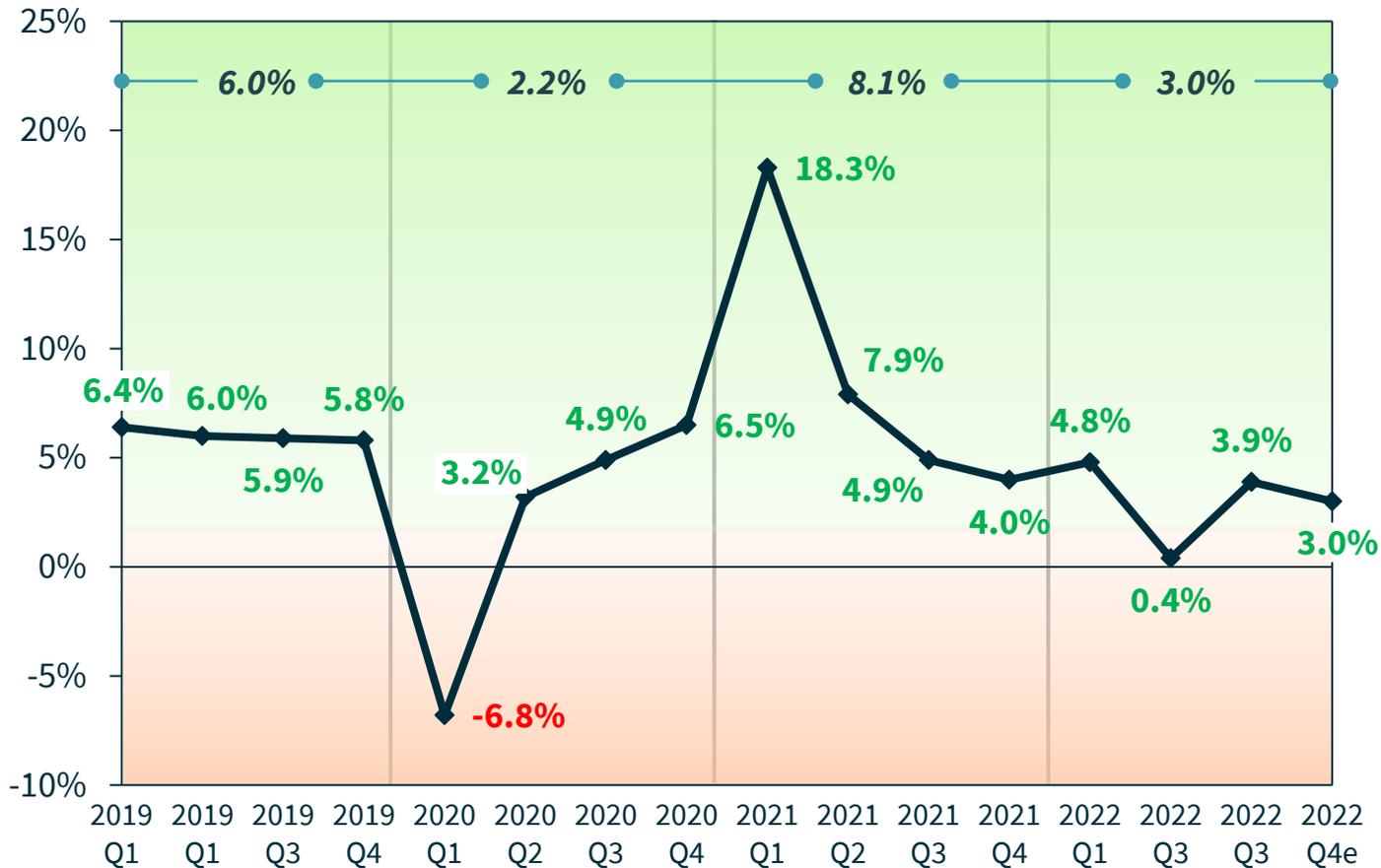
Share of population having a very or somewhat unfavorable view on China (Past vs. 2022)



# THE BIG PICTURE – RECOVERY OR NOT? (1/2)

Despite fast economic recovery in 2021 (GDP growth: +8.1%), on-going Zero-COVID policy and further lockdowns increased pressure on economic growth throughout 2022 (GDP forecast: +3.0%)

## CHINA QUARTERLY GDP GROWTH (YEAR-ON-YEAR)



- ❖ **Strong rebound in 2021** after COVID-breakout with **8.1% GDP growth**
- ❖ **Slowing growth since late 2021**, continued 2022 impacted by:
  - COVID lockdowns
  - Slow global growth
  - Weather conditions
  - Property market
  - Consumer confidence
- ❖ **GDP growth of 3% in 2022**, mid-term structural growth slowdown to continue

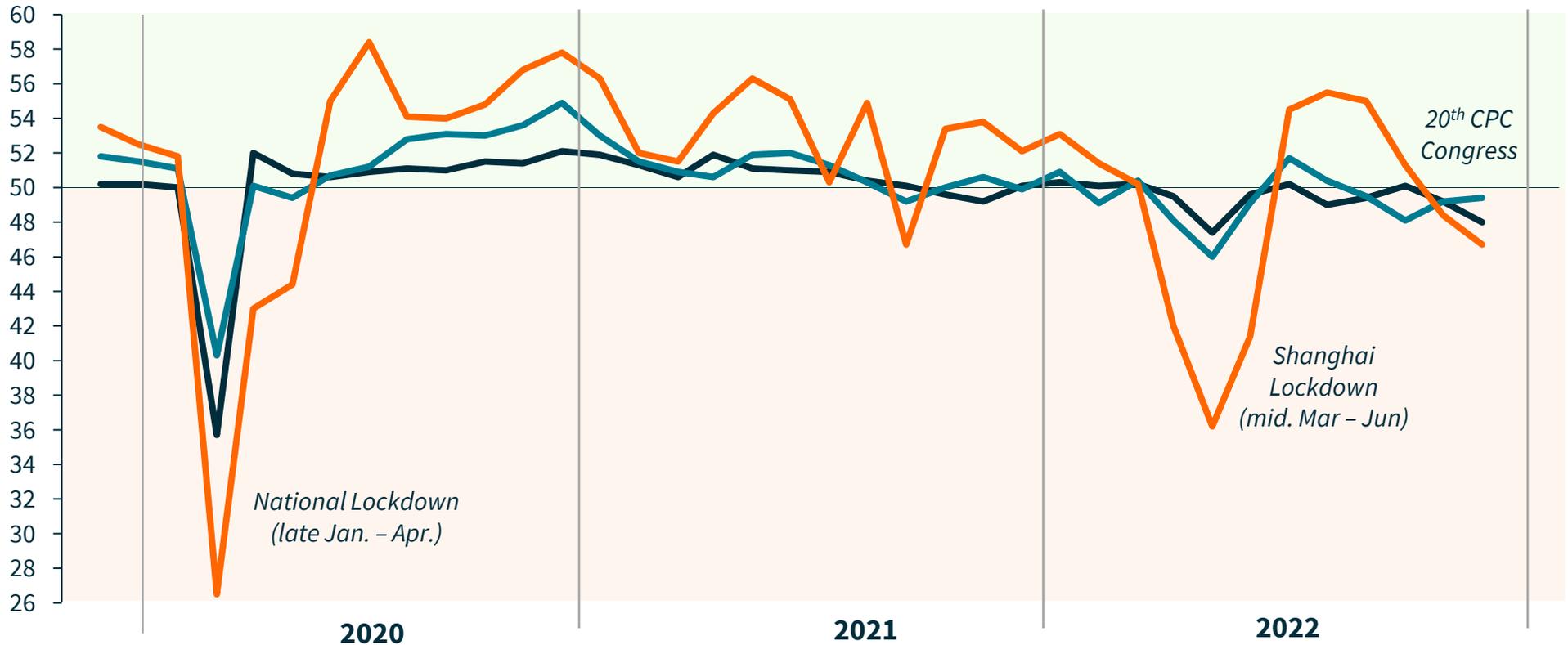
# THE BIG PICTURE – RECOVERY OR NOT? (2/2)

Significant COVID impact parallel to complex international environment caused continuously declining PMI in 2022 (up to Nov. 2022), especially for the service industry

## CHINA PURCHASING MANAGER INDEX (PMI)

— Official PMI<sup>1)</sup> — Caixin Manufacturing PMI<sup>2)</sup> — Caixin Service PMI<sup>2)</sup>

Values >50 indicate a positive outlook, <50 a negative outlook



1) mostly large and state-owned companies  
2) mostly small, private manufacturers & service companies

Note: January and February combined in official data

# CHINA'S ZERO-COVID APPROACH 2022

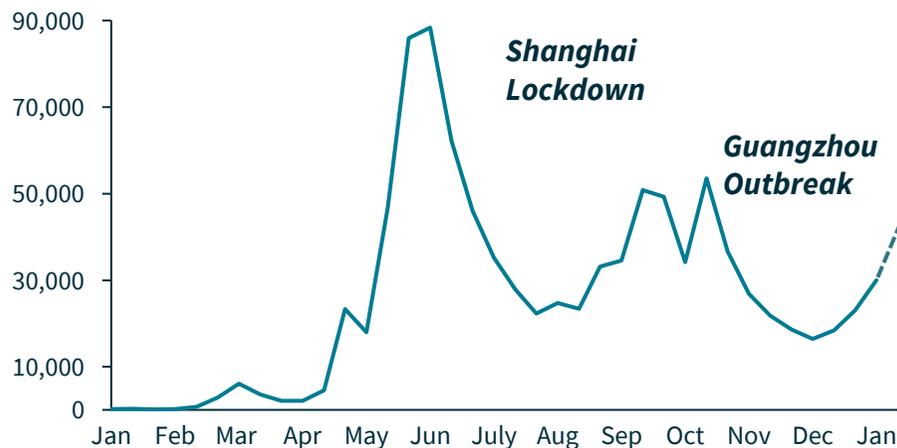
China strictly followed the “Zero-COVID” policy approach till end of the year, and two waves of pandemic hit China in first half of the year and end of the year in 2022

## CHINA'S PROPOSITION ON “ZERO-COVID” POLICY

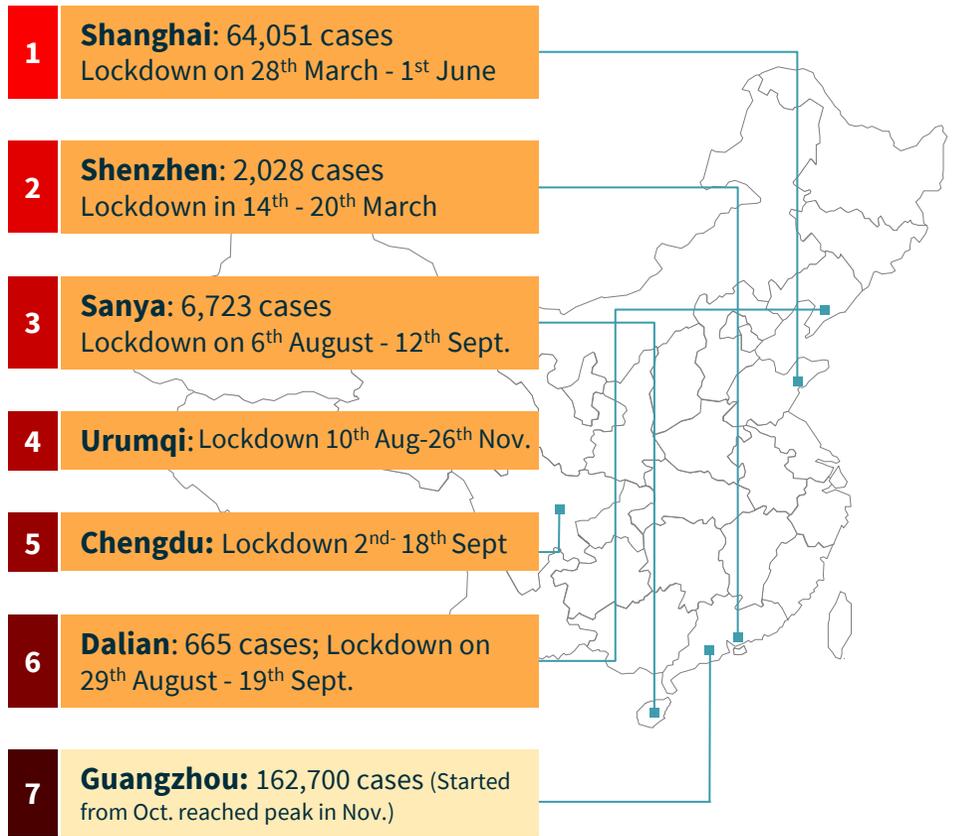
- “...**adhere to scientific and accurate dynamic clearing** (“COVID Zero”) to **curb the spread of the epidemic as soon as possible...**” - Xi Jinping, President of PRC
- “...‘**Dynamic clearing**’ is not to pursuit absolute zero infection...but **to control spread in the shortest and to avoid large-scale epidemic rebound ...**” – Ma Xiaowei, Director of NHC



## COVID NEW CASE DEVELOPMENT BY MONTH IN 2022



## SELECTED CITY-WIDE LOCKDOWNS 2022<sup>1)</sup>



Whole city lockdown      High risk area lockdown

1) Cumulative cases, data as before 12<sup>th</sup> Dec, 2022

## China’s economic growth will “keep picking up” as the government implements the recent changes to COVID control policies

“...China will **better coordinate COVID control and economic development, safeguard people’s health and maintain normal production ...**” – Li Keqiang, Premier of PRC, 7<sup>th</sup> Dec. 2022



“The (current) Omicron mutation... **is very contagious**... one person can transmit to 22 people,” “Currently, the epidemic in China is... spreading rapidly, and under such circumstances, **no matter how strong the prevention and control is, it will be difficult to completely cut off the transmission chain.**” – Zhong Nanshan, China’s Top Medical Adviser , 10<sup>th</sup> Dec. 2022

### **EAC Insights: The year ahead will embrace this Remarkable Change of Direction**

Although it is premature to predict the exact implications for business, China has responded to public concerns and economic damage by a necessary change in its COVID-19 policies, but big challenges lie ahead

#### **Top priorities from Beijing policymaker perspective**

- ❖ Boosting overall consumer confidence
- ❖ Improving overall improvement of economic activities
- ❖ Expanding substantially domestic demand
- ❖ Aim for a GDP growth of around 5% in 2023

#### **While longer-term confidence about the recovery remains unshaken, there would be things to watch out for**

- ❖ Shortage and insufficiency in medical resources in China
- ❖ Risk of COVID outbreak during Chinese New Year
- ❖ Potential inflation surge after reopening

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After decades of whopping economic growth, China's focus to shift to high-quality growth besides ideology and security likewise as important

## SHIFT IN ECONOMIC FOCUS

- ❖ **Focus on high quality growth** instead of debt-driven ultra-high growth numbers
- ❖ **Ideology and key policies partially more important** than economic growth
- ❖ **Self-sufficiency increasing in focus** as relationship with advanced economies of western countries expected to further deteriorate
- ❖ **Potentially more focus on domestic companies** – foreign companies need to provide value-add to China's economy

## IMPLICATIONS FOR FOREIGN COMPANIES

- ❖ **Increasing focus on *China for China*** – instead of *China for global*
- ❖ **Regular risk assessment of setup in China and positioning / value-add**
- ❖ **Preparation for separate value chains China vs. west** – strengthening of other locations, e.g., Southeast Asia, for global production

## High-quality development mentioned as top priority – a shift in economic policies away from debt-driven infrastructure spending to be expected in the coming years

### CONGRESS COMMUNICATION



*To build a modern socialist country in all respects, we must, first and foremost, pursue high-quality development... Pursuing high-quality development as our overarching task...*

*– Xi Jinping (20<sup>th</sup> National Congress Report)*



*In pursuing economic growth, we must continue to focus on the real economy. We will advance new industrialization and move faster to boost China's strength in manufacturing, product quality, aerospace, transportation, cyberspace, and digital development.*

*– Xi Jinping (20<sup>th</sup> National Congress Report)*

- ❖ The report restated the goal to achieve basic socialist modernization by 2035, which is in line with the 14<sup>th</sup> FYP and the 2035 long-term plan
- ❖ To achieve high-quality growth, long-term themes highlighted in the 14<sup>th</sup> Five-Year Plan (FYP) were reiterated, such as tech and innovation, new urbanization, and green development

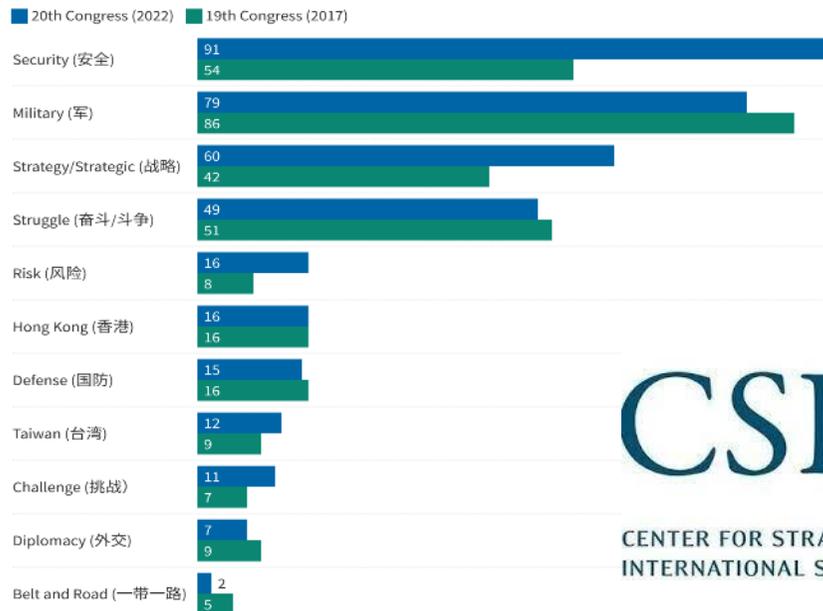
### EAC TAKE

- **Lower GDP growth** to be expected going forward
- More focus on **“healthy growth” – less debt-driven growth, less over-investment in infrastructure**
- Growth **focus on selected key industries** – as outlined in *Made in China 2025*
- Even more important to understand **Chinese growth drivers, industries with the best potential and how to win in these areas**
- Still abundant **opportunities in China but companies need to do “their homework” to spot these opportunities**

A growing focus on national security (incl. food, energy, supply chain) – a more localized approach (China for China) is gaining increasing importance for foreign players

## CONGRESS COMMUNICATION

### Mentions of Key Phrases in Xi Jinping's Party Congress Reports




CENTER FOR STRATEGIC & INTERNATIONAL STUDIES



*We will resolutely safeguard the security of China's state power, systems, and ideology and build up security capacity in key areas. We will ensure the security of food, energy, and resources as well as key industrial and supply chains.*

– Xi Jinping (20<sup>th</sup> National Congress Report)

## EAC TAKE

- China will further **push for self-sufficiency and national security in critical aspects** – recent geo-political development further accelerate this trend
- For foreign companies it is **increasingly important to create resilient supply chains** – this implies to have a **separate supply chain for China and western countries**
- **China for global will increasingly be challenged** by restriction of US and other countries on imports from China – **Southeast Asia and other regions emerge as new hubs**
- Generally, **more regionalization can be observed in the value chain setup** – as well to counter potential logistics disruptions

## China vows efforts to ensure food security and clean energy

### FOOD SECURITY



Per capita share of grain

**483.5 kg**

Higher than internationally recognized security line of 400 kg



Total farmland

**1.918 bln acres**

(127.87 mln hectares)



Standard warehouses grain storage capacity

**700 mln tons**

#### Emergency-responding system



**6,000**

Grain processing enterprises



**53,000**

Supply outlets



**4,199**

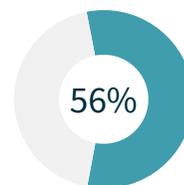
Storage and transportation enterprises



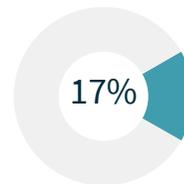
**3,047**

Distribution centers

### CLEAN ENERGY



Share of **coal consumption** in 2021  
12.5% points lower than in 2012



Proportion of non-fossil energy consumption in 2021



Annual overall energy production capacity

**4.6 bln tons** of standard coal by 2025



Clean energy consumption proportion

**20%** by 2025

**25%** by 2030

*Clean energy incl. wind power, solar power, hydropower and nuclear power*

## Strong push to expand institutional framework and standard setting as additional goal China wants to pursue

### CONGRESS COMMUNICATION



*We will steadily expand institutional opening up with regard to rules, regulations, management, and standards, promote the high-quality development of the Belt and Road Initiative, maintain a diversified and stable international economic landscape and trade relationship...*

*– Xi Jinping (20<sup>th</sup> National Congress Report)*



#### *Institutional opening up*

Expand the alignment between China and the world in terms of rules, regulations, management, and standards, such as strengthening the protection of rights of foreign investors and IP

- ❖ Move from opening up based on flows of goods to opening up based on regulations
- ❖ Expand institutional opening up means further easing market access for foreign companies and reducing the negative list for foreign investment
- ❖ Accelerated development of trade ports and corridors with BRI partners

### EAC TAKE

- China communicated more opening up in terms of rules and regulations, as already communicated before – **results to be checked for progress**
- With its growing global importance China wants to **shape the global order more than it did in the past**, and not just take the status quo as given
- **Increasing tensions in global institutions possible** as different world views on China and the west arise
- **Stronger focus on lobbying activities** and government affairs of foreign companies – integrated part of local eco-system

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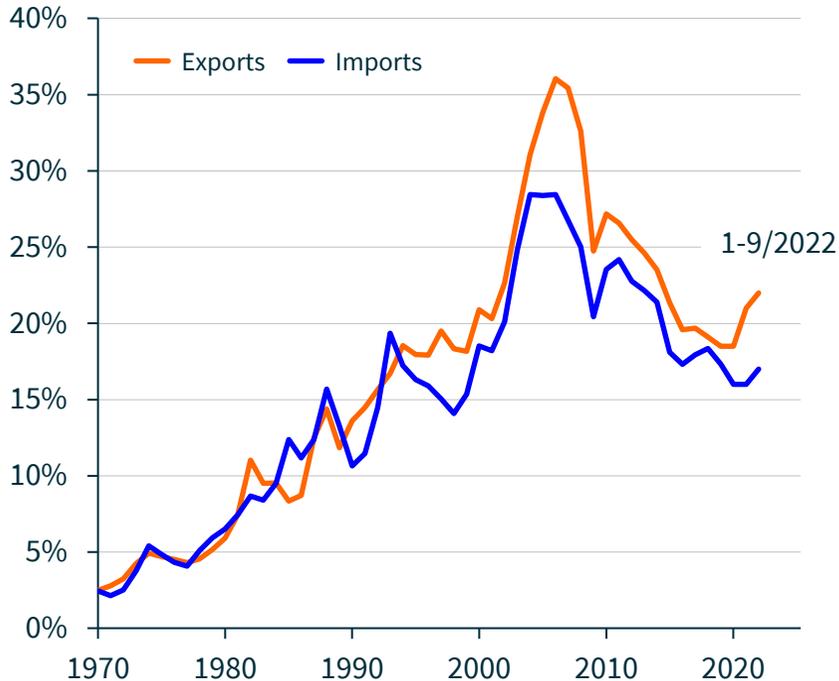
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China has shifted from an export-led to a consumption-led growth model, but the country is still highly engaged in foreign trade – with a strong increase in the post-COVID period

## IMPORTANCE OF EXPORTS HAS DECREASED...

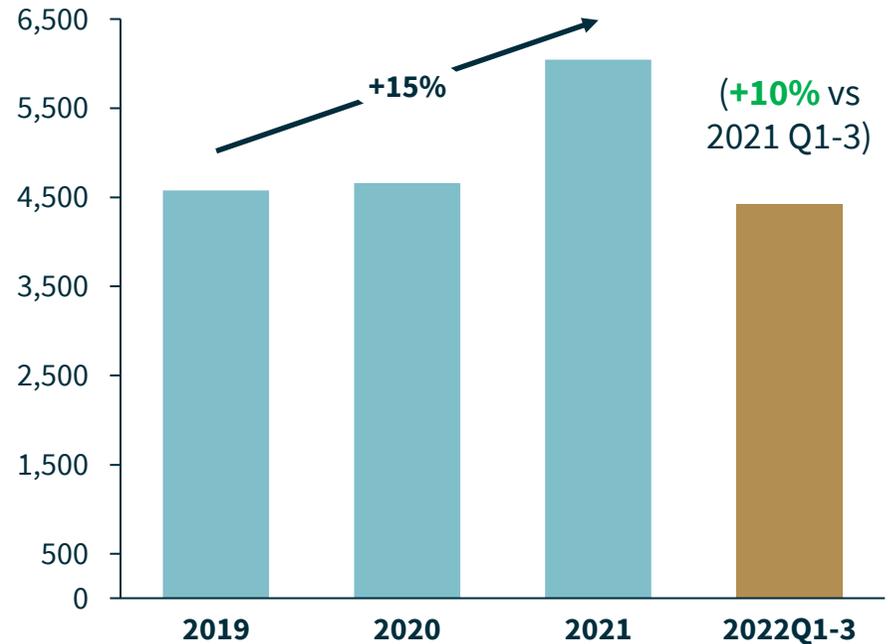
Share of GDP



**Foreign trade gaining importance:** Despite China has shifted from an export-led to a consumption-led GDP consumption, foreign trade gaining more important in the post-covid period

## ...BUT TRADE IS STILL GROWING MODERATELY

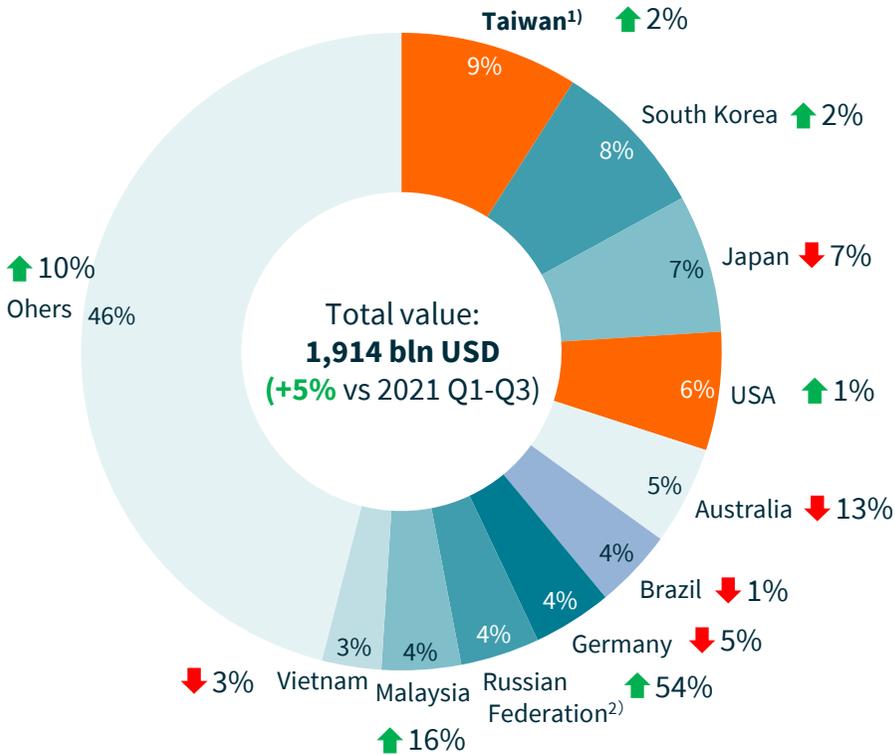
Total Trade Value Bln USD



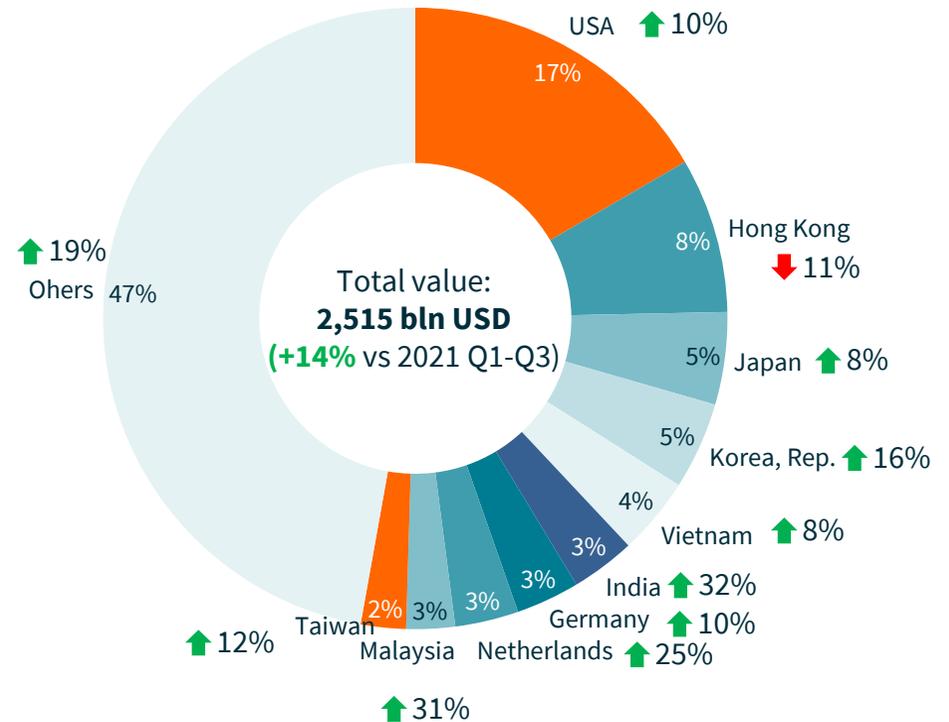
**No decoupling or isolation evident for now:** the total value of exports and imports strongly rebounded after global COVID impact in 2022

Despite uninterrupted calls for decoupling, China’s trade with major countries is still expanding – Taiwan and USA still remain important trade partners in 2022 (Q1-3)

**CHINA IMPORT VALUE BY COUNTRY/REGION (2022 Q1-3)**



**CHINA EXPORT VALUE BY COUNTRY/REGION (2022 Q1-3)**



**Absolute value change 2022 Q1-Q3 vs 2021 Q1-Q3:** ↑ Increase ↓ Decrease

1) Imports from Taiwan consist to ~50% of mechanical and electrical products incl. semiconductor chips

2) Fossil fuel imported from Russia highly increased in 2022

While German exports to China experienced steady growth in past 10 years, 2022 saw a drop of 6.1% - partly attributed by intensifying hype over ‘reducing dependency on China’

### GERMAN EXPORTS TO CHINA (BLN USD)



Source: Ceicdata; Gotohui; General Administration of Customs. P.R.CHINA

## Strong business relationships with China are increasingly questioned in Germany – partially seen as causing a too strong dependency

### AS SENTIMENT TOWARDS CHINA CHANGES...

- **Increasing resistance for Chinese engagement in Germany / German dependency on China**, e.g., fierce political discussion about Chinese shipping giant COSCO acquiring a stake in the Hamburg port
- **Public opinion regarding China rapidly deteriorating**: 74% of Germans now hold an unfavorable view of China (according to PEW research center)
- Ukraine war **highly increased skepticism of dependencies and strong ties with authoritarian countries**

*“The lesson is that we must **reduce lopsided dependencies wherever we can. This applies in particular to China.**” - President Frank-Walter Steinmeier*

*“As it is well known, we clearly stated that **China is our partner on global issues.** We cannot decouple in a globalized world, **but China is also a competitor and increasingly a systemic rival**” – Foreign Minister Annalena Baerbock*

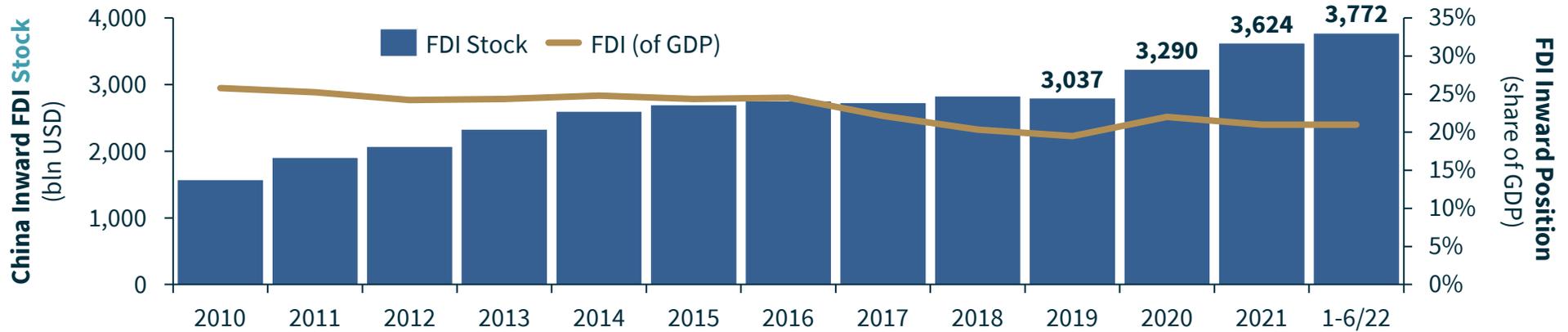
### ... CHANCELLOR SCHOLZ VISITS CHINA

- **Scholz’s meeting with Xi Jinping** on 4<sup>th</sup> November in China
- German delegation included **various CEOs of German MNCs** which caused criticism in Germany and beyond
- Continuation of **strong business ties**, e.g.
  - Chemical giant BASF recently announced a USD 10 bln investment in a factory in Zhanjiang, Guangdong Province
- Besides business topics **Ukraine war one of the main discussion points**
- Additional points mentioned, e.g., **human rights issues and global cooperation**
- **“Decoupling is the wrong answer”** – Chancellor Scholz



Despite negative sentiment, foreign direct investment into China has increased during the past years and reached a new height in first half year 2022 with 112 bln USD (+21.7% YoY)

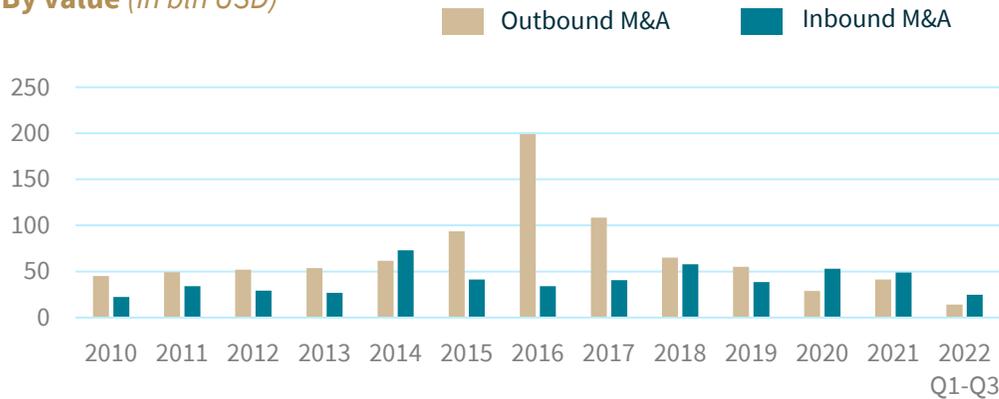
## CHINA INWARD FOREIGN DIRECT INVESTMENT



**Inbound M&A activities were overshadowed by the explosive outbound deal flow, no. of inbound deals being stable at 200-300 p.a. during 2013 – 2021 except 2020 the year of COVID outbreak**

## CHINA CROSS-BORDER M&A MARKET 2010 – 2022 Q3

**By value (in bln USD)**



**By volume (no. of deals)**



## EAC OBSERVATIONS

### China cross-border M&A development

- Number of inbound deals relatively stable at around 200-300 per annual during 2013-2021 except 2020, the year of COVID outbreak
- China outbound M&A peaked in 2016 but declined a bit afterwards due to government scrutiny on outbound investment and COVID outbreak

### Inbound Transaction

- Since the slowing down of China economy and the reshuffle of several industries, foreign companies meet limitation to further grow business in China, which forces to consider inorganic growth option
- Family-owned and well-developed business but lack of succession plan are interesting acquisition targets
- The harsh Zero-COVID policy is hampering the foreign investment in 2022

### Outbound Transaction

- Strategic outbound deals in line with industrial upgrade and Belt & Road were still growing, but investment in non-strategic or passive assets in sectors declined

Asia, Western Europe and North America as major bidders for China inbound M&A, expected to see more inbound M&A deals due to government’s encourage on inflow investment

## TOP 5 BIDDERS 2019 COMPARED TO 2022

2019			2022		
Rank	Region	# deals	Rank	Region	# deals
1	Asia (excl. HK)	43	1	Asia (excl. HK)	28
2	<b>Western Europe</b>	<b>40</b>	2	<b>Western Europe</b>	<b>25</b>
3	North America	32	3	North America	25
4	Middle East	1	4	Latin America	2
5	Latin America	1	5	CEE	1

## TOP 5 TARGET INDUSTRIES 2019 COMPARED TO 2022

2019			2022		
Rank	Industry	# deals	Rank	Industry	# deals
1	Industry & Chemical	44	1	TMT	30
2	Business services	30	2	Industry & Chemical	29
3	Consumer	26	3	Consumer	16
4	TMT	24	4	Business services	14
5	Healthcare	22	5	Healthcare	13

## INSIGHTS

- **Asia and Western Europe as the major bidders** for China inbound M&A
- From country perspective, **most frequent acquirers into China come from United States, United Kingdom, France**, while **Germany rank 6<sup>th</sup> in terms of frequency of deals during 2019-2022YTD**
- **Industrial & Chemical, TMT, Business service and Consumer-driven industry will continue to be “hot sectors”** for inbound M&A activities
- China’s approach to COVID-19 pandemic is presenting difficulties to those looking to enter the country and discouraging inbound M&A activities
- **However, we still expect to see the recovery of inbound M&A transactions because:**
  1. We see encourage from a number of government initiatives designed to further open up domestic market to foreign investors and further removal of restriction on foreign investment
  2. With the ease of COVID zero-policy, the foreign investment will gradually flow back to China market

**Western Europe becomes the top destination for China outbound M&A due to its relative liberal investment environment, advanced technology, management experience and brand reputation**

## TOP 5 DESTINATIONS 2019 COMPARED TO 2022

2019			2022		
Rank	Region	# deals	Rank	Region	# deals
1	<b>Western Europe</b>	82	1	<b>Western Europe</b>	39
2	Asia (excl. HK)	39	2	North America	27
3	North America	25	3	Asia (excl. HK)	25
4	Middle East	12	4	Latin America	14
5	Latin America	9	5	CEE	4

## TOP 5 TARGET INDUSTRIES 2019 COMPARED TO 2022

2019			2022		
Rank	Industry	# deals	Rank	Industry	# deals
1	Industry & Chemical	61	1	TMT	35
2	TMT	38	2	Industry & Chemical	25
3	Consumer	27	3	Healthcare	25
4	Energy & utilities	27	4	Consumers	17
5	Healthcare	19	5	Energy & utilities	12

## COMMENTS

- In context of trade conflict between China and US, **Western Europe becomes the top destination for China outbound M&A** due to its relative liberal investment environment, advanced technology, management experience and brand reputation
- From country perspective, **Germany, UK, France, Italy and Netherlands are the top 5 countries** within Europe which attract Chinese investors most in terms of deal volume during 2019-2022YTD
- **Industrial & Chemical, TMT and Pharmaceutical,** outpaced Energy, Mining & Utility and Pharma & Consumer as the **most attractive industries** for Chinese investors
- **China outbound M&A shifts from energy & resources driven towards technology, industrial know-how and market driven**

## Recent legislation in US and EU points to stricter treatment of exports to and imports from China

### US-CHINA TRADE TENSIONS

- **US and China hold several unresolved issues** surrounding the **bilateral trade** between the two countries
  - **Trade deficit between China and U.S.** has swelled immensely as the volume of imports from China grew much more rapidly than U.S. exports to China
  - **Sanctions in place and increasing**
- **Further import sanctions likely** – companies need to prepare in advance



### NEW EU LEGISLATION

- **New Supply Chain Act:** Companies must ensure compliance with human rights among their entire supply chain by 2024
  - **Climate protection legislation:** Increased tariffs on goods produced outside EU producing climate-damaging gases by 2026
  - Increasing pressure on companies to **understand their entire supply chain and act according to EU standards**
- **Increasing restrictions and costs for imports from China** – companies need to prepare in advance



## US further calibrated export controls on advanced chips & semiconductor manufacturing equipment and bans US citizens & green-card holders from working on certain technologies for Chinese companies

### TARGETED CHIPS BY NEW RULING

*Alongside the ‘Chips and Science Act’ and a sweeping set of export controls issues in 10/2022, the US further undermines China’s ability to import, manufacture, and export the semiconductors that run the world:*

*“Logic integrated circuits using a non-planar transistor architecture or with a “production” technology node of **16/14 nanometers or less**”*

*“**NOT AND (NAND) memory** integrated circuits with **128 layers or more**”*



*“**Dynamic random-access memory (DRAM) integrated circuits** using a ‘production’ technology node of **18 nanometer half-pitch or less**”*

### IMPACT IS SPREADING

- According to expert opinions, **China’s own equipment makers remain four to five years behind** their overseas counterparts, making them unsuitable as instant substitutes for equipment lost from US suppliers such as KLA Corp, Applied Materials and Lam Research. Therefore, **current production capacity of advanced chips can no longer be guaranteed**
- In the **US**, semiconductor companies, counting China as their largest single market, are **facing potentially severe damage to their revenues**. Other companies that manufacture high-end products in China must **recall US employees** as banned in the regulations.
- **Internationally, large chipmakers** such as Taiwan’s TSMC, South Korea's Samsung as well as Netherlands-based ASML, which make chip manufacturing equipment, are **evaluating their business** with China as they **explore how deeply the new rules will cut into their sales**.

# US SEMICONDUCTOR BAN – DIRECT IMPACT

Chinese semiconductor industry impacted heavily; market observers see China with limited measures to effectively react against ruling but setting export controls on rare earth to US



## IC DESIGN

intel SAMSUNG

BROADCOM

Qualcomm NVIDIA

MEDIATEK HISILICON

For IC design companies (up-stream), domestic GPU, CPU, AI brands (e.g. HUAWEI HISILICON) which **need advanced chips (14 nm or less) are impacted** by the new restriction.

## IC MANUFACTURING

tsmc SAMSUNG UMC

GlobalFoundries SMIC intel

华虹集团 HUAHONG GROUP 长江存储 YANGTZE MEMORY

Equipment provider

APPLIED MATERIALS make possible ASML TEL Lam RESEARCH KLA Keep Looking Ahead

**Advanced chip makers with 16/14 nm or less**, e.g. SMIC, YANGTZE MEMORY, are **highly impacted**. It is **tricky to keep the current capacity** due to **unavailability of core manufacturing equipment** and **critical spare parts**.

**Mature chip makers with 28 nm or above**, basically are **not impacted**. **China capacity expansion** is mainly **around these mature chip production**, which is also the main demand source for domestic equipment, parts and materials. Mature chip makers have almost **unlimited access to equipment** from all over the world, including US

## IC PACKAGING & TEST

ASE Amkor Technology

JCET SPIL

Powertech PTI Technology Inc. TF 通富微电

Tongfu Microelectronics

For IC packaging & test, it is down-stream with **low technical threshold**.

Additionally, Chinese players have **entered the area with some time** and **gained obvious advantage**.

**Impact is low** by the ruling

In mid-to-long terms it is expected that China will accelerate its industry upgrading and increase self-sufficiency, generating more demand for high-end technology & products

## ACCELERATING INDUSTRY UPGRADE

- China has **put priority on setting up its own IC supply chain**, but technology still lags US for at least 4 to 5 years
- **China-made equipment** can **basically support 55 nm at present**. However, it is impossible to build a 55nm pure domestic equipment (including imported parts) mass production line
- **China-made mature equipment** are **adopted in domestic production of mature chips (28 nm or above)**, mainly due to the **long delivery time** and **high price** of corresponding foreign equipment, as well as the **capacity expansion** of mature chip production **abroad**.
- The new restriction will **boost industry upgrading** in China and bring **broader market** for **high-end technology** and **products**



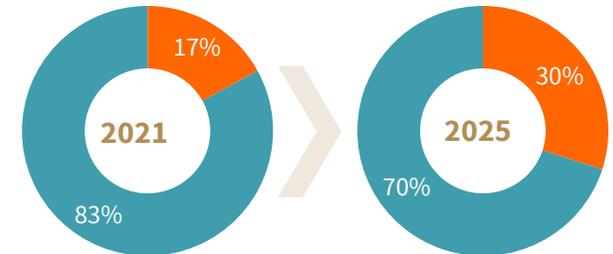
*“In August 2022, SMIC International released an announcement that it will build a 12-inch wafer factory in Tianjin with a planned construction capacity of 100,000 chips per month to produce 28nm~180nm chips. The total investment of the project is 7.5 bln USD (about 51.5 bln RMB)”*

## INCREASING SELF-SUFFICIENCY

- According to the State Council of China, China's chip **self-sufficiency rate** will **reach 70% by 2025**.
- In 2021, IC market China mainland totaled 186.5 bln USD (domestic consumption), and actual output value of chips manufactured in mainland China was only 31.2 bln USD, with a **self-sufficiency rate of about 16.7%**.

### IC production share of China IC market

- Domestic (incl. FIEs)
- Imports



- Unlike **high-end chips below 14nm**, used for high-end consumer electronics, AI devices and application processors, etc., 28nm chip products are widely applied in new energy vehicles, autonomous driving, home appliances, communications, as well as Internet of things equipment, routers, and other fields.
- **28 nm chips meet 90% of market demand**, thus **domestic production capacity** will be **further improved** to reduce dependence on imports and improve localization rate.

**EAC Relocation Probability Index 2022** shows that flexible supply chains close to consumers are becoming a crucial competitive advantage, with multiple locations across SEA and China benefitting

**How are Asian supply chains changing in a post-pandemic world?**

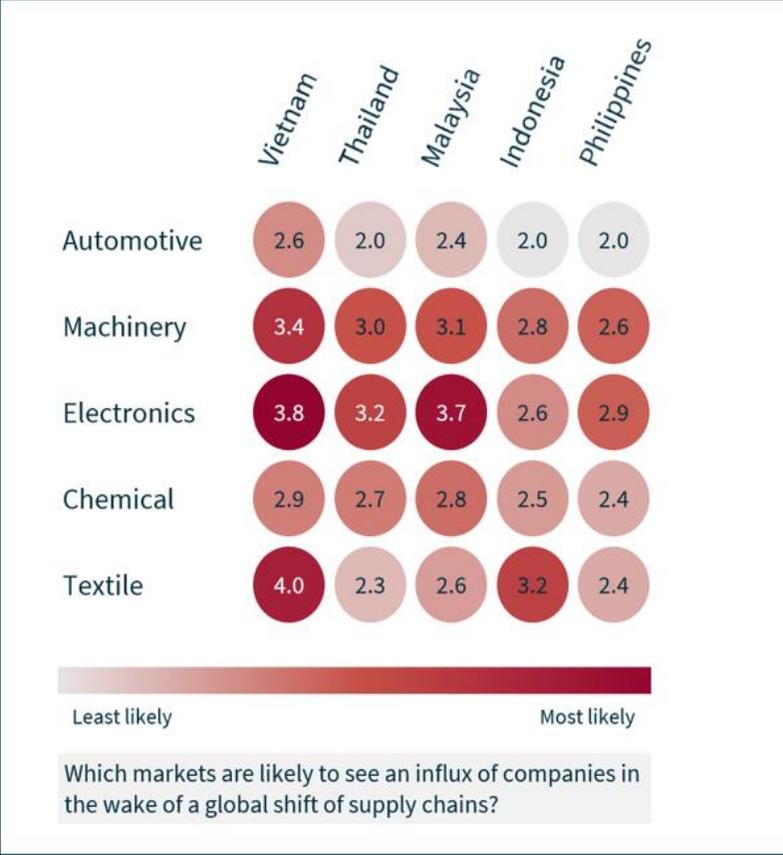
*A Review and Update of EAC’s Asia Relocation Probability Index 2022<sup>1)</sup>*

Since 2019, EAC publishes the Relocation Probability Index on an annual basis with a focus on Asia. The index looked at recent trends and indicators in international trade to analyze which industries are most likely to transform their supply chains and where companies are expected to go. At the time, the US-China trade war was accelerating an ongoing trend – the diversification of supply chains across globe.

Since then, the world has changed in previously unimaginable ways. Although tariffs between China and US remain firmly in place, the trade war faded into the background as a global pandemic disrupted supply chains and devastated economies. With less impact of pandemic and new China COVID policy in Dec. 2022, the current status is expected to be changed in 2023.

With business starting to normalize, we look back at how supply chains have developed under such influence and what can be expected in future.

*Latest update: Dec. 2022*



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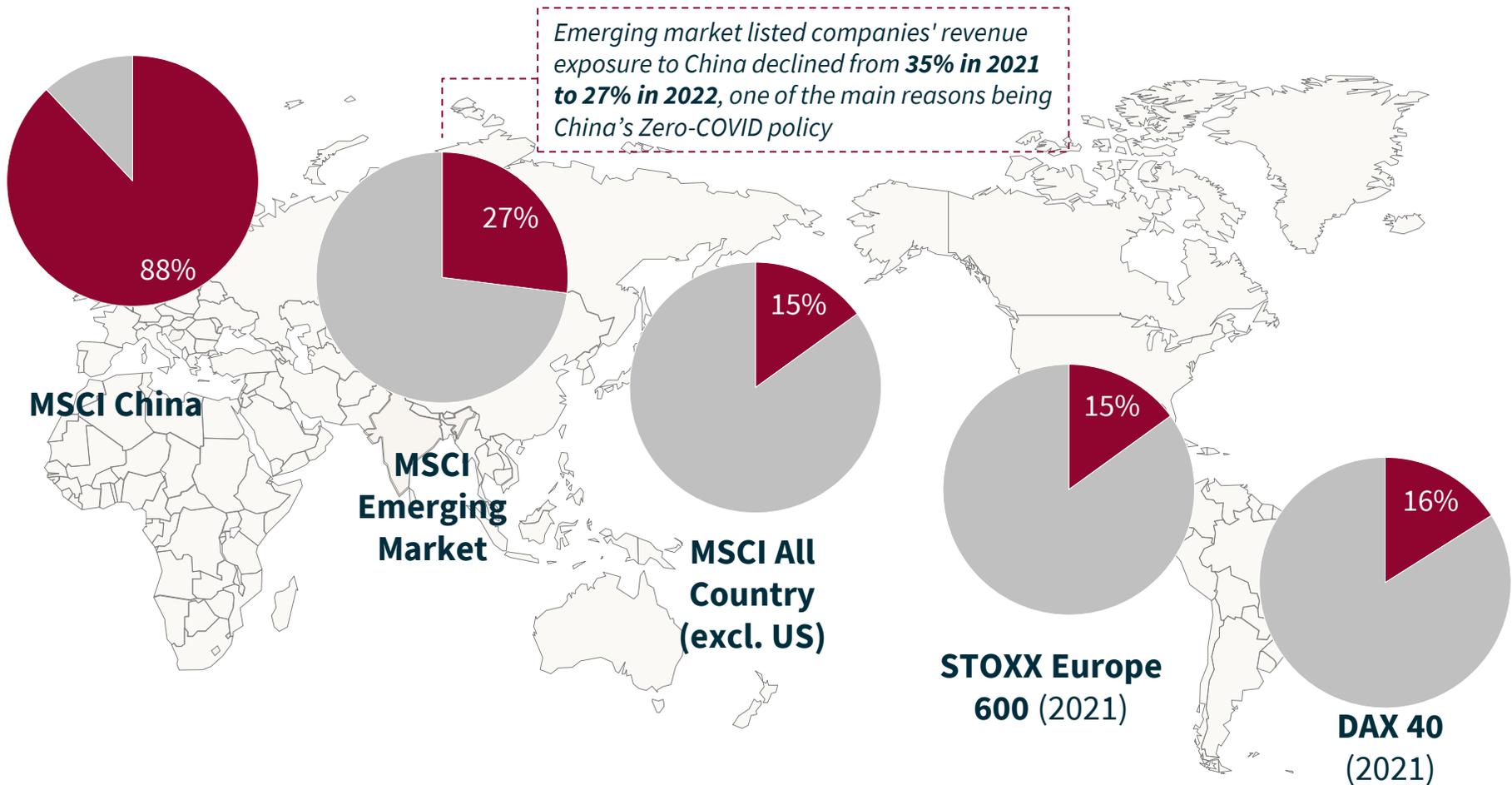
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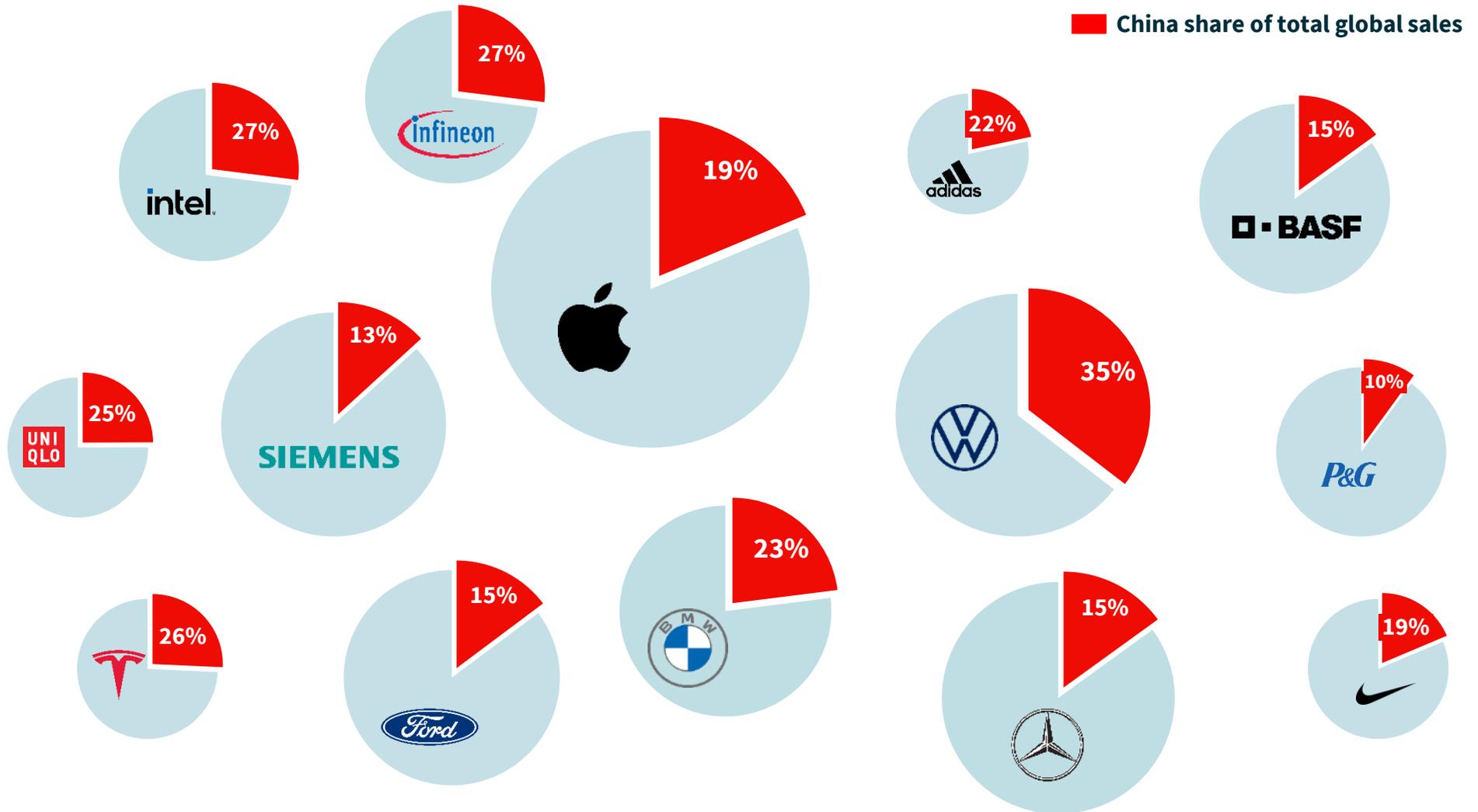
Revenue exposure to China of global publicly companies (excl. China-listed companies) stands around 7-27% globally, about 25% of the revenue of listed companies in emerging market comes from China

## GLOBAL REVENUE EXPOSURE CHINA 2022



# MNCs IN CHINA 2021 – DEPENDENCY OR GROWTH DRIVER?

China has become a key market for many MNCs, resulting in increasing dependency



EAC clients' feedback and European Chamber survey (published in June 2022) highlight persistent divergence between economic reality vs. political tensions, but also see signs of recovery

## CHALLENGING GEOPOLITICAL RISKS/ BUSINESS ENVIRONMENT

Respondents expressed that **geopolitical tensions and China's COVID control measures** continued to pose business challenges:

- ❖ 60% of businesses think that doing business in China has become more difficult
- ❖ Around 50% reported that COVID-19 posed the highest challenge in operating in China
- ❖ 42% of businesses say regulatory barriers are causing them to miss out on business opportunities

**Most companies experience mounting challenges...**

**VS.**

## POSITIVE MARKET DEVELOPMENT & FINANCIAL PERFORMANCE

However, European companies are also seeing **signs of post-pandemic recovery** in China:

- ❖ Vast majority of European companies achieved revenue growth and reported positive EBIT
- ❖ 62% European companies still intended to expand in China in 2022
- ❖ Only 11% are considering shifting current or planned investments out of China

**...but also witnessing recovery**

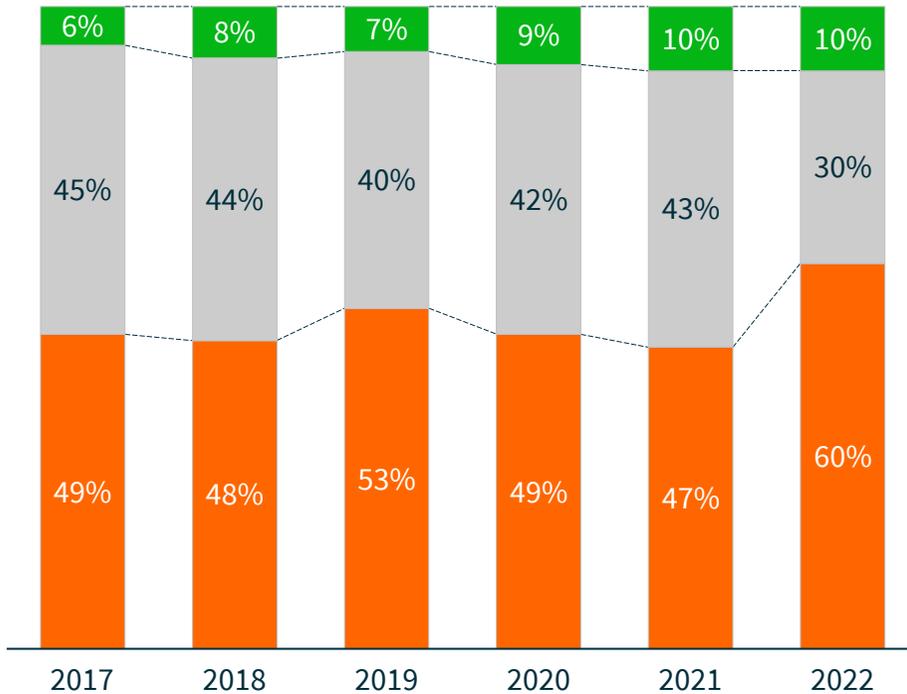
Of surveyed ~600 EU Chamber members, 60% consider doing business in China gets more difficult in 2022, the challenges business faced are dominated by the impact of COVID

JUNE 2022

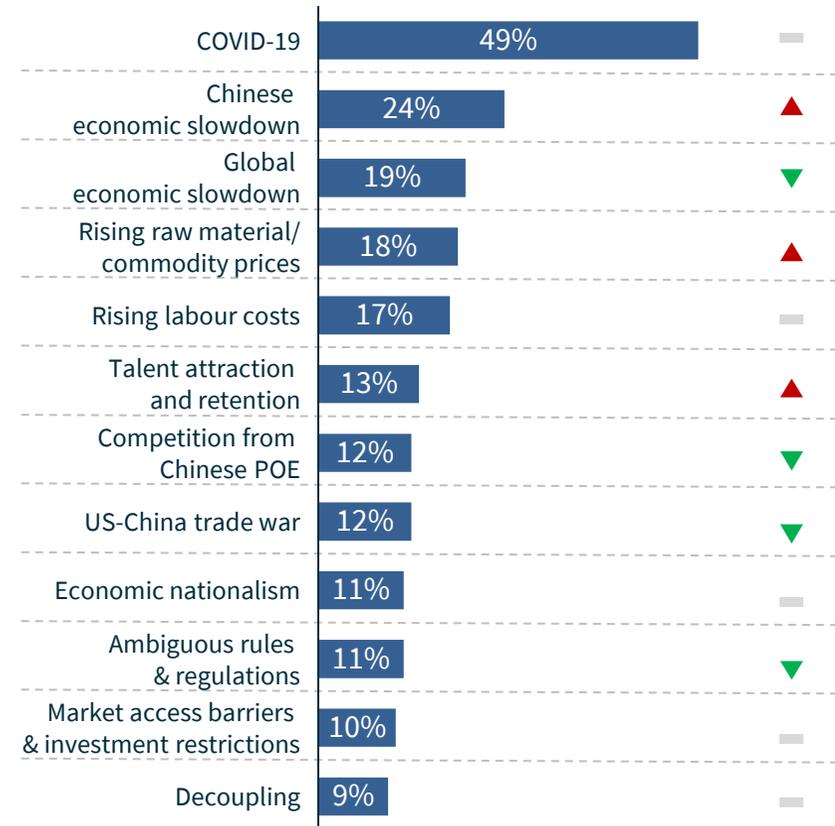
## BUSINESS DIFFICULTY IN CHINA

\*Survey time: March-April 2022

- Business has become more difficult
- About the same
- Business has become easier



## TOP 12 CHALLENGES 2021-2022



■ No change or N/A    ▲ Increase    ▼ Decline

**62% European companies still intended to expand in China in 2022 – meanwhile, 11% consider shifting investment out of China and 45% of them target shifting to the rest of Asia**

**JUNE 2022**

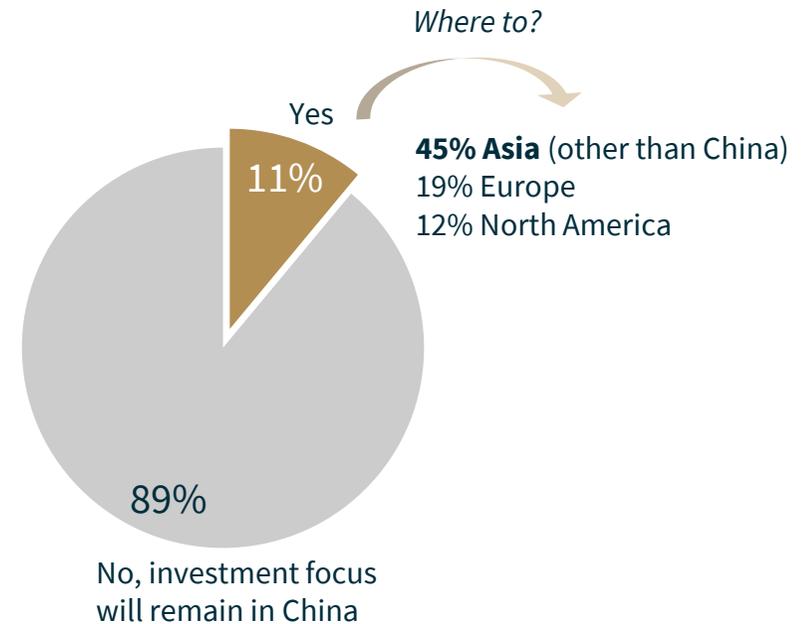
## EXPANSION INTENTION OF EUROPEAN COMPANIES IN CHINA

\*Survey time: March-April 2022

■ Yes, for expansion 
 ■ No expansion planned 
 ■ Undecided



## CONSIDERATION OF INVESTMENT SHIFT OUT OF CHINA (2022)



## Opportunities for European companies remain, but they must now develop strategies to deal with ever-growing list of risks within and outside of China



- On September 21<sup>st</sup>, 2022, the European Chamber published its **European Business in China Position paper 2022/2023**, based on the culmination of nine months of dedicated work of 41 working groups:



**Record number of 967 recommendations** shows increasing difficulties of doing business  
**HQs more actively consider alternatives to China** or at least additional locations

- The discussions compromises:
  - Shift of doing business in China from primarily assessing investment opportunities to now focusing on **building supply chain resilience**, due to the challenge and risks of Chinese business. How did China, the architect of the greatest economic growth story in history, lose its allure as an investment destination so quickly?
  - Shift of political behavior by now prioritizing **ideology over economic concerns** – China’s business environment is becoming **less predictable, reliable, and efficient**



Continuing down this path will have serious consequences incl. decreasing foreign direct investment, substantially lower GDP/ capita growth, a loss of scale and increased costs for companies, a global declaration of innovation, and an increased likelihood of geopolitical tension

After decades of putting economic growth first, the sense of members of the European Chamber of Commerce is that ideology plays an ever more important role within China

## THREE KEY MESSAGE FROM POSITION PAPER

- 1. Ideology trumps the economy** – break with successful reform agenda
- 2. Predictability, reliability and efficiency of the Chinese market challenged**
  - ❖ **Predictability:** Challenged by frequent, erratic policy shifts
  - ❖ **Reliability:** China no longer viewed as stable sourcing destination (from “just-in-time” to “just-in-case”)
  - ❖ **Efficiency:** Undermined as companies decouple their China and global operations
- 3. HQ attitude towards China shifting**

## FACTORS ERODING INVESTMENT ATTRACTIVENESS

- 1. Change in approach to policymaking**
  - ❖ Stronger focus on SOEs
  - ❖ Many crackdowns on business sectors
- 2. Entrenched COVID-19 challenges**
  - ❖ No clear exit plan
- 3. Loss of diversity and knowledge-exchangers**
  - ❖ Extremely limit international travel
- 4. Increased politization of business**
  - ❖ Increasing number of boycotts of foreign companies
- 5. Supply chain strategies are shifting**
  - ❖ Focus shifting from efficiency to resilience

## Mentioned factors erode China’s reputation as top investment destinations with potential severe long-term impact

### *Change in approach to policymaking*

- China strengthened its state-owned enterprises (SOE) at the expense of private enterprises (*‘One Economy, Two Systems’*)
- Policy making is less coordinated (e.g. technology and education sector crackdowns)

### *Entrenched COVID-19 challenges*

- Inconsistent policy implementation
- Uncertainty: no clear exit strategy

### *Loss of diversity and knowledge-exchangers*

- International inbound and outbound passenger numbers collapsed due to COVID policies
- Numbers rebound in other countries, but no rebound visible in China so far

### *Increased politicization of business*

- Increasing global political tensions impact businesses
- High number of consumer boycotts of foreign companies in China

### *Supply chain strategies are shifting*

- Focus shift from efficiency to resilience
- ‘On-shoaring’ and creation of divergent supply chains
- Increasing consideration of ‘friend-shoaring’, ‘near-shoaring’ and ‘re-shoaring’
- China’s center role of global supply chains increasingly challenged

## German companies' optimism reaches a historical low amidst the continuation of Zero-COVID policy and geopolitical tensions

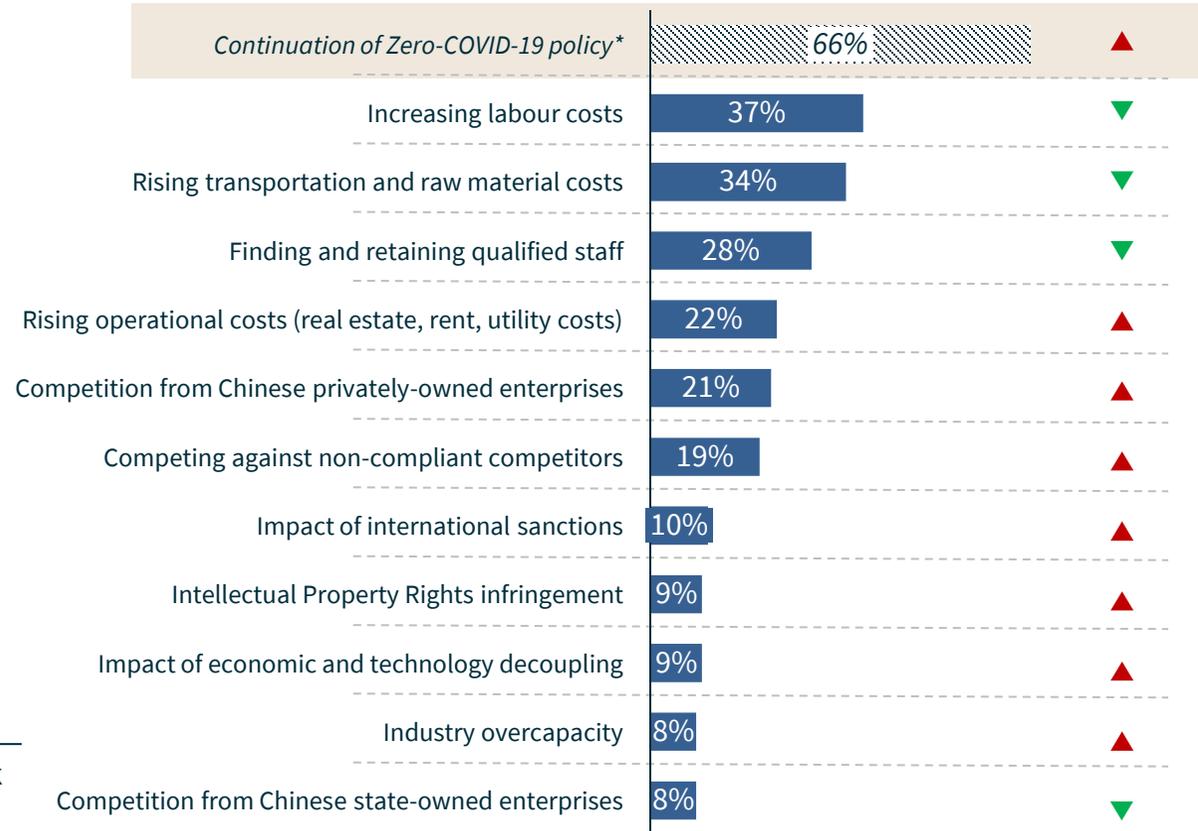
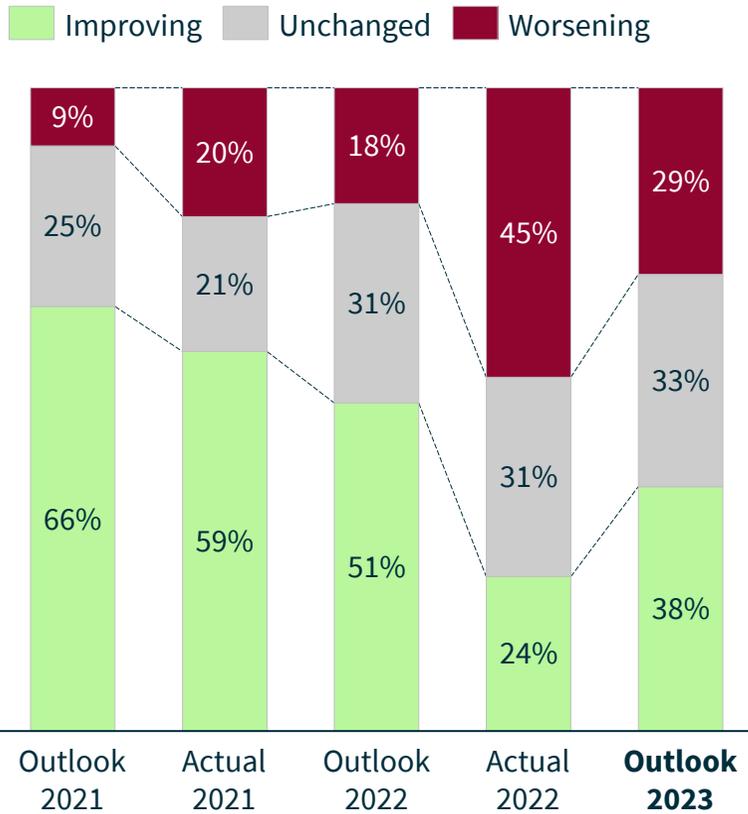
DECEMBER 2022

### GERMAN CHAMBER CHINA - BUSINESS CONFIDENCE SURVEY 2022/23

#### Business Expectation In China

\*Survey time: Aug-Sep. 2022

#### TOP 12 CHALLENGES 2021-2022



\* The confidence survey was conducted in September 2022 with strict measures of Zero-COVID policy. However, growing optimism is predicted after changes of regulations in early December 2022

▲ Increase ▼ Decline

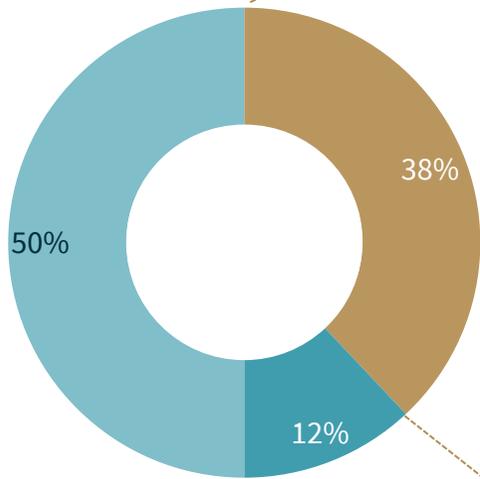
Concerns about the COVID control policy, geopolitical situation, and the low growth expectations for China market are the 3 main reasons for not planning to invest in China

DECEMBER 2022

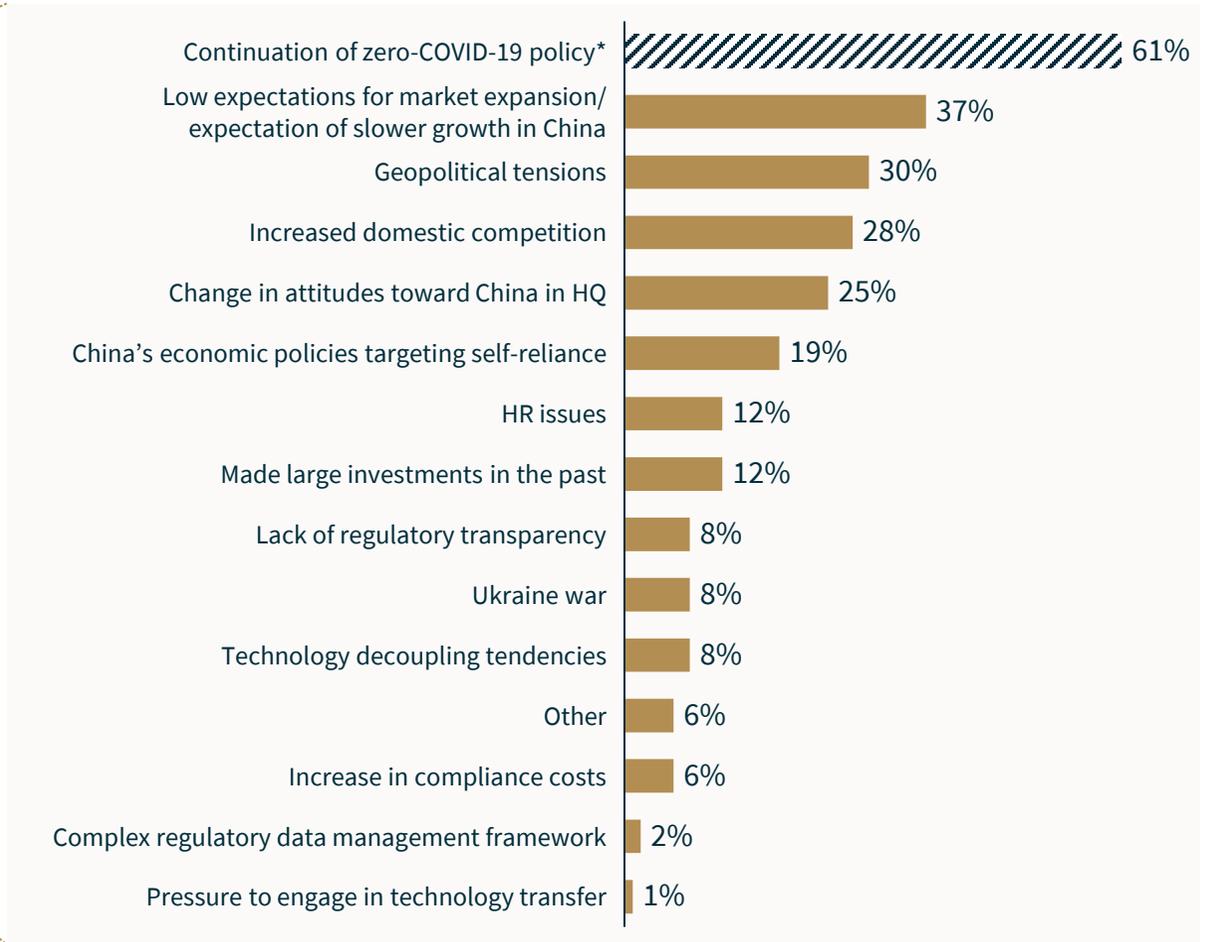
**“What are the main reasons for your company not to invest or decrease investments in China?”**

(n=216)

\*Survey time: Aug-Sep. 2022



- Plan not to invest or decrease investment in China
- I don't know
- Increase investment



\* The confidence survey was conducted in Sep. 2022 with strict measures of zero-COVID-19 policy. However, growing optimism is predicted after changes of regulations in early Dec. 2022

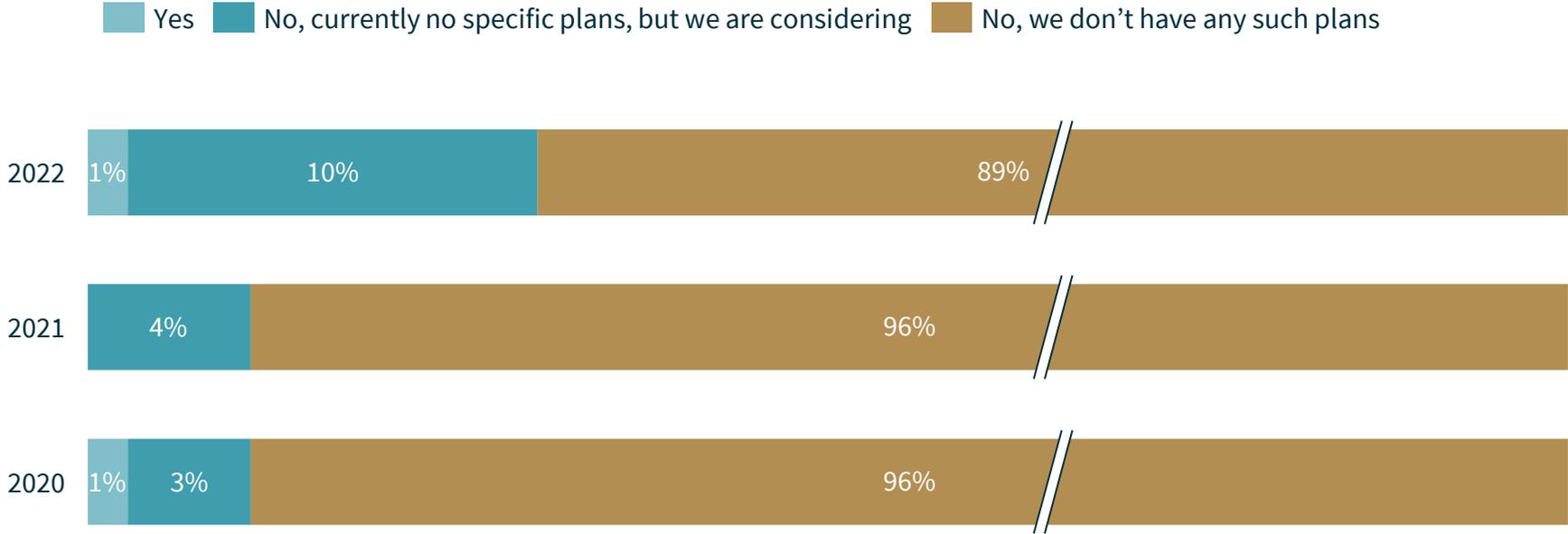
## Despite a rising trend of German companies considering leave China, majority still willing to stay

DECEMBER 2022

**“Is your company planning to completely leave China within the next two years?”**

(2022: n=573; 2021: n=538; 2020: n=458)

\*Survey time: Aug-Sep. 2022



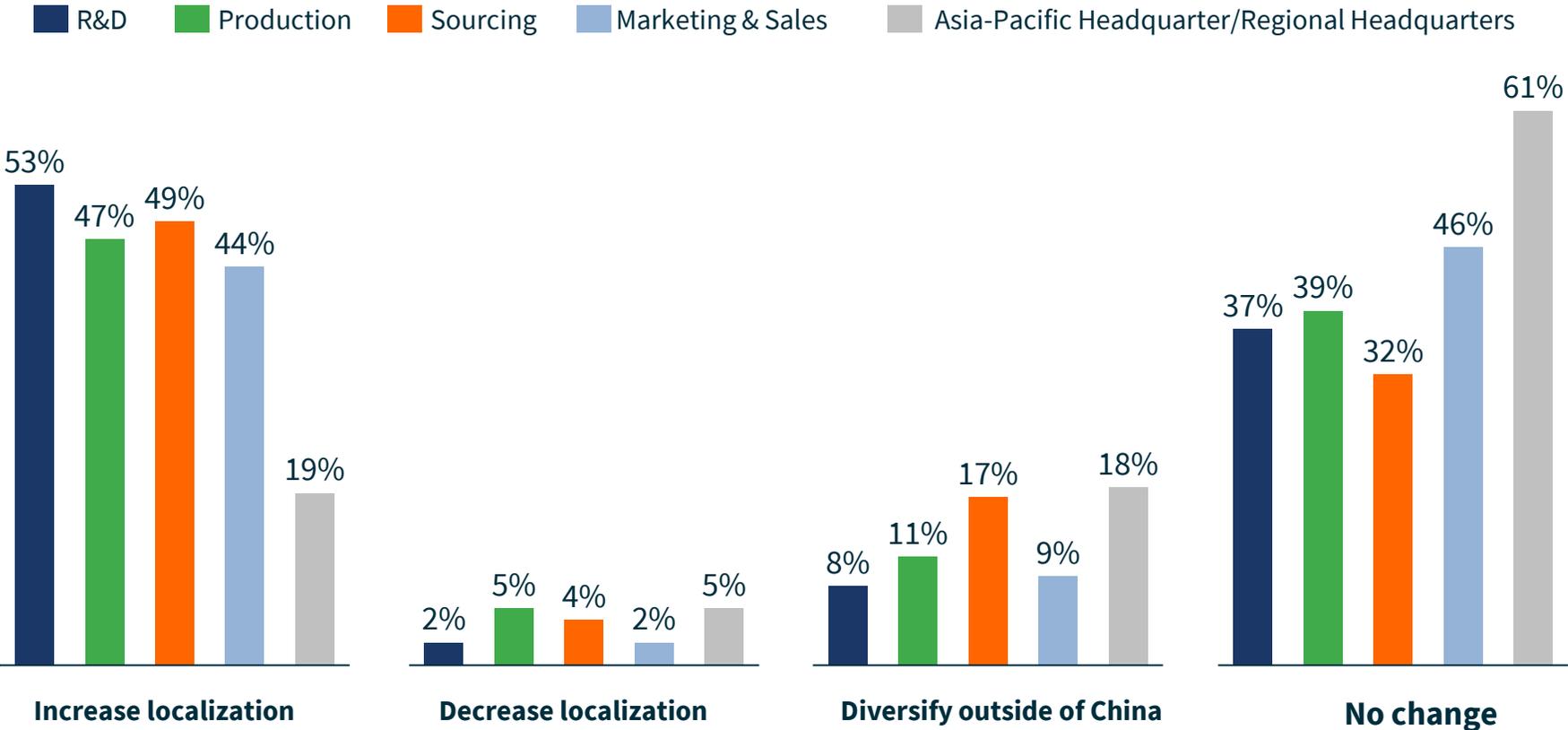
Note: In 2021 and 2020 question was formulated as followed "Is your company planning to completely leave China within the next 12 months?"

When restructuring their business functions, German companies in China rather localize in China than diversify outside of China

DECEMBER 2022

“How does your company plan to restructure the following business functions in the next two years in China?” (n=494)

\*Survey time: Aug-Sep. 2022 (incl. multiple answers)



German companies have also in 2022 continued to further invest in their China footprint, with a focus on local production and research & technology

## SELECTED ANNOUNCEMENTS IN 2022 SO FAR

### Carl Zeiss

23 mln EUR investment in a new factory including functions of product management, R&D, production, and global distribution

 **Suzhou**

### Audi

2.8 bln EUR investment in a new EV production base, which is the first production base dedicated to EV production

 **Changchun**

### BMW

2 bln EUR investment in a new EV factory, which is the largest single investment in China so far

 **Shenyang**

### Merck

9.8 mln EUR investment in an OLED material production base, and a 30 mln EUR investment in a new R&D center

 **Shanghai**

### BASF

10 bln EUR investment in an integrated production base

 **Zhanjiang**

### Airbus

2.8 bln EUR investment in a new R&D center

 **Suzhou**

*“In the first 8 months of 2022, EU’s investment in China increased by **123.7%**”*  
—Ministry of Commerce, PRC.

*“German FDI in China has been on the rise since the start of the COVID-19, with inflows reaching **3.19 bln EUR in 2022 Q2**”*  
—Macrobond

*“German investment in China reached around **10 bln EUR in 2022 H1**”*  
—Reuters

While talk of industrial **"decoupling"** from China is spreading, European (esp. German) companies **continue to invest** in China due to the sheer size of its market

Facing China's dynamic positioning in the global market, EAC offers following recommendations for European companies' long-term development in China

## RECOMMENDATIONS FOR EUROPEAN COMPANIES

- 1 Flexible organizational transformation of China branch** to participate in the growth potential of China market to ensure the Chinese Subsidiary as global growth driver—through new distribution models such as e-commerce/social e-commerce, etc.
- 2 Increase participation in China's consumer goods growth opportunities** (especially in F&B), set up local presence, (incl. registration, offices, and staff), develop localized marketing/distribution strategies (e.g. start with CBEC or expand local sales channels)
- 3 In-depth localization cost-benefit analysis** to formulate a special "China strategy (such as local innovation investment)" to face rising local competition
- 4 Improve local operation performance** by assessing current situation and potential for improvement (e.g. plant optimization), coordinating key stakeholders to facilitate cross-regional communication, structuring of task force and on-site coaching
- 5 Re-evaluate your Asian footprint**, adapt to increasing environmental scrutiny which forcing factory relocation, and secure capacity expansion to capture the opportunities
- 6 Activate digital innovation solutions** based on China's leading digital industry chain through China innovation & competition benchmarking
- 7 Organizational assessment to reconsider the position of China organization**, all HQ decisions (across the value chain) need to reconsider the impact from China
- 8 Develop global/ regional ESG strategies** through market and customer readiness benchmarking, supply chain due diligence & conformity, carbon footprint mapping & target setting



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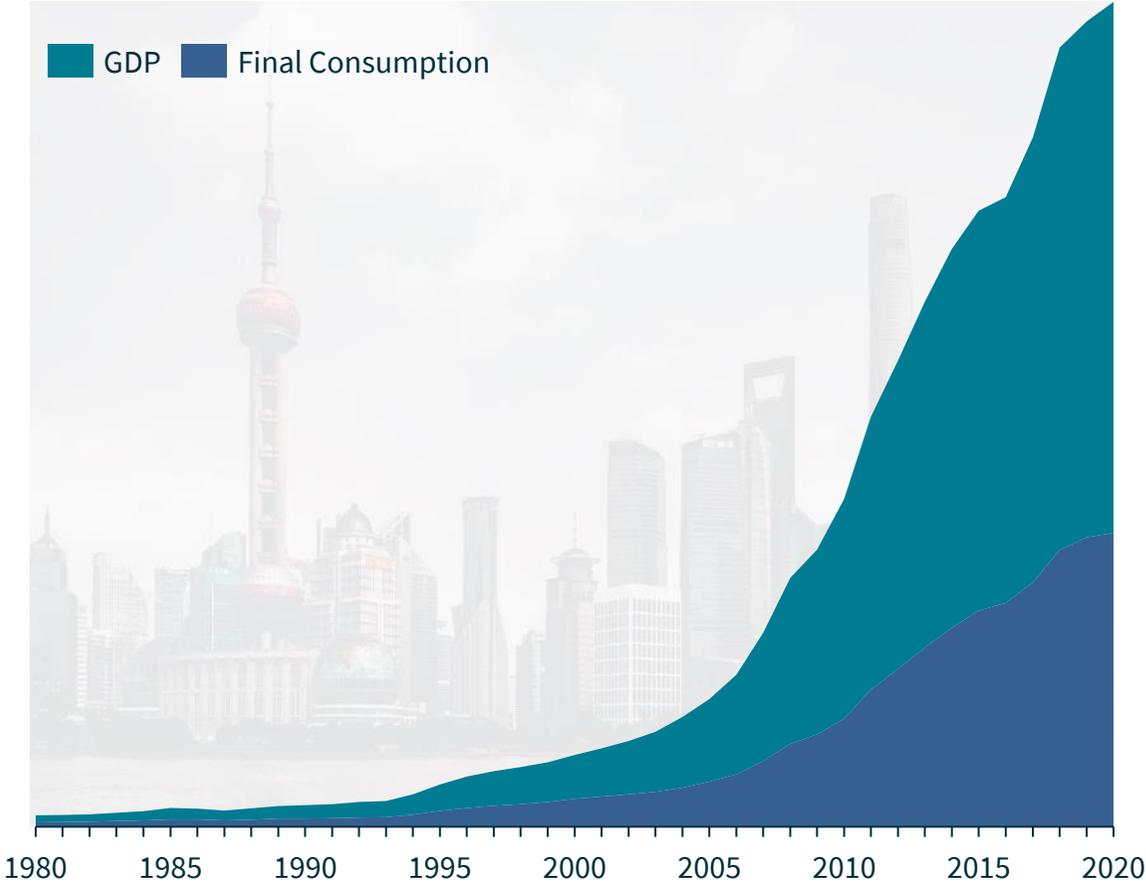
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# CONSUMPTION – BIG PICTURE

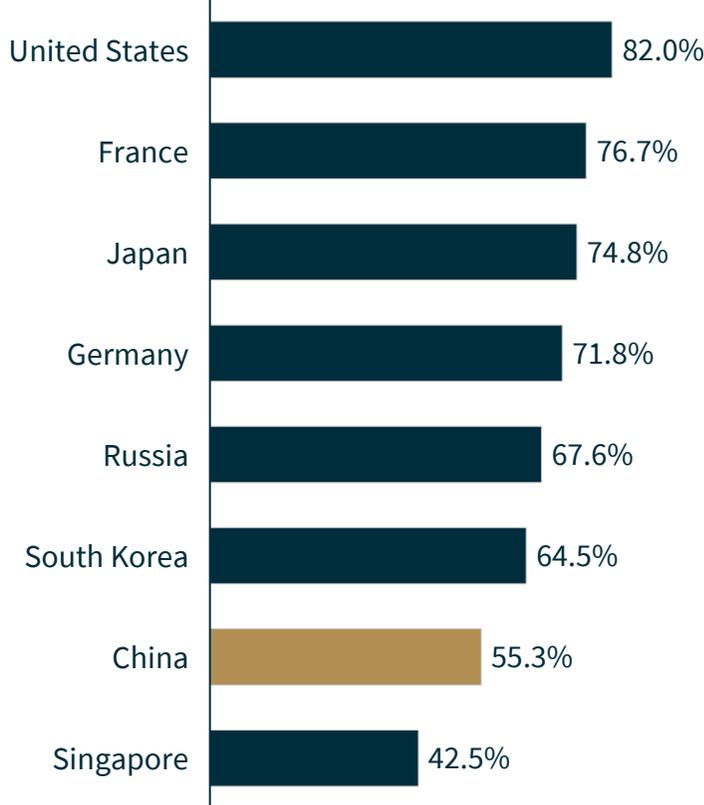
Previously relying on an investment- and export-led growth mode, China consumption share of GDP is still lacking behind other countries and boosting private consumption will not be an easy task

## CHINA GDP AND CONSUMPTION OVER TIME (CURRENT USD)



## FINAL CONSUMPTION AS SHARE OF GDP

(Latest available data for each country)



# DEMOGRAPHICS – 2022 CENSUS RESULTS (PREDICTION)

While China's 2022 Census results (prediction) need to be taken with a grain of salt, they still offer interesting insights that hint to the ongoing demographic shift

**1,425 bln**

**National Population**

(+0.9% compared with 2021)

**2.62 persons**

**Average Size of a Family Household**

(no change)

**105.7**

**Male-female Sex Ratio**

**63.35%**

**Share of 16 -59 Age group** (894.38 mln persons)

**18.9%**

**Share of 60+ Age Group** (456.66 mln persons,  
+0.2% person since 2021)

**64%**

**Urbanization Rate** (902 mln persons living in  
urban areas, +14.2 percentage points)

**493 mln**

**Floating Population** (number of population living in  
places other than their household registration areas)

## Future consumer business centered around three emerging consumer segments



### Gen Z Style

- ❖ Post '90 and '00, digital savvy, **new mind-set**
- ❖ Prefer **ready-to-cook** dishes and fresh food
- ❖ e-commerce to save time and money
- ❖ Live streaming and social e-commerce is high
- ❖ Fan of **E-cars** & the latest **high-tech home appliances**
- ❖ Favor **domestic brands** – cosmetics, sports clothes
- ❖ Conscious of **sustainable products and lifestyle**



### She-Economy

- ❖ Educated, working women boost discretionary spending
- ❖ **Cosmetics, beauty** products, and **treatments** plus **beer for ladies** are driving the She-economy
- ❖ The market for mothers and babies are growing as they are willing to pay a **Premium** for good quality products - **Infant milk formula, accessories, and equipment**



### Silver Economy

- ❖ Age 60+ above retirees
- ❖ Growing elderly population has **money** and plenty of **time** to spend it.
- ❖ Enjoys **traveling** and **health conscious**
- ❖ Demand better **quality food and drinks** also **dairy** products for nutrition
- ❖ Professional **medical care** services needed

Dynamic COVID development has been affecting China's retail market, the government is actively adjusting the COVID control policy to improve the negative consumption situation

## R E T A I L



1

China has announced **relaxing COVID restrictions**, emphasizing vaccines and treatments instead of quarantines and lockdowns since December 2022

2

Until October 2022, the **total retail sales of consumer goods reached 36,057.5 bln RMB** with an increase of 0.6% YoY

3

The consumer confidence index has been **significantly affected by the lockdown policy**, standing at 86.8 as of October

4

The proportion of physical commodity **online consumption** has steadily increased in the first three quarters from 22% to **26%** with increased internet coverage

5

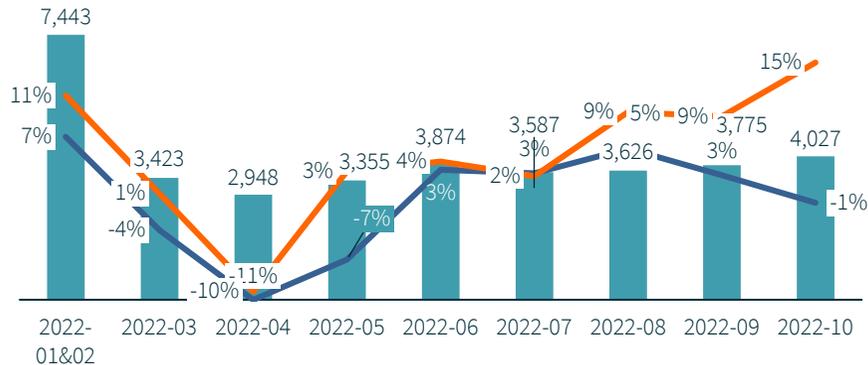
Although offline sales are still weak, down 2.7% YoY, **trend of O2O and digital marketing** are nevertheless developing quickly

The retail market remains stagnant in 2022, and with the fluctuation of the pandemic policy, relaxing COVID control policy brings positive signals for the recovery in 2023

Total Retail Sales of Consumer Goods

Consumer Confidence Index

- Total Retail Sales of Consumer Goods YoY %
- Total Online Retail Sales of Consumer Goods YoY %
- Total Retail Sales of Consumer Goods



- Total retail sales and consumer confidence are heavily influenced by quarantine policies, esp. after the Shanghai lockdown in April
- With the relaxing of the COVID control policy in China, retail sales are expected to rebound in 2023 without quarantines limitation



**China Eases Curbs in Major Shift From Covid Zero Policy**

- New moves allow some infected people to quarantine at home
- Chinese government has come under pressure to change approach

**In a major shift, China eases draconian "zero-COVID" policy restrictions**

BY SHUAI ZHANG, ELIZABETH PALMER, TUCKER REAL  
UPDATED ON: DECEMBER 7, 2022 / 8:15 AM / CBS NEWS

**'Daylight is here': China travel searches surge as public cheers COVID easing**

3 minute read · December 7, 2022 6:23 PM GMT+8 · Last Updated a day ago

Retail offline channels are starting to rebound after the Chinese consumers adjust to the “new normal” compared to 2021 - consumers and brands place greater importance on offline retail

### China 2022 Offline Retail Sales YoY Growth Comparison (January to October 2022)

Overall offline retail stores		2%	↑
	Convenience store	4.6%	↑
	Supermarket	3.7%	
	Specialty store	4.6%	↑
	Brand Exclusive Shop	0.7%	

*Note: Offline retail divided into 11 forms, incl. grocery stores, convenience stores, supermarkets, specialty stores, brand exclusive shop, and shopping centers, etc., according to the characteristics of the store structure and products*

Until October, the total retail sales of social consumer goods for 2022 reached **36,057.5 bln Yuan**, among which **offline retail accounts for nearly 75%**

Compared with 2020 and 2021, the control of the epidemic has gradually become stable and into “**new normal**” phase. Except in some cities offline store still face business suspensions or shortened business hours due to lockdowns, **offline stores have generally started to rebound**

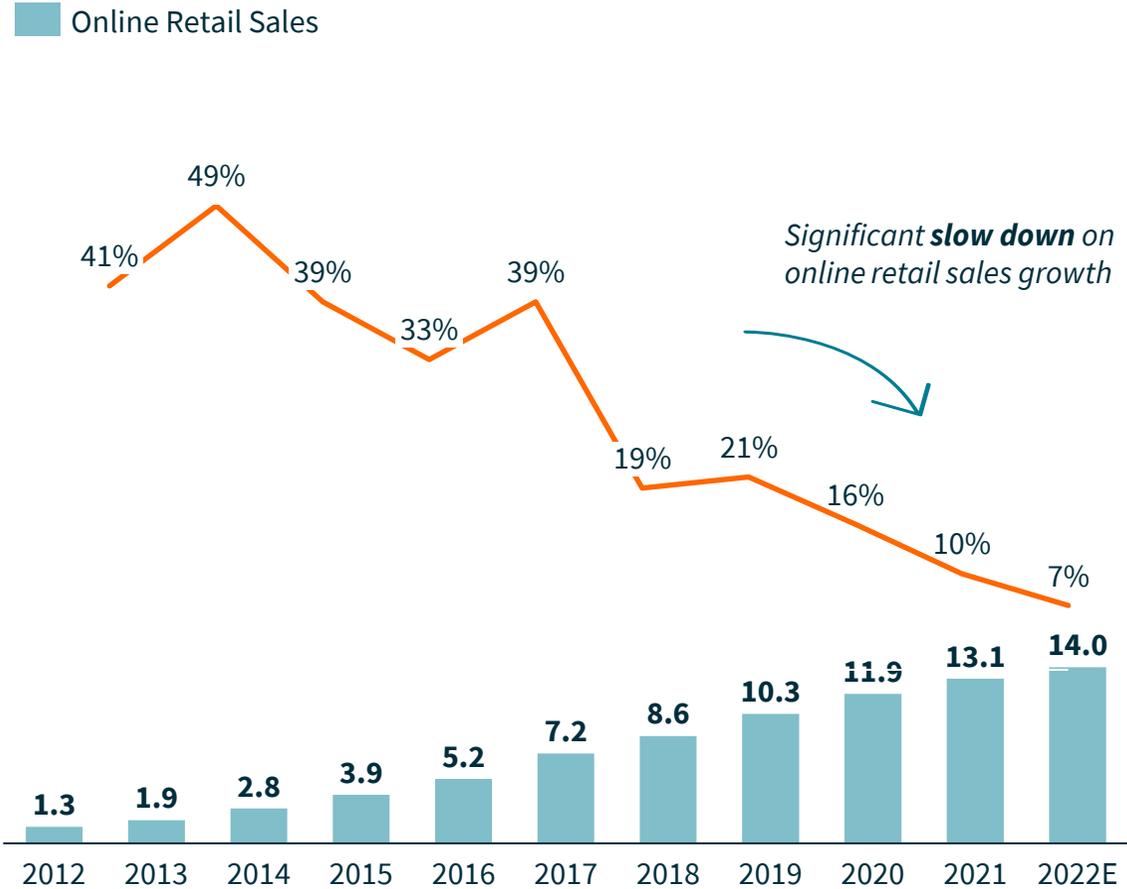
The **increasing cost of acquiring customers** via digital marketing for e-commerce channels is increasing along with the fierce digital **competition and homogenization** for brands, corporates will refocus on offline retailing

Meanwhile, technology development further drives the **digitalization of offline retailing**, which significantly improve **consumer experience**: through portable smart devices, Internet of Things, terminal sales data and CRM data are collected in real time; Combined with digital influences, immersive sales scenarios are created to deepen brand awareness and attract customers

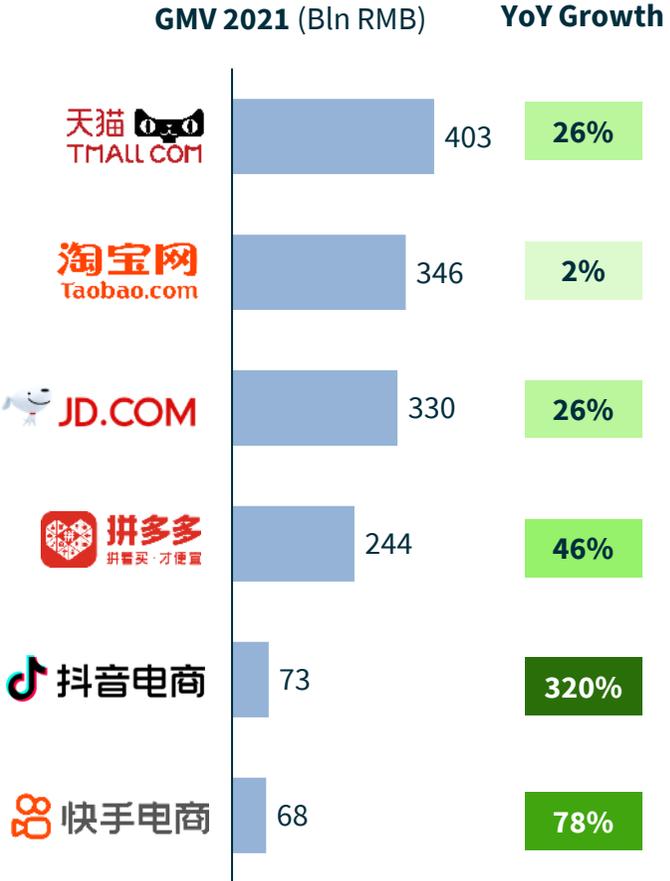
# ONLINE RETAIL PERFORMANCE 2022 (1/2)

After years of rapid growth, China’s online retail sales has entered a slow-growth phase since 2021 - among E-commerce platforms, Douyin featured the strongest growth

## CHINA NATIONAL ONLINE RETAIL SALES VOLUME & GROWTH

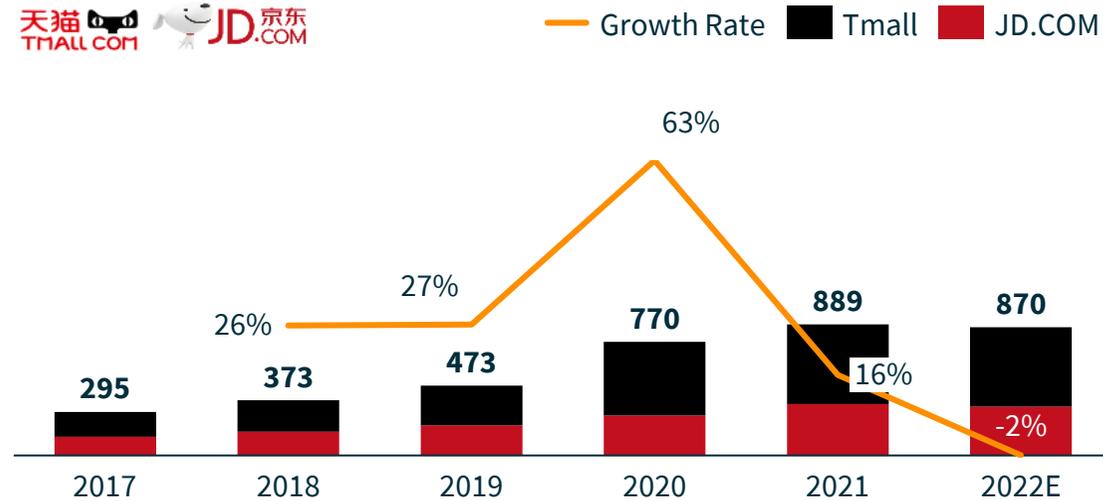


## GMV MAJOR E-COMMERCE PLATFORMS



A significant slow-down on Double-11 sales is also noticed due to multiple consumer and brand reasons - however, some categories showed rapid growth within overall downward market situation

## GMV ON DOUBLE-11 SHOPPING FESTIVAL TMALL & JD



Consumers become more **rational** and **unexcitable** influenced by weak consumption demands and income expectations

More **conservative promotion** activities adopted by brands due to inventory and logistics pressure under COVID situation

Promotion activities become more **normal** during the whole year with more diversified sales channels

## GMV GROWTH SELECTED CATEGORIES

But some categories become promising in 2022...



48.3% ↑

Jewelry & Diamond



30.9% ↑

Pet Food & Products



6.4% ↑

Health Care Products



16.9% ↓

Cosmetics & Skincare



21.1% ↓

Women's Wear



**COVID-19 lingering, consumers want to enhance their quality of life through O2O channels, rationale purchases, home cooking, outdoor lifestyles, and are willing to pay for quality and premium products**

## *O2O Shoppers*

- ❖ >1 bln digital-savvy and mobile-first Chinese consumers are defining how brands must operate their China business
- ❖ Sales of traditional e-commerce platforms saturated, and online and receiving a delivery from offline stores and growth slowed down. Meanwhile, the O2O model (ordering warehouses) attracts incremental consumers



## *Pay for Quality*

- ❖ Middle class continues its growth leading to the rise of premiumization
- ❖ Consumers are trading up and seek for high quality, premium, imports, foreign labels and functional products



## *Belt Tightening*

- ❖ Looming slower economy and higher unemployment rate, impacted consumer confidence resulting in frugality in their purchase intentions



## *Outdoor Lifestyle rising in popularity*

- ❖ Consumers desire physical and spiritual well-being and exercising and being outdoor
- ❖ Turn to glamping, cycling, frisbee, and skateboarding.
- ❖ More than 400 mln. Chinese people participate in outdoor sports



## *Ready-meals consumption thrives:*

- ❖ Under the new era of zero-covid control, Pre-prepared dishes racked in a whopping 81.5 bln USD in 2021
- ❖ The rapid growth rate could see it surpass 1 tln RMB in a few years



**THE NEW CHINESE CONSUMER**



Consumer goods industry was once again very dynamic in 2022, with both foreign and domestic companies rapidly expanding and adapting their market strategies



- **Missfresh**, a Tencent-backed online grocery, shut down its on-demand mini warehouse service
- **Red** organized a virtual and offline “Summer Market, support China’s surging popularity open-air markets (July)

- **Pinduoduo(PDD)** launches US Shopping site, **Temu**. (September)
- PDD reported 36% revenue growth, tripled net income in Q2



- **Xiaomi** sub-brand, **MIJIA** specializes in smart home gadgets launching new products, including smart door locks, smart cooking equipment, and smart cleaning devices. (September)



- **Bel Group** expands in China through Shandong Junjun Cheese Co (August)
- **Nike** collaborates with AntGroup – Green Energy Initiative to recycle shoes. (September)
- **Ferrari** launched its 1<sup>st</sup> fashion flagship on Tmall in time for Double 11. (October)
- **Else**, plant-based nutrition toddler formula and cereal launched flagship on Tmall Global (September)
- **Nanuska**, Budapest ecofriendly fashion open Tmall and retail store in Shanghai (October)

New Brands: **Hozon Auto** is becoming Xiaomi of the automobile industry; it is aimed at bridging the gap between the mass market and the high-end segment of the EV industry (September)



- Luxury brands and gaming collabs are rising. **Gucci**, **Burberry**, and **Ralph Lauren** working with gaming from Zepeto to Fornite, capturing the younger consumers.
- **Hermes** \$24K bicycle inspired by a Japanese-style portable bicycle sold out in China mainland (August)

- **Lining** apologize for controversial designs similar to the Japanese WorldWar 2 uniform (October)
- **Loreal** apologizes for its new cosmetic brand promotion asserting China 24Solar terms as Asian



While high inflation has weakened global consumption, China's consumption has been resilient, and it is expected to continue to grow in 2023, though a slower pace



*What is the impact of the evolving consumption on foreign brands entering or operating China?*



**TRANSPARENT MARKET & COMPETITOR INSIGHTS:** understanding of key market and application drivers, consumer pain points, research on category tracker & assessment of competitive and technology landscape



Timely **PORTFOLIO DIVERSIFICATION** to serve increasing demand: from traditional offerings to online to O2O solutions (category, pricing, bundling strategy, etc.)



**CHANNEL PRIORITIZATION,** understanding at which points each platform fits into the sales cycle, allows brands to optimize their communications and function based on this



**AGILE EXECUTION AND STAY ON PULSE** with the movement in the market, robust supply chain, customer access incl. market segment, internationalization, etc.

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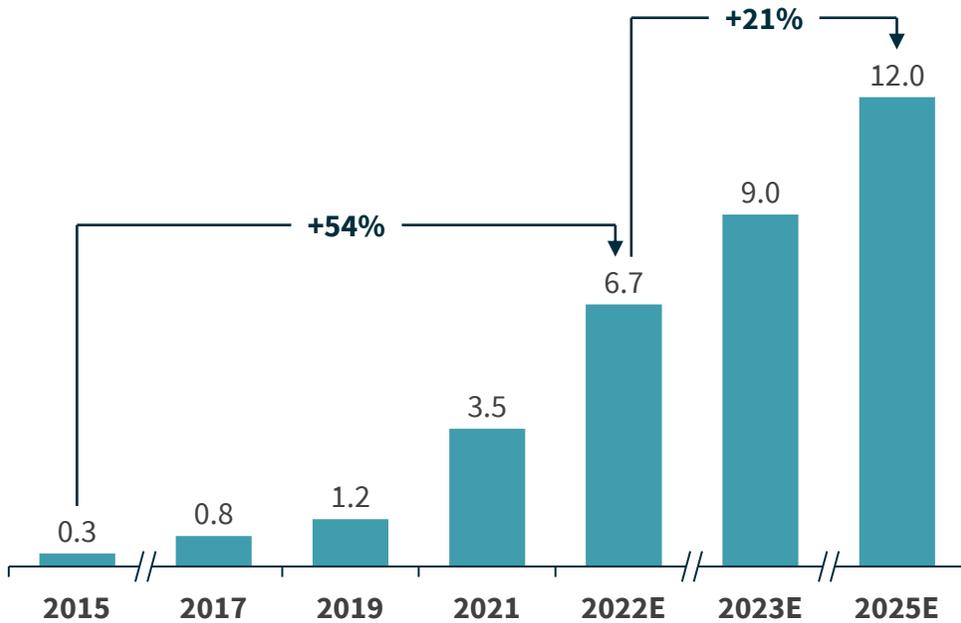
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E. Outlook & Key Attention Points for 2023

F. EAC: 2022 Highlights & Service Offering

China automotive market is rapidly shifting towards NEV to account for 40% of total by 2025 – with stock of 10 mln vehicles in 2022 obvious shortage of charging infrastructure to facilitate further growth

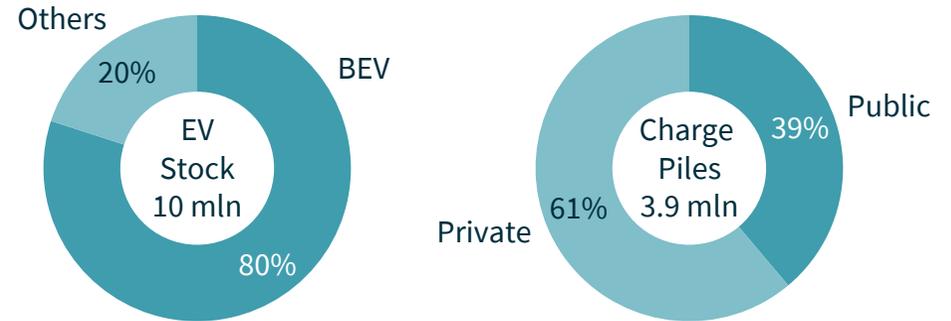
## NEV SALES (MLN UNITS)



## EV Share as of total automotive



## CHINA EV STOCK VS. CHARGING INFRASTRUCTURE JUNE 2022



## MARKET CHARACTERISTICS AND INSIGHTS

### NEV Boom

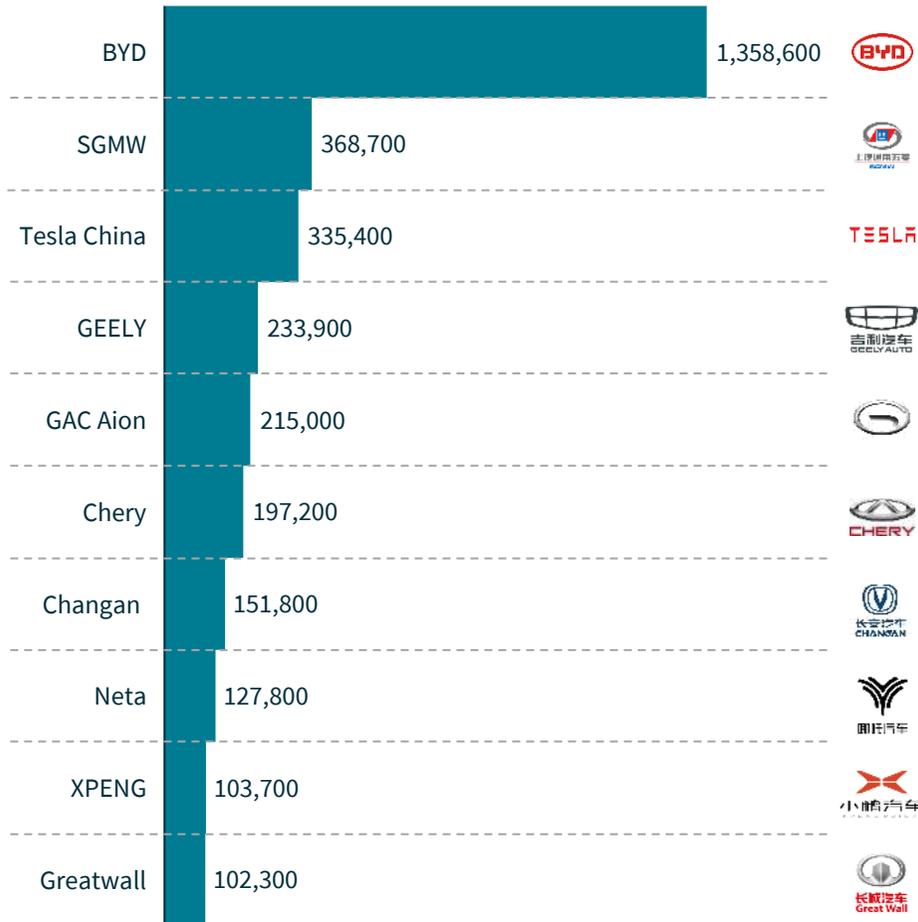
- NEV is estimated to reach **maximum 12 mln sales in 2025** mainly driven by **government policy** and **maturity of battery technology**

### Charging Infrastructure Shortage

- The current **vehicle-to-station ratio** is around **2.5:1**, far in arrears of the 1:1 target set out in a 2015 government plan for the development of electric vehicle charging infrastructure

China’s NEV market is –except Tesla – dominated by domestic brands – almost all new production capacities recently opened or under construction are focused on NEVs

## SALES OF TOP 10 NEV BRANDS IN CHINA (TILL OCT. 2022, UNITS)

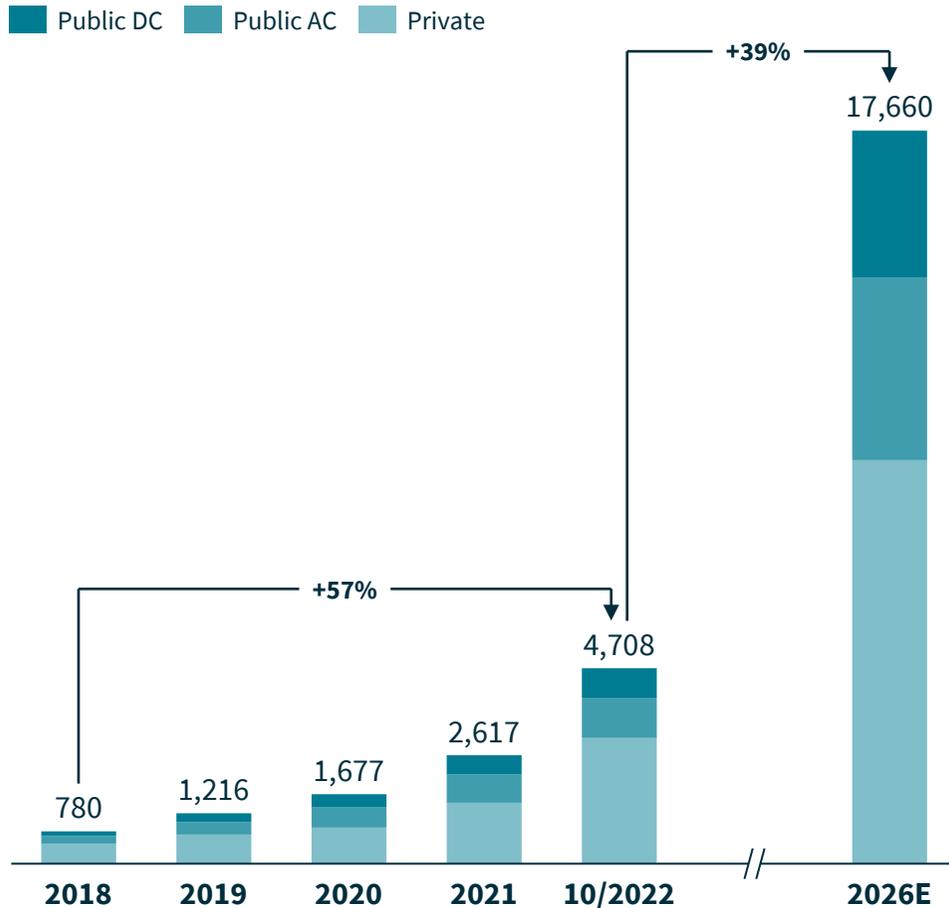


## SELECTED OEM PLANTS WITH SOP

Company	Plant Name/ Type	SOP	City	Province
Great Wall	Plant for WEY	2021	Rizhao	Shandong
Great Wall	Pinghu Plant	2021	Jiaxing	Zhejiang
Geely	NEV Plant	2022	Shangrao	Jiangxi
Geely	NEV/ Lotus Plant	2022	Wuhan	Hubei
Nissan	Nissan-Dongfeng Plant	2022	Wuhan	Hubei
BMW/ Brilliance	Spotlight Automotive Factory	2022	Suzhou (Zhangjiagang)	Jiangsu
BMW	Expansion of Tiexi Plant	2022	Shenyang	Liaoning
FAW Toyota	New Energy Plant	2022	Tianjin	Tianjin
Daimler/ Geely	EV Plant	2022	Xi'an	Shaanxi
Volkswagen	NEV factory for MEB-platform	2023	Hefei	Anhui
Volkswagen	NEV factory for Audi	2024	Changchun	Jilin

EV charging infrastructure will continue to experience fast growth with more gravity in DC charging boosted by NEV market demand and policy support, with State Grid as the key player

## INSTALLED CHARGING PILES BY TYPE IN CHINA (THSD)



## CHINESE LEADING PLAYERS



国家电网  
STATE GRID

### State Grid Corporation of China

- Public: gas station and rest area
- Public: bus fleet
- Public: taxi and online car-hailing fleet



### Teld

- Public: taxi and online car-hailing fleet
- Semi-public: parking lot/ hotel/ shop/ company



### StarCharge

- Semi-public: parking lot/ hotel/ shop/ company

## LEADING OPERATORS (PUBLIC CHARGING PILES BY OCT. 2022, UNIT)



TELD

19%

Starcharge 星星充电  
Star Charge

19%

Yunkuaichong 云快充  
YKCCN.COM

14%

Others

31%

12%

State Grid



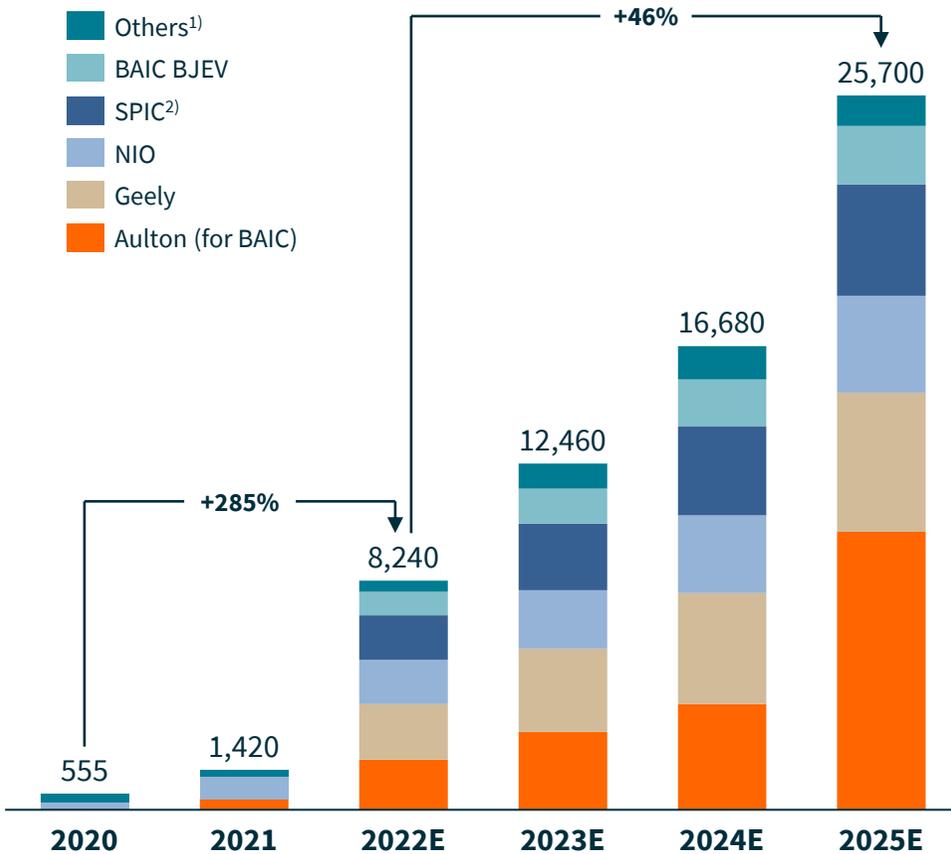
小桔充电 Orange Energy

5%

1,680,000

China battery swapping station is estimated to keep significant 2-digit CAGR and will reach total amount more than 25,000 stations by 2025

## CHINA BATTERY SWAPPING STATION MARKET (# OF STATIONS)



1) Incl. State Grid, CATL, etc.

2) State Power Investment Corporation Limited

## INDUSTRY CHARACTERISTICS

- **Explosive growth 2022** & keep significant 2-digit CAGR by 2025
- **Huge market potential** in China with **solving consumers' mileage anxiety**
- Heavy asset investment requires **strong capital support**
- **Currently Local players** mainly include **dedicated operator** such as **Aulton** (mainly serve commercial purpose such as taxi) and **auto OEMs** such as **NIO** (high-end private EV brand)
- **At emerging stage** and **business model** is keeping **updated**, currently **“Battery-as-a-Service”** has been **accepted by market**

## KEY GROWTH DRIVERS 2022-2025

- **NEV market development**
- Positioned as **“new infrastructure”** strongly **promoted** and **encouraged** by **government** as well as **attract capital investment**
- **More and more auto OEMs** have **launched battery swapping NEV models**, incl. BAIC, NIO, Geely and Chang'an
- **Leading petroleum players** such as **Sinopec** and **Shell** have built up **strategic relationship** with **NIO** and **Aulton**, to further **promote battery swapping station infrastructure deployment**

## Battery swapping station has gained strong support from government and leading local operators to accelerate construction deployment

### REGULATIONS AND KEY DECISION MAKERS

- **Ministry of Finance (MOF)**
  - **No price limitation requirements when granting subsidies** on **battery swapping NEV** in order to encourage auto OEMs to develop battery swapping vehicle
- **National Energy Administration (NEA) and Ministry of Industry and Information Technology (MIIT)**
  - **Accelerate** the promotion and application of battery swapping station and **support construction and deployment** of dedicated battery swapping stations, such as taxi and heavy truck
- **National Development and Reform Commission (NDRC)**
  - Promote battery swapping station in township. Focus on short-haul, high-frequency and heavy-duty use cases, such as mines, ports and urban transit
  - Further explore “**Battery-as-a-Service**” model
- Local governments of some **tier-1** and **tier-2 cities** support charging pile and **swapping station operators** with **subsidies**, such as Beijing, Shanghai, Hangzhou and Xi’an

### MARKET VOICE



- “By using battery swapping with ‘**Battery-as-a-Service model**’, consumers can **avoid battery attenuation issue**, enjoy **battery technology upgrade** as well as **improving vehicle retention rate...**” (Mr. Bin LI, CEO of NIO)



- “The **newly released battery** used for swapping can **match >80%** of E-vehicle on market. Each **CATL battery swapping station (“EVOGO”)** has capacity of 48 pcs of battery ‘Choco-SEB’ and **swapping time** of single battery is **1 min** with **200km range...**” (Mr. Weifeng CHEN, GM battery service company of CATL)



- “We plan to **build up ~10,000 super battery swapping stations** by 2025, rely on the gas station layout of **SINOPEC** who is **strategic partner of Aulton...**” (Mr. Dongqing CAI, Chairman of Aulton)

To make EVs have similar energy refilling experiences as ICVs, super charge is now under development to further reduce charging time, which could contribute to further promotion and application of EVs

### TECHNOLOGY SNAPSHOT

<b>Name</b>	Chaoji Super charge	
<b>Brief Introduction</b>	Charging facilities & interfaces standards in China Established & unified by State Grid	
<b>Key Standard Parameters</b>	10min for 300km Power: 350- <b>900kW</b>	Voltage: 100-1500V Current: 500-600A

### VOLTAGE PLATFORM NEEDED FOR CHAOJI STANDARD (500A)

	1C <sup>1)</sup>	2C	3C	4C	5C	6C
25kWh	50V	100V	150V	200V	250V	300V
50kWh	100V	200V	300V	<b>400V</b>	500V	600V
75kWh	150V	300V	450V	600V	750V	900V
100kWh	200V	<b>400V</b>	600V	<b>800V</b>	1000V	1200V

1) 1C: the rate of charge. For 1C to 6C, it takes 1h to 10min for full charge

### TECHNOLOGY PATHWAY

- High current charging, e.g., Tesla
- High voltage charging, e.g., BYD, etc.
- **High voltage charging** over high current charging
  - **Max. power charging** can be realized in a **wider range**, which can better match the demand of fast charging in future
  - Low demand on **thermal** management ( $Q=I^2Rt$ )
  - Not rely on specific charging systems
  - Relatively low cost

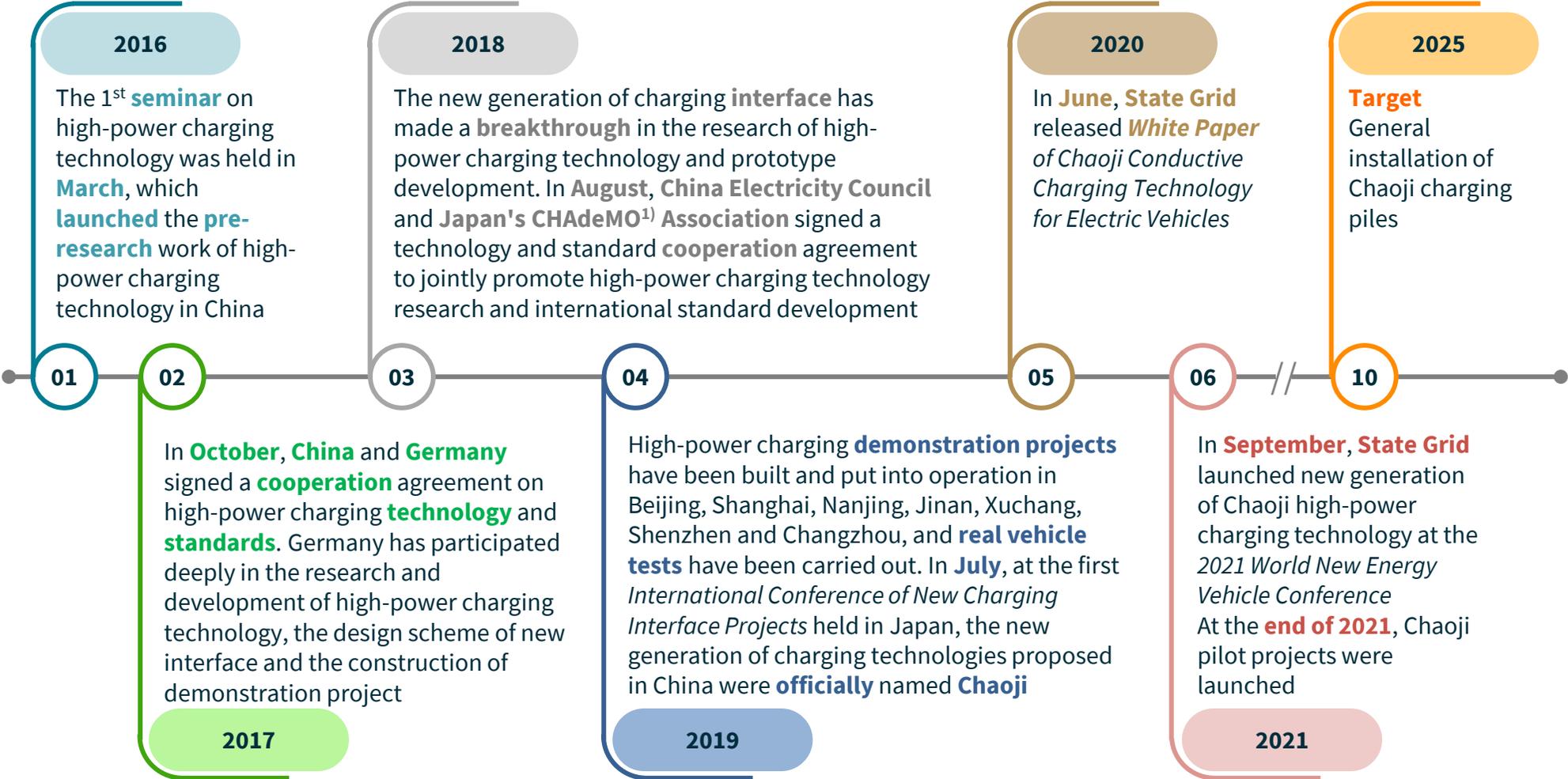
### OPPORTUNITIES

- ChaoJi standard is **forward compatible** with GB/T, CHAdeMO, CCS1 and CCS2 standards of China, Japan, USA and Europe, **backward compatible** with scalability, and can also support slow charging
- ChaoJi standard has been adopted by Japan and IEC<sup>2)</sup>, and will become **one of the important EV interface and system standards** if approved by Europe
- Along the future development of **EV with high voltage architecture**, super charge infrastructure under ChaoJi standard will **contribute** greatly to further **promotion & application** of EVs

2) IEC: International Electrotechnical Commission

# SUPER CHARGE – REGULATIONS

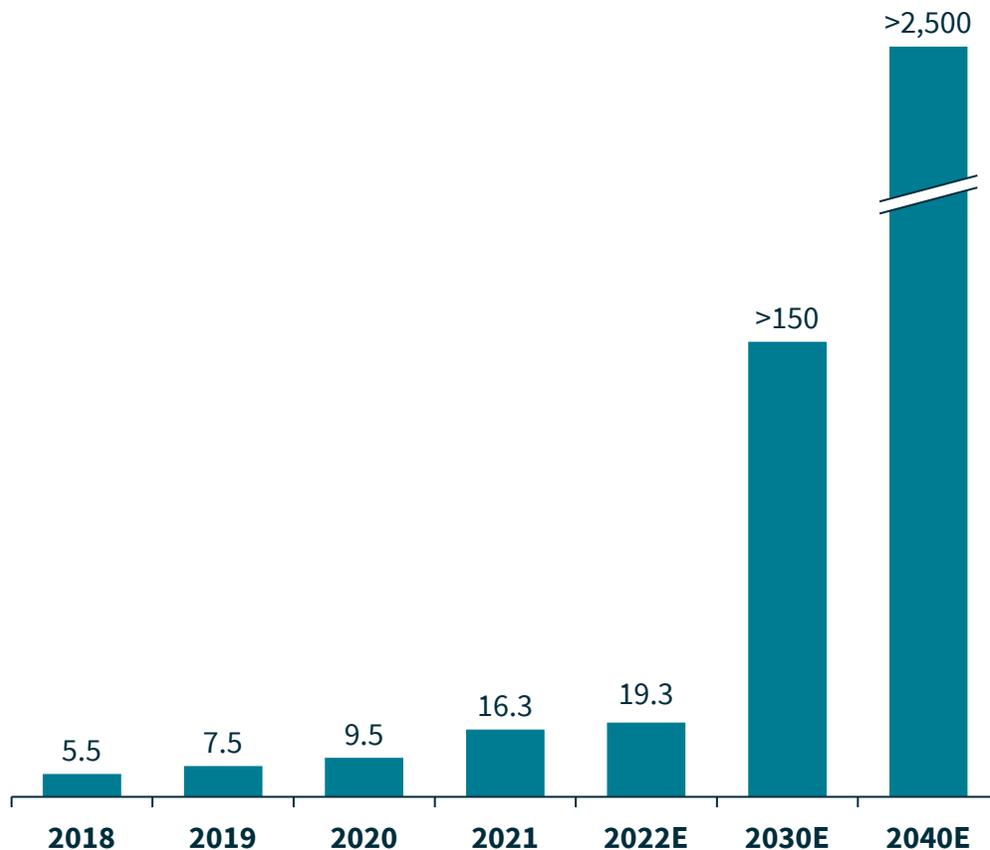
Starting from 2016, China Chaoji standard for super charge has entered the deployment stage. With a target of general installation by 2025, several Chaoji pilot projects have been launched by the end of 2021



1) Electric Vehicle Fast Charger Association

Despite leading automotive markets have put hydrogen mobility on the agenda, sales in 2022 (+3.000 YoY) slowed significantly down compared to 2021 (+6,800 YoY)

## GLOBAL FCEV ANNUAL SALES VOLUME (THSD UNITS)



### JAPAN – “TECHNOLOGY LEADER”



Global technology leading player in passenger FCEV with strong focus on **passenger vehicles**

### KOREA – “STRONG CHASER”



Became the **global sales leader** with 7,410 sales for **Jan-Aug 2022**

### EU – “AMBITIOUS PROMOTER”



**Ambitious plans** to increase FCEV sales, **GER** the most committed country for hydrogen and fuel cell development

### U.S. – “HYDROGEN HUB”



Globally, the United States produces **80%** of hydrogen from fossil fuels with **CCUS**

### CHINA – “H<sub>2</sub> COMMERCIAL VEHICLE CENTER”



One of the **world’s largest markets** for fuel cell vehicles so far with sales focused on CVs

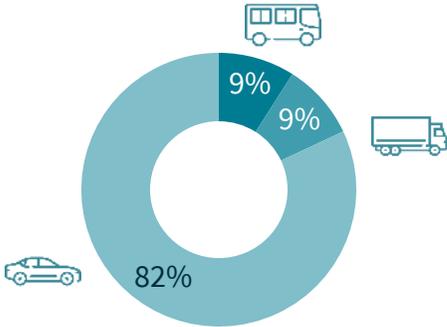
1) CCUS – carbon capture, utilization and storage

Source: BNEF 2021, EAC Research

Current global FCEV stock reached 52,000 units by 2022, mainly passenger vehicles - Japanese and Korean car models drive the market

## GLOBAL FCEV MARKET CHARACTERISTICS (2022)

### FCEVs stock October 2022



### Leading FCEV Models in 2022



Hyundai NEXO  
(Top 2: 7,410 units in 1-8/2022)



Toyota Mirai  
(Top 2: 2,561 units in 1-8/2022)

## KEY FCEV STOCK BY COUNTRY (MARKET SHARE)



Korea  
(38%)



U.S.  
(24%)



China  
(19%)



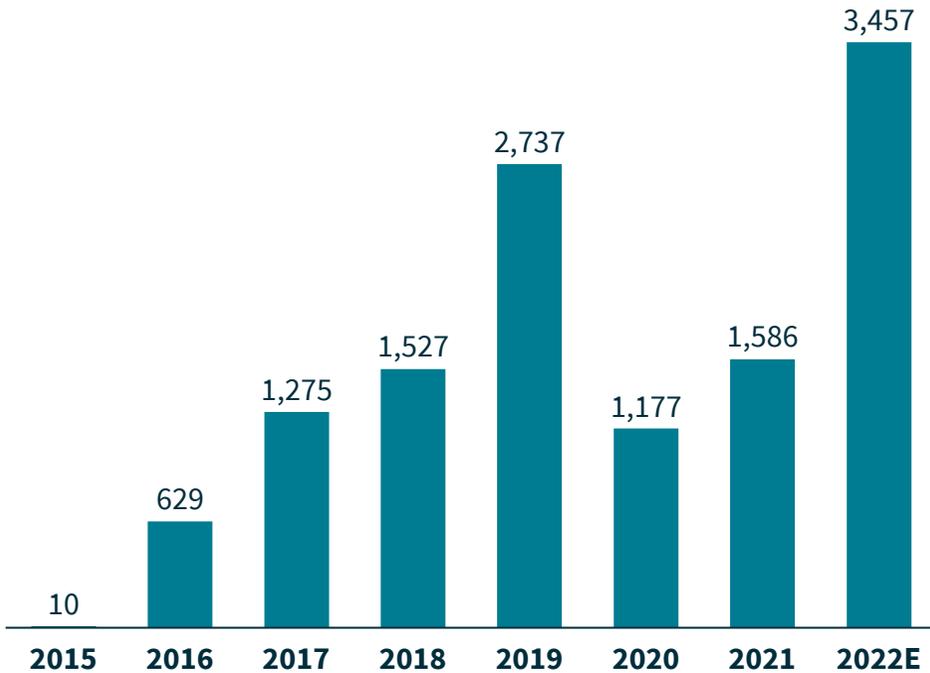
Japan  
(13%)



Germany  
(3%)

FCEV deployment in China started comparatively late while China is setting itself up to become the global leader the FCEV market with focus on commercial vehicles

## CHINA FCEV ANNUAL SALES VOLUME



### 2022 FCEV Allocation



4%



31%



65%

## MARKET INSIGHTS

- China acted **comparatively late** in technology deployment, and now is **accelerating** from technology research and development to commercial development stage
- The hydrogen industry has been lifted to China’s **national strategic level** esp. with the ‘**Dual Carbon**’ targets
  - Government aggressively pushes the development of fuel cell electric vehicles with an initial focus on **commercial vehicles**
- Strong development of BEV has provided good **industrial base** for FCEV in China as it has a **similar electrical** and **electronic architecture**



Feichi FSQ6860FCEVG3



Changan SL03 FCEV



Foton Ouhui BJ6123

Successful participation in the Chinese e-mobility market requires proactive exploration of emerging technology fields and agile execution of required business & technology transformation

*Will the NEV market continue to feature explosive growth in 2023 and beyond, and how can foreign companies strengthen their position in the local market?*



**MARKET & COMPETITOR INSIGHTS:** understanding of key market and application drivers, consumer pain-points, regulatory transparency & assessment of competitive and technology landscape



**TECHNOLOGY & OPPORTUNITY SCOUTING:** identification of different potential technology routes at an early stage and subsequent idea generation for new growth opportunities



**PORTFOLIO TRANSFORMATION ROADMAP** to serve increasing demand: from traditional offerings to ‘e-mobility’ solutions (components, manufacturing equipment, infrastructure, etc.)



**EXPLORE CO-OPERATIONS** and partnerships within the e-mobility eco-system, ranging from Joint Ventures with local partners, acquisition of start-ups or project-based technology alliances

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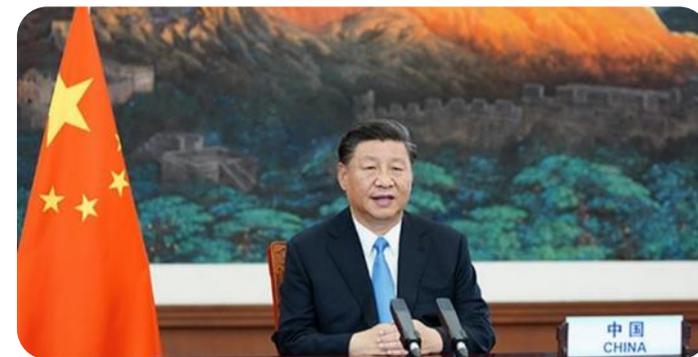
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F. EAC: 2022 Highlights & Service Offering

## China keeps taking steps towards energy transition however energy security being a top priority in view of the 2022 global energy crisis

- 06 | 2022  **14th Five-Year Plan (FYP) on Renewable Energy Development (2021–2025):** further acceleration of expanding the RE in China
- 06 | 2022  The China Banking and Insurance Regulatory Commission (CBIRC) issued the **Guidelines** for banks and insurers to promote **Green Finance** at the strategic level, non-binding
- 06 | 2022  China's 1<sup>st</sup> ESG disclosure standard (incl. Scope 3 emissions), the **Guidance for Enterprise ESG Disclosure**, non-binding
- 03 | 2022  NDRC releases **national hydrogen development plan**
- 03 | 2022  **14<sup>th</sup> FYP for Energy sector:** accelerate the development of a “modern energy system”
- 02 | 2022  Guidelines on the Transformation and Upgrading of Energy Intensive Industries and Key Areas for Energy Conservation and Carbon Reduction (2022 edition for 17 industries)
- 02 | 2022  **Environmental disclosure rules** by the China's Ministry of Ecology and Environment (MEE) for selected listed companies and bond issuers
- 01 | 2022  Comprehensive **Work Plan for Energy Conservation and Emission Reduction** was published: a detailed carbon peak and neutrality roadmap



*“Based on China’s energy and resource endowments, we will advance initiatives to reach carbon peak in a well-planned and phased way, in line with the principle of getting new before discarding old...”*

--- President Xi, 16 Oct. 2022

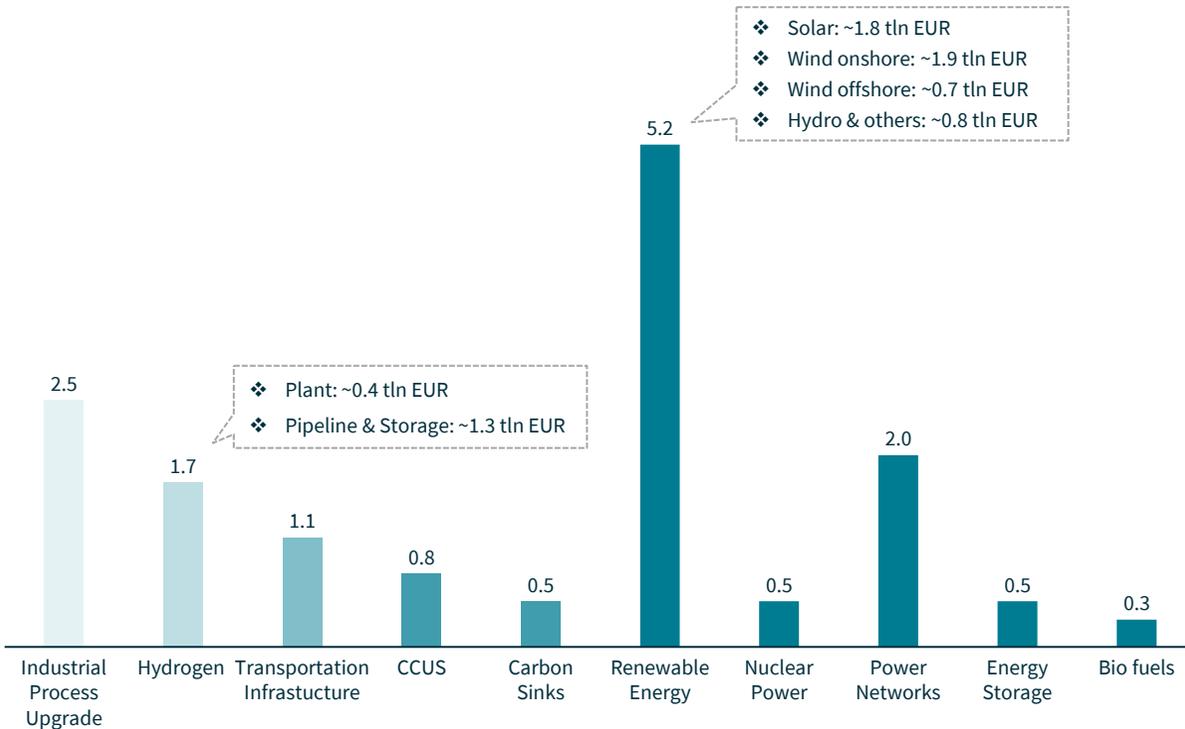
### DECISION-MAKING REGULATORY AUTHORITIES



China has set long term targets with clear milestone for carbon neutrality, to achieve which estimated ~15 tln EUR accumulative investment opportunities are created across sectors

**15 tln EUR** clean tech infrastructure investment opportunities by 2060

China accumulative investment opportunities to achieve carbon neutrality in 2060



## MILESTONES & OBJECTIVES

2025



Share of **non-fossil fuel** consumption



**Energy consumption reduction** per unit GDP compared to 2020



**CO<sub>2</sub> emission reduction** per unit GDP compared to 2020

2030 CARBON PEAK



Share of **non-fossil fuel** consumption



**CO<sub>2</sub> emission reduction** per unit GDP compared to 2005

2060 CARBON NEUTRAL



Share of **non-fossil fuel** consumption

- Fully set-up green economy and clean energy system
- Energy intensity reach advanced international levels

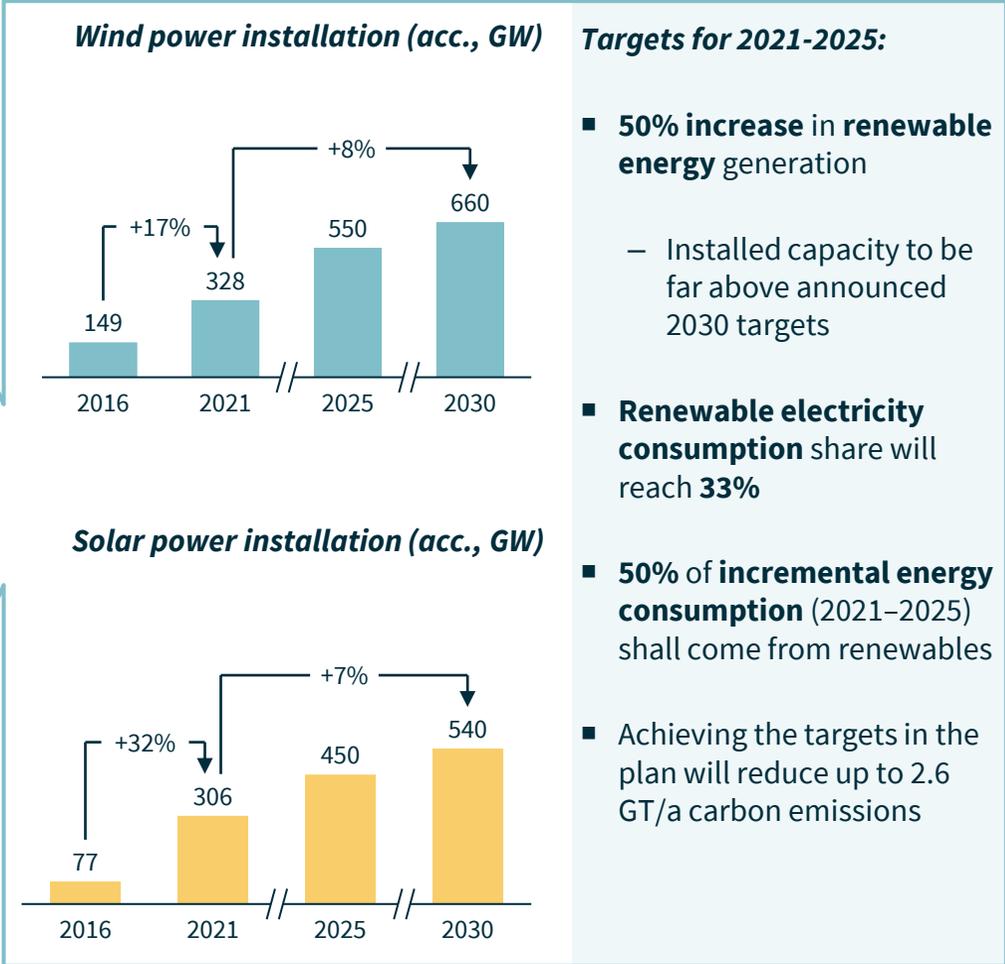
The 14<sup>th</sup> FYP for Renewable Energy sector has clear indications of the China’s energy transition is moving from its initial stage towards the advancement stage

**14<sup>TH</sup> FYP  
SUSTAINABILITY INITIATIVES**

- Accelerate development of “**modern energy system**” – “clean, low-carbon, secure & highly efficient” energy system
- Increase **solar and wind power generation** in renewable-abundant regions, incl. wind off-shore
- Establish **new tech. & business** models
- **Microgrids** for poverty alleviation



**IMPLICATIONS ON INDUSTRIES**



Environment- and decarbonization-relevant policies are given very high priority despite of energy security and self-reliance being outlined as main priority

## KEY SUSTAINABILITY RELATED POINTS OF THE CONGRESS

- **Economic activity in energy sector** will favor “**high-quality development**” and “**common prosperity**”
  - Implying **reduction of industrial energy intensity** in the energy sector
- Promoting **green development** and **harmonious coexistence** between human and nature
- Strengthen **clean and efficient utilization of coal**
- Accelerate **green transformation of development mode**
- Deeply promote **pollution prevention and control**
- Improve **ecosystem diversity, stability and sustainability**
- Actively and steadily promote **carbon peaking and carbon neutralization**
- Greater enthusiasm for **renewables, environment-friendly hydropower**, and **potentially nuclear**

## CARBON PEAK AND CARBON NEUTRALITY

*20th CPC National Congress made a comprehensive and targeted plan and deployment for China to achieve the goal of carbon peak and carbon neutrality*



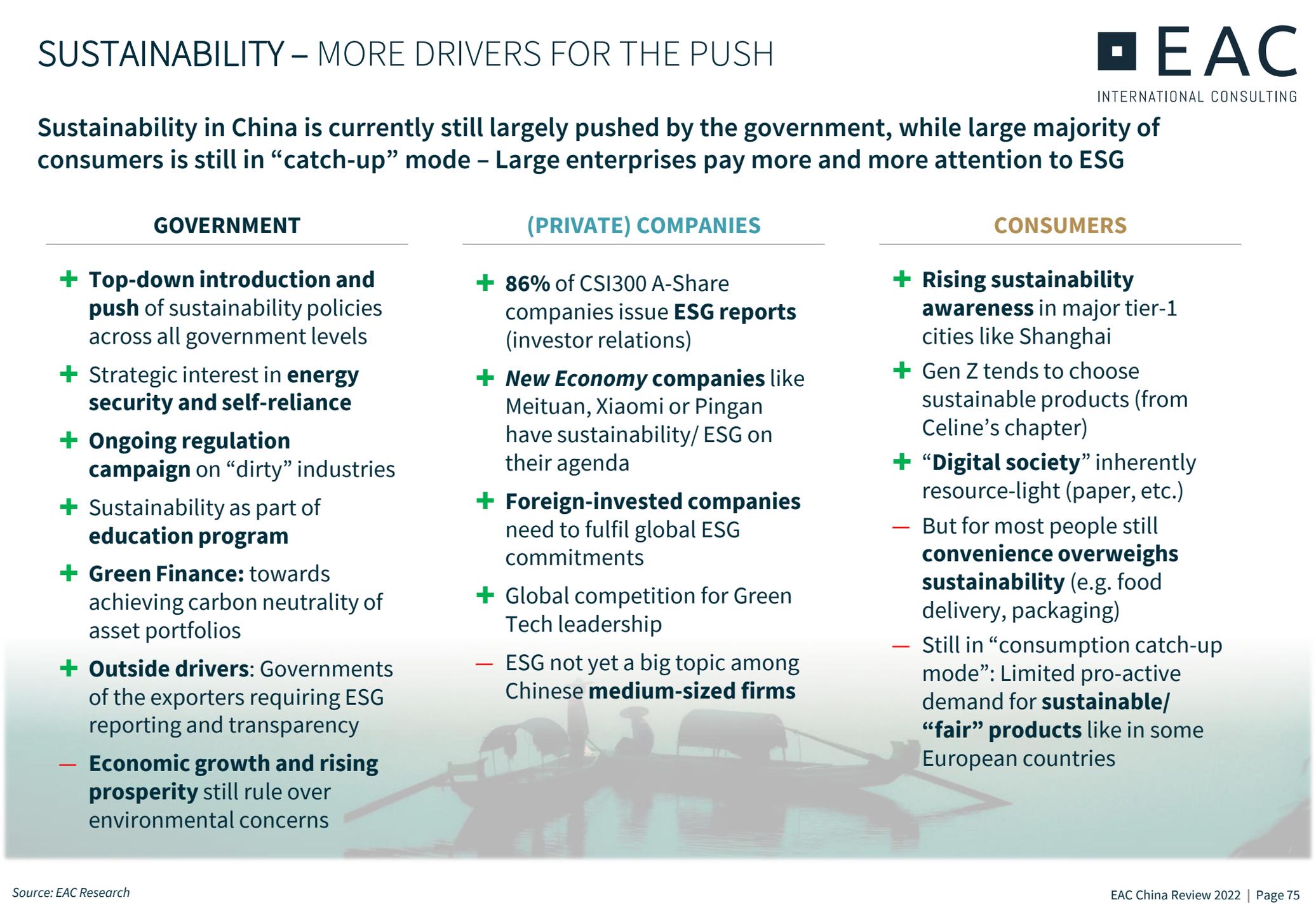
- Adhere to **integrated protection and systematic treatment** of mountains, rivers, forests, fields, lakes, grass and sand
- Coordinate **industrial restructuring, pollution control, ecological protection and climate change**
- Collaboratively promoting **carbon reduction, pollution reduction, green expansion and growth**
- Promote **ecological priority, conservation and intensive, green and low-carbon development**

Sustainability in China is currently still largely pushed by the government, while large majority of consumers is still in “catch-up” mode – Large enterprises pay more and more attention to ESG

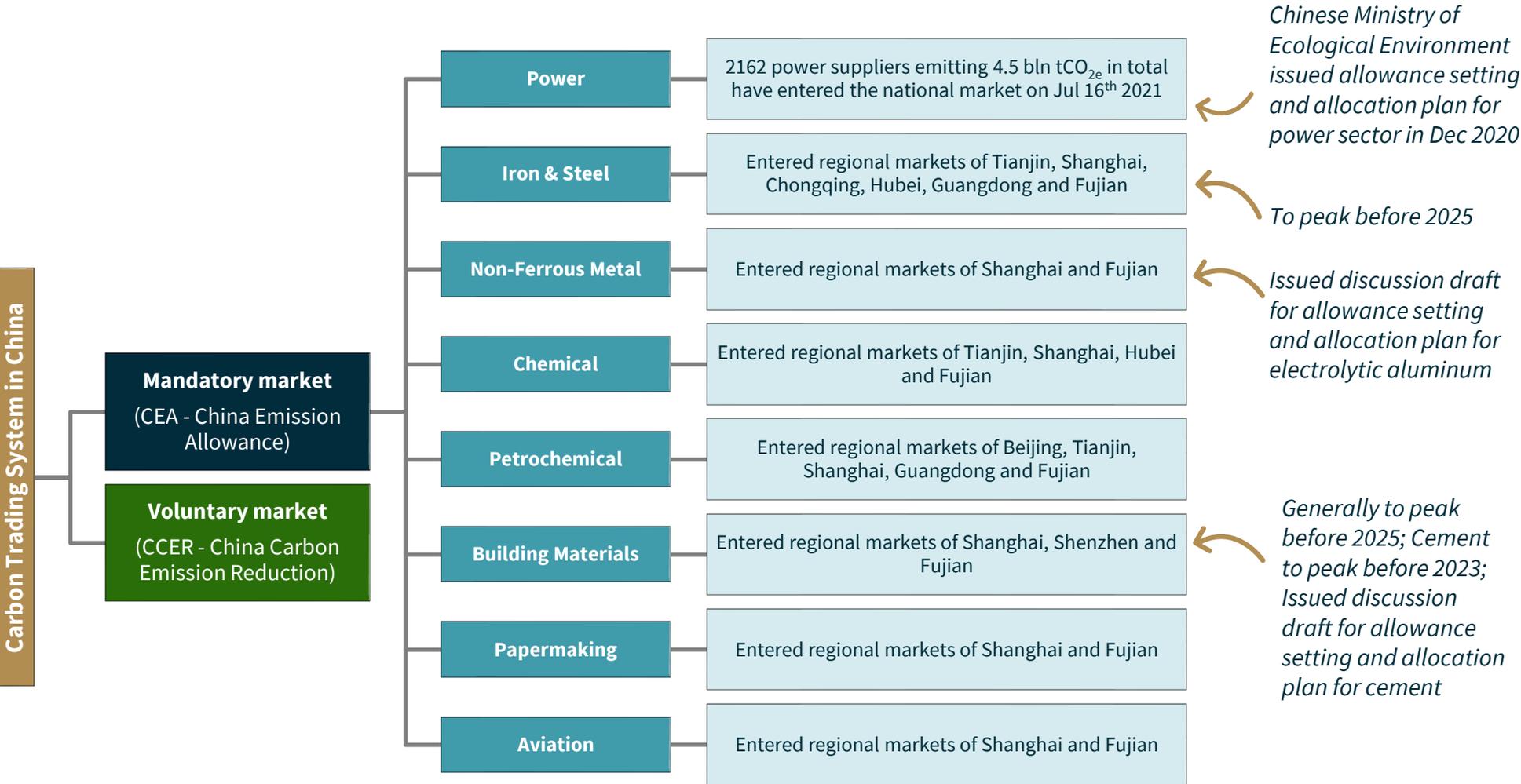
## GOVERNMENT

## (PRIVATE) COMPANIES

## CONSUMERS

- 
- + **Top-down introduction and push** of sustainability policies across all government levels
  - + Strategic interest in **energy security and self-reliance**
  - + **Ongoing regulation campaign** on “dirty” industries
  - + Sustainability as part of **education program**
  - + **Green Finance:** towards achieving carbon neutrality of asset portfolios
  - + **Outside drivers:** Governments of the exporters requiring ESG reporting and transparency
  - **Economic growth and rising prosperity** still rule over environmental concerns
- + **86%** of CSI300 A-Share companies issue **ESG reports** (investor relations)
  - + **New Economy companies** like Meituan, Xiaomi or Pingan have sustainability/ ESG on their agenda
  - + **Foreign-invested companies** need to fulfil global ESG commitments
  - + Global competition for Green Tech leadership
  - ESG not yet a big topic among Chinese **medium-sized firms**
- + **Rising sustainability awareness** in major tier-1 cities like Shanghai
  - + Gen Z tends to choose sustainable products (from Celine’s chapter)
  - + **“Digital society”** inherently resource-light (paper, etc.)
  - But for most people still **convenience overweighs sustainability** (e.g. food delivery, packaging)
  - Still in “consumption catch-up mode”: Limited pro-active demand for **sustainable/ “fair” products** like in some European countries

Chinese government has forced entities in eight industries into national mandatory carbon trading market – These industries account for ~70% of the country’s total carbon emissions



With CCETE launch in Jul. 2021, China carbon market is actively growing, while not yet mature, as liquidity increases and with government push, it shall have a decisive role in allocating energy resources

### FIRST TRADING YEAR SUMMARY (2021.6-2022.6)

- China Carbon Emission Trade Exchange (CCETE) has **concluded 1<sup>st</sup> year with promising figures** and keeps to further **receive government push**
  - **194 mln. tons** of carbon emissions allowances transacted
  - Worth over **1 bln. EUR**
  - **99%** compliance among total 2,162 **power companies**
  - Carbon price ranged from **48 RMB/t (~7.4 USD)** to a maximum of **61 RMB/t (~8.3 USD)**

### THE 20TH NATIONAL PARTY CONGRESS NEXT DEVELOPMENT FOR THE CCETE

- To Improve carbon emission **statistics and accounting** system
- To improve carbon emissions **trading** system

### CCETE KEY CHALLENGES & WEAK POINTS

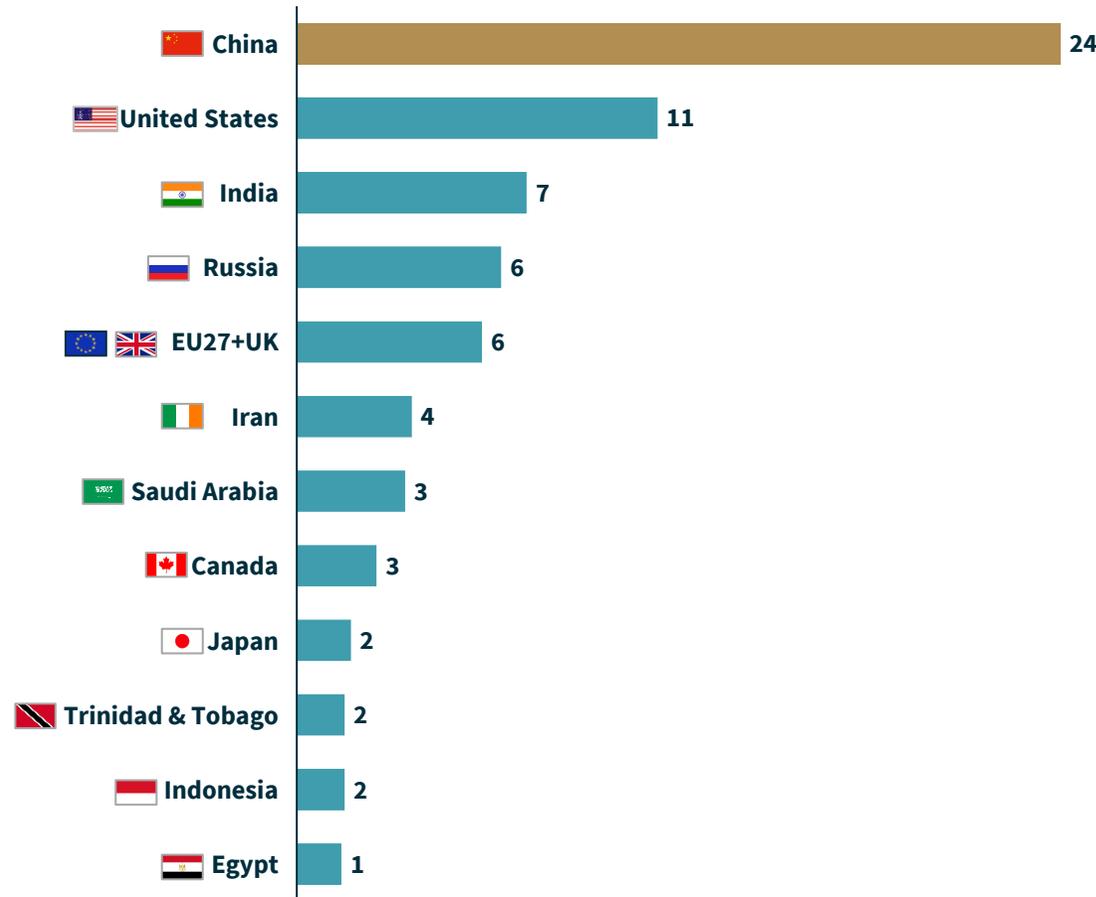
- Lack of transparency in fundamental **market data**
- **MRV** (Monitoring, Reporting and Verification)
- Continually released market reforms still don't fulfil a goal of making markets play a **“decisive role”** in allocating energy resources
- Although as the market matures the liquidity will increase

### NATIONAL ENERGY ADMINISTRATION

*“Carbon markets won't yet be integrated with power markets and green electricity certificates, but rather all three will be developed separately”*

## China by far the leading hydrogen producer and consumer while application still dominated by industrial

### HYDROGEN<sup>1)</sup> CONSUMPTION TOP COUNTRIES (2020, MLN METRIC TONS)



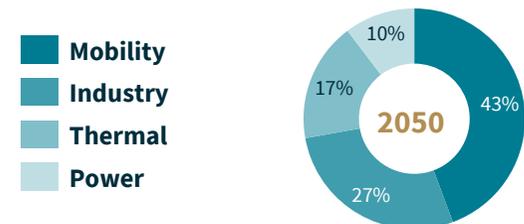
### CURRENT APPLICATIONS

Currently, hydrogen consumption focuses on **industry application**

- **China (~100% in industry)**
  - Ammonia (32%)
  - Refinery & Petrochemical (25%)
  - Ethanol (27%)
- **India (~100% in industry)**
  - Refining / Ammonia / Methanol / Steelmaking
- **Japan (both in Mobility & Industry)**
  - **Mobility** (fuel cell, refueling, heavy-duty vehicles, and ships)
  - Industry (Refining, Ammonia, Methanol, Steelmaking)

### FUTURE STRUCTURE

By 2050, future consumption structure would be:



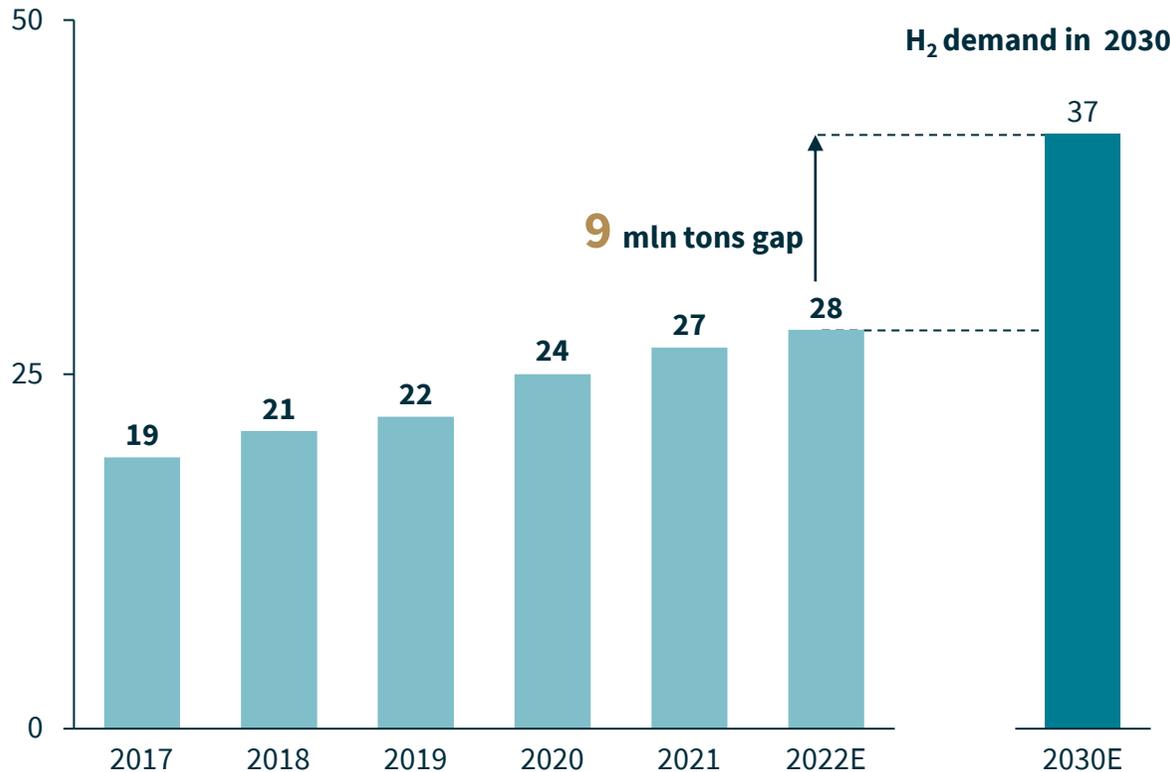
1) incl. grey, blue and green hydrogen

# HYDROGEN PRODUCTION AND CONSUMPTION IN CHINA

Mainly through coal gasification, hydrogen production is expected to grow to meet the needs in 2030, while the consumption structure will also shift to have more focus on energy sector

## GROWTH EXPECTATION HYDROGEN<sup>1)</sup> PRODUCTION CHINA (MLN TONS)

*China accounts for 1/3 of global hydrogen production*

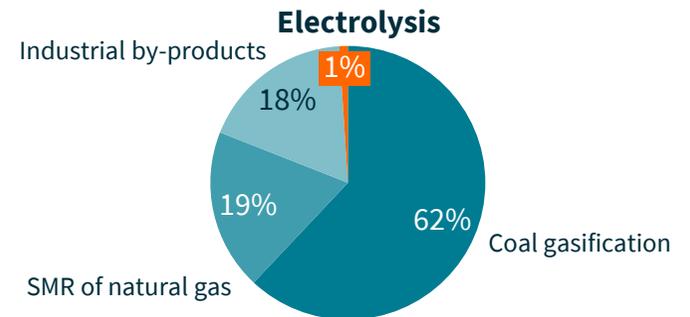


1) incl. grey, blue and green hydrogen

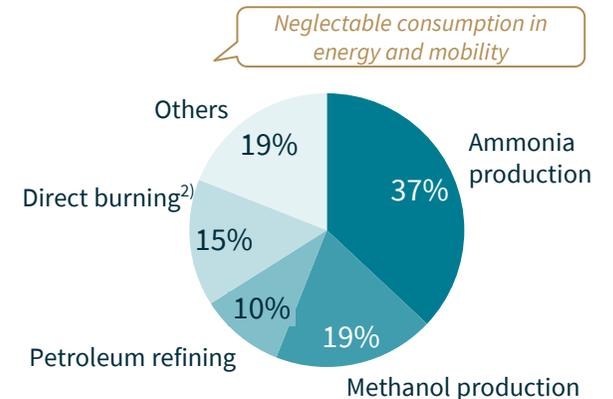
2) For iron, metallurgy industries, hydrogen can be burnt directly as reaction material and reductant or to simply for heat supply

## HYDROGEN SOURCES & CONSUMPTION

*Sources of hydrogen production in China*



*Consumption of hydrogen in China*



# HYDROGEN PRODUCTION TECHNOLOGY

For green hydrogen production technology, all the countries pursuing similar technology trends, while Western countries have relatively matured technology, but Asian countries are catching up

## TECHNICAL ROUTES OF HYDROGEN PRODUCTION FROM WATER ELECTROLYSIS, BY ELECTROLYTE SYSTEM

	ALK (Alkaline Water Electrolysis)	PEM (Proton Exchange Membrane)	SOEC (Solid Oxide Electrolysis Cell)	AEM (Anion Exchange Membranes)
Development Phase	Large scale commercialization	Small scale commercialization	Laboratory/ preliminary demo project	Laboratory
Electrolytic Cell (RMB/kW)	RMB 1,500-2,000 € 216-288	RMB 5,000-6,000 € 720-864	RMB13,000 € 1,872	N/A
Electrolytic Efficiency	60-75%	70-90%	85-100%	N/A
Energy Efficiency (kWh/Nm <sup>2</sup> )	4.5-5.5	3.8-5.0	2.6-3.6	N/A
Land Coverage	High	Low	N/A	N/A
Maintenance Cost	High	Low	N/A	N/A
Power Source Requirements	Need stable power source	Both stable or fluctuate power source	Need stable power source	Support quick on/ off

## TECHNOLOGY MATURITY BY COUNTRY



# COMPETITIVE LANDSCAPE OF ELECTROLYZER

Three types of players are participating in China electrolyzer market, traditional players who originated from military institute, new entrants of solar giants and active foreign players doing localization

## MAJOR ELECTROLYZER SUPPLIERS IN CHINA



- **Long history** dated back to 1990s, strong in alkaline electrolyzer, **PEM** electrolyzer is still **in development**



- Originally as a distributor, gradually developed own technology, now it has **both alkaline electrolyzer** and **PEM electrolyzer**



- Can only supply **alkaline electrolyze**



- **Leader in PEM electrolyzer**, power up to mega watts, can also supply alkaline



- Can **only** supply **alkaline electrolyzer**, but has a wider portfolio including nitrogen generator and EPC service



- Can only supply **alkaline electrolyzer**, had improvement in the catalyst and electrode



- Global leading **solar inverter** company, started hydrogen investment **in 2019**, currently has both **PEM and alkaline** electrolyzer



- Global leading **solar PV module** company, newly stepped into hydrogen **in 2021**, currently only has **alkaline electrolyzer**



- Had a **JV with Sinopec**, to localize **PEM** electrolyzer production in China



- Obtained the technology and R&D from **Suzhou Jingli** in 2018, focus on **alkaline** electrolyzer

**Traditional players** originated from **CSSC 718 Research Institute**  
Mainly strong in **alkaline electrolyzer**

**New entrants** from solar industry,  
**strategic investment in hydrogen**

**Foreign players in**  
**China**

Sustainability has gained tremendous momentum and is strongly pushed by Chinese government - sustainability is not an option anymore but becomes imperative

What are emerging opportunities alongside the sustainability push in China and how can foreign companies develop as local ESG champions?



**CHINA DEDICATED SUSTAINABILITY STRATEGY:** design and implement a clear and actionable ESG roadmap and to build-up credibility through sustainability labels and reporting - MNCs learning from their China business decarbonization as blueprint for businesses in other locations



**IDENTIFYING SUSTAINABLE PRODUCT OPPORTUNITIES:** regulatory and market transparency, customer willingness to pay for “green premium” and initiating the portfolio transformation process



**BUILD-UP RESPONSIBLE SUPPLY CHAIN:** assessment and optimization of existing supply chain to comply with global supply chain due diligence regulations



**DECARBONIZATION ROAD MAPPING:** reduction of emissions in local Chinese operation and develop business cases for green powering and carbon footprint optimization

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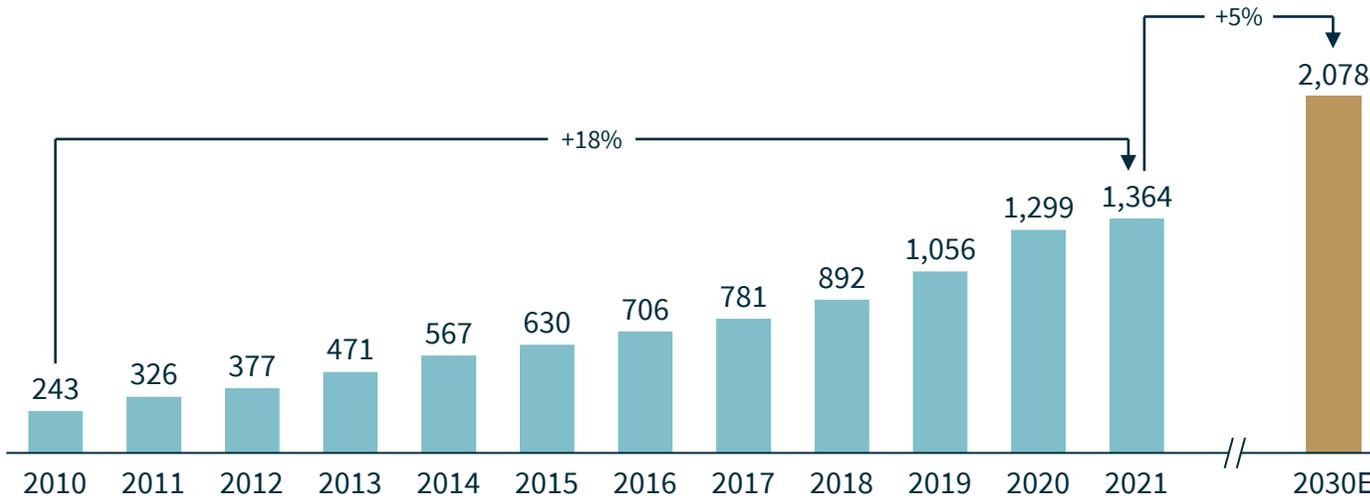
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# HEALTHCARE – A MAJOR MARKET OPPORTUNITY

Chinese healthcare market is expected to be ~1.4 tln EUR in 2021, and expected to continue growing steadily in the upcoming years, MNCs are continually pushing localization

## CHINA HEALTHCARE MARKET DEVELOPMENT: 2010-2030 (BLN EUR)



### EAC INSIGHTS

- China market presents **considerable growth opportunities**, particularly as the Chinese government has laid out **multiple initiatives** to support long-term growth and innovation
- MNCs are increasing local investment in China and expanding **from localized production to localized R&D**, even in face of the pressure from “domestic substitution”, MNCs still have advantages in **the high-end medical device market**

Typical Localizing MNCs: **SIEMENS** **Medtronic** **PHILIPS**  **GE Healthcare**

**~47%**

Life science and medical companies are confident about the Chinese market and plan to **increase local investment**

**~60%**

MedTech MNCs mention that **localization of manufacturing will be a key success factor**

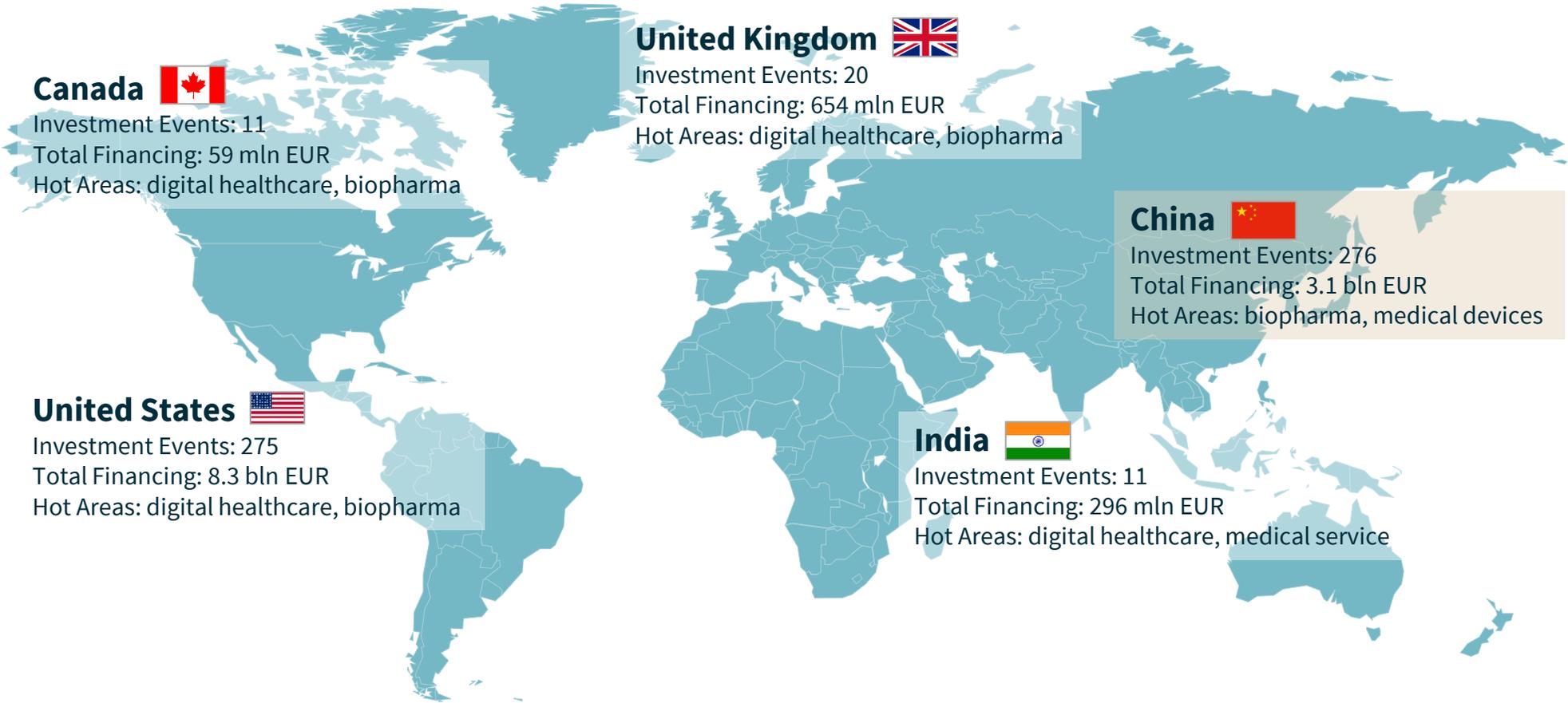
**~60%**

MedTech MNCs think **localized R&D or collaborating with local partners** on supply chain will present new opportunities

#### Source:

Life Science and Medical Industry Survey in China 2022  
Market Survey on Medical Localization 2020

China had the most healthcare investment events in 2022 Q3 and the second-largest overall financing amount, with biopharma and medical devices being key areas of interest for Chinese investors



**China and U.S.** lead the world in terms of the financing events amount and value in 2022 Q3, accounting for **84% of all countries' total financing** and **81% of financing events**

National industry is supported by various high-level government policies

## MAJOR HIGH-LEVEL GOVERNMENT POLICIES BOOSTING THE HEALTHCARE INDUSTRY



### HEALTHY CHINA 2030

- First **mid- to long-term strategic plan** in health sector developed at national level (overall blueprint guide incl. two **sub-plans**)
- Greater focus on **prevention**, **DRG** payment model, diversification of **healthcare providers**, **innovation** orientation
- Selected objectives:
  - ▲ Health service sector gross value
  - ▲ Avg. life expectancy to 79
  - ▼ Infant mortality rate to 0.5%
  - ▼ Premature mortality from chronic disease by 30%

### 14TH FIVE-YEAR PLAN

- Focus on development of **diagnostic imaging equipment**, medical robots, new implantation devices, biomedical materials, wearable equipment, etc.
- Cooperation with medical institutions for **upgrading medical device production in volume & quality**
  - Strengthen standardized application of medical devices in different levels of medical institutions
  - Promotion of **DRG implementation** for general surgery & treatment

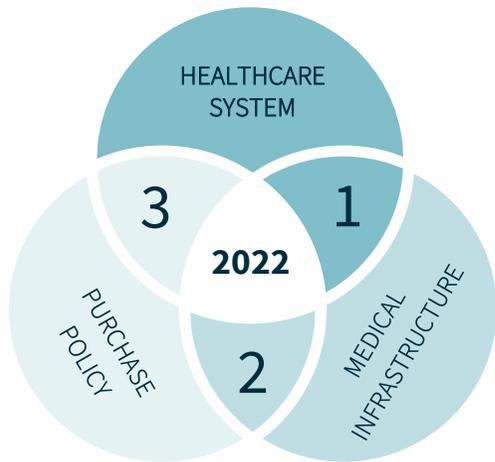
### CHINA'S HEALTHCARE PUSH

### 20TH CPC MEETING

Strengthen **internal circulation, localization, industrial upgrading**

Acceleration of **medical and scientific research infrastructure**

Government continued to exert influence over the healthcare system, medical infrastructure, and purchase policy in 2022 to address China's medical needs following the pandemic



## 1. HEALTHCARE SYSTEM REFORM



- COVID-19 has pushed **three stages** of development for China's healthcare system
  - 2020: **Filling in the gaps** of medical capabilities in medical institutions at all levels
  - 2021: **Relax restrictions** on the expansion of grade-A tertiary hospital
  - 2022: Medical insurance gradually **centralized management** (city level to provincial level to national level)

**Strengthen the treatment ability and patient payment ability**

## 2. NEW MEDICAL INFRASTRUCTURE



- Government is pushing the **updating of medical equipment** to equalize the disparities in medical standards between areas and hospitals
- People's Bank of China set up a **low-interest loan** for enterprise equipment renewal
  - The Health Commission intends to use **financial discount loans** to update and transform medical equipment

**Update infrastructure to comprehensively improve medical standards**

## 3. VOLUME-BASED PURCHASE PUSH



- Pushing volume-based purchase (VBP) policy for **high-value consumables**
  - **Dental implants:** Moderate price cuts
  - **Innovative medical devices:** slow progress of VBP, leaving room for innovation
  - **Coronary stents:** mature VBP category with potential to reform
  - **Electrophysiology products:** higher certainty of winning bids to leading enterprises

**High-value consumables as the entrance to promote the VBP of medical devices**

## Medical devices market feature strong growth potential alongside trend of localization - foreign companies need to prepare for the surge in local competitiveness

### Continued Strong Demand

- Aging population and increasing medical expenditure are supporting the stable growth of long-term medical device demand

### Boost of COVID-19

- Soaring demand for COVID-19 related medical equipment such as ventilators, respiratory care equipment and vital monitoring equipment in domestic and overseas markets

### Increasing Local Competition

- Domestic players' steep learning curve from technology proliferation of foreign companies' localization
- Rising local innovation in high-end medical device market

### Incentives for Foreign Companies

- Several healthcare-related industries are on China's Encouraged Investment List, and thus eligible for preferential treatment (e.g. tax deductions); cities like Shanghai actively promote and support set-up of local R&D

### Government Support for Chinese Companies

- Directing and funding innovation projects, enforcing favorable tax laws, streamlining administrative processes, and providing incentives (Healthy China 2030, Made in China 2025, 14<sup>th</sup> FYP)

### “Buy-local” Purchasing

- Centralized Volume-Based Procurement to reduce health care cost and unwritten “buy-local” practices create price pressure as well as need for localization

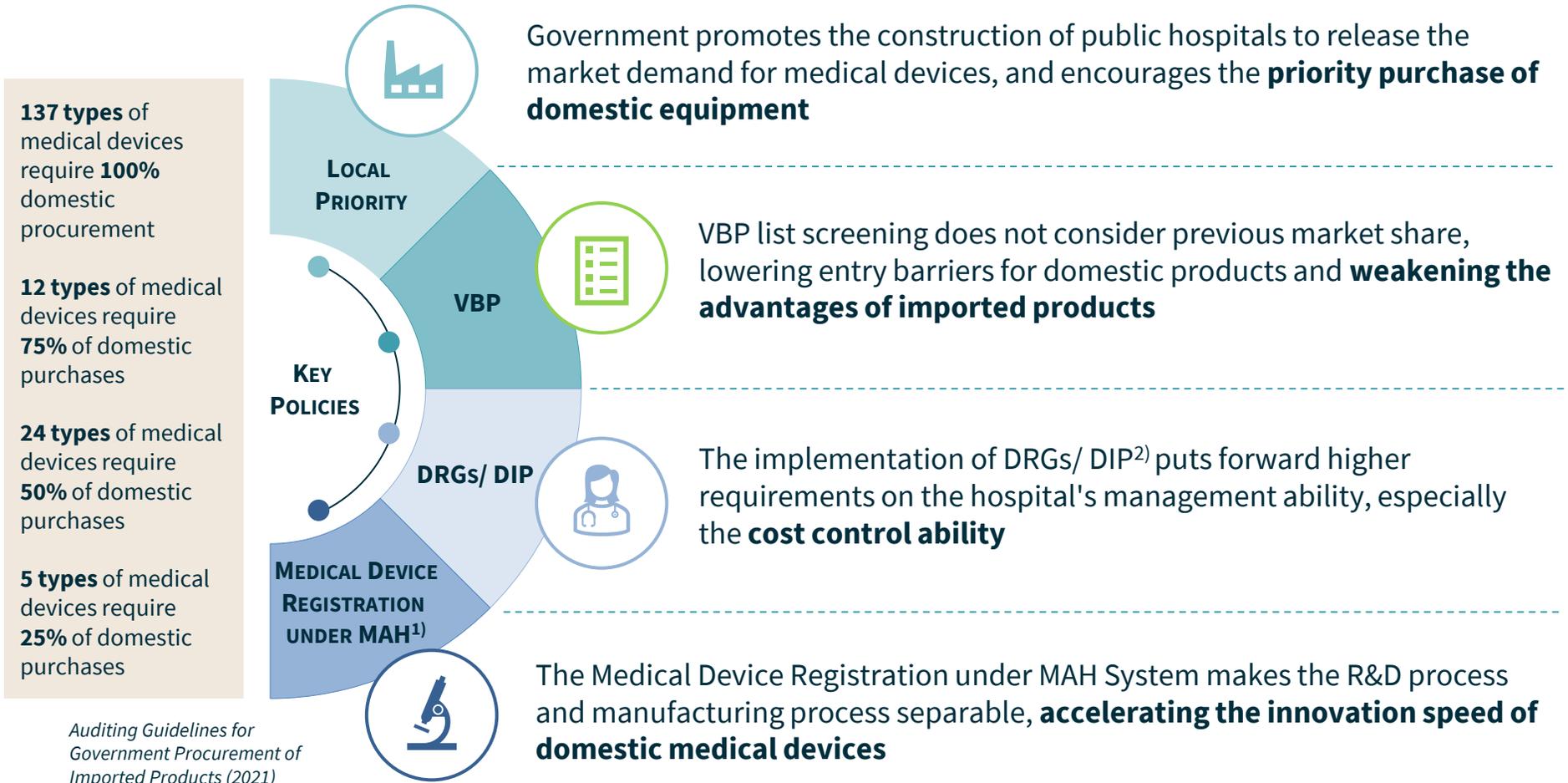
### Changing Consumer Perception

- Foreign products not always perceived as superior anymore (esp. by generation X)
- Growing trust in domestic companies & products (also fueled by nationalism)



 Rise of local competitors

Government published the overall guidance for localized purchasing, and is promoting the development of domestic enterprises through different policies



1) MAH refers to Marketing Authorization Holder System

2) DRGs refers to Diagnosis Related Groups; DIP refers to Diagnosis-Intervention Packet

In the face of high growth potential but increasingly aggressive policy impacts, companies need to be prepared to respond flexibly



*What is the required action demand to succeed in the growing Chinese healthcare market?*



**UNDERSTAND THE LOCALIZATION DYNAMICS** of different categories according to your product portfolio, and identify markets with less policy impact and the white spots with incremental potential (e.g. high-end medical device market)



**REVIEW YOUR LOCALIZATION STRATEGY** and be prepared to flexibly adapt to local competition and market demand dynamics (e.g. further invest in, or gradually withdraw from the market)



**EVALUATE THE BENEFITS OF PARTNERING** with local companies for potential improvements in sales, localization, digitalization, etc.



**CHECK THE DISTRIBUTION CHANNELS** that are most important to you and where foreign manufacturers will have the most success (e.g. private hospitals)

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In times of escalating geo-political tensions, foreign companies operating in China are required to re-assess their China strategy to balance both growth potentials but also mitigation of potential risks

Growing geopolitical tensions between the USA and China, the war in Ukraine and an increasing regional bloc formation reflects that **unconditional globalization is coming to an end** and will be replaced by a different kind of globalization – stronger regionalization and decoupling

While ‘*decoupling is here to stay*’ as irreversible trend, it remains critical to understand the intensity and speed of decoupling alongside macro-economic and geo-political circumstances and for **foreign companies to de-risk their China exposure and to strengthen the resilience** of their global and Chinese value chains

## WESTERN VIEWPOINT



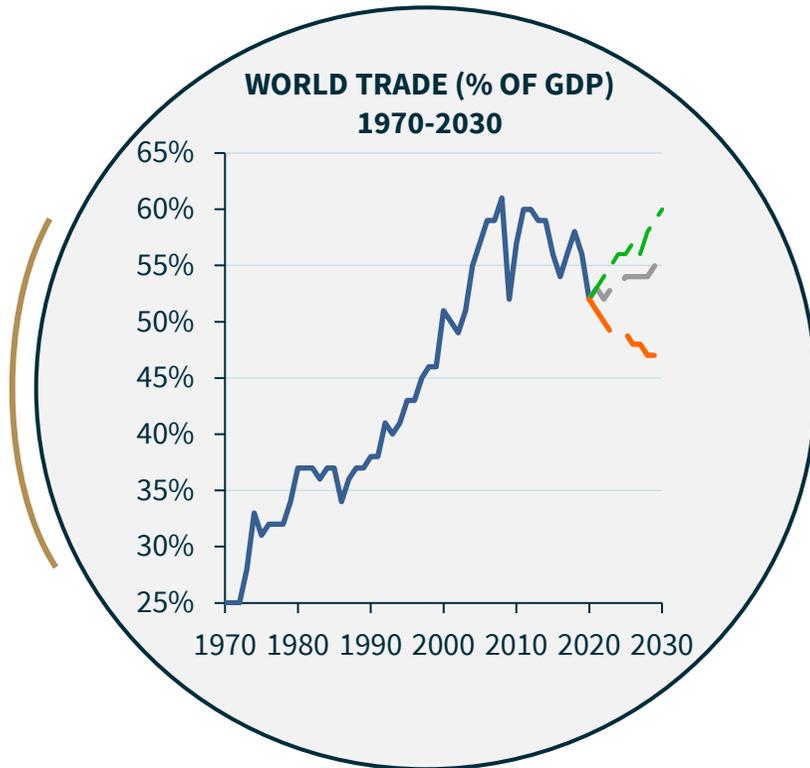
- ❖ **Decrease dependency** on China & **supply chain risk**
- ❖ Build-up of a **China-independent value chain**
- ❖ **Counterbalance** to increasingly authoritarian China
- ❖ Protection against unfair Chinese industry practices
- ❖ **US sanctions against Chinese US exports**

## CHINESE VIEWPOINT



- ❖ Safe-guard **economic & technological independence**
- ❖ **Strengthening of own economy** and companies
- ❖ **Protection of Chinese interest** and risk reduction
- ❖ Stronger **internationalization of Chinese companies**
- ❖ **Countermeasures to US sanctions**

## Long-term perspective: Globalization lives on but is going through a transformation with an increasing decoupling tendencies



— Historical data    — Best case  
— Base case        — Worst case

- The era of ever-increasing **free-trade and decreasing tariffs comes to an end**
- **COVID increased protectionist trends** that already started pre-COVID
- **US-China conflict more and more serious and here to stay** – European companies often in difficult situation to please both sides
- **COVID accelerates technology race** – increasing chances for companies that can adapt
- Despite all differences between its members, **only a united Europe can keep its economical and political importance**

**COVID will economically shape a significant part of the 21st century. We enter a new era – an era of disorder**

## Decoupling can take different forms and impact companies in different ways

### Decoupling of data governance, network equipment and telecommunications services

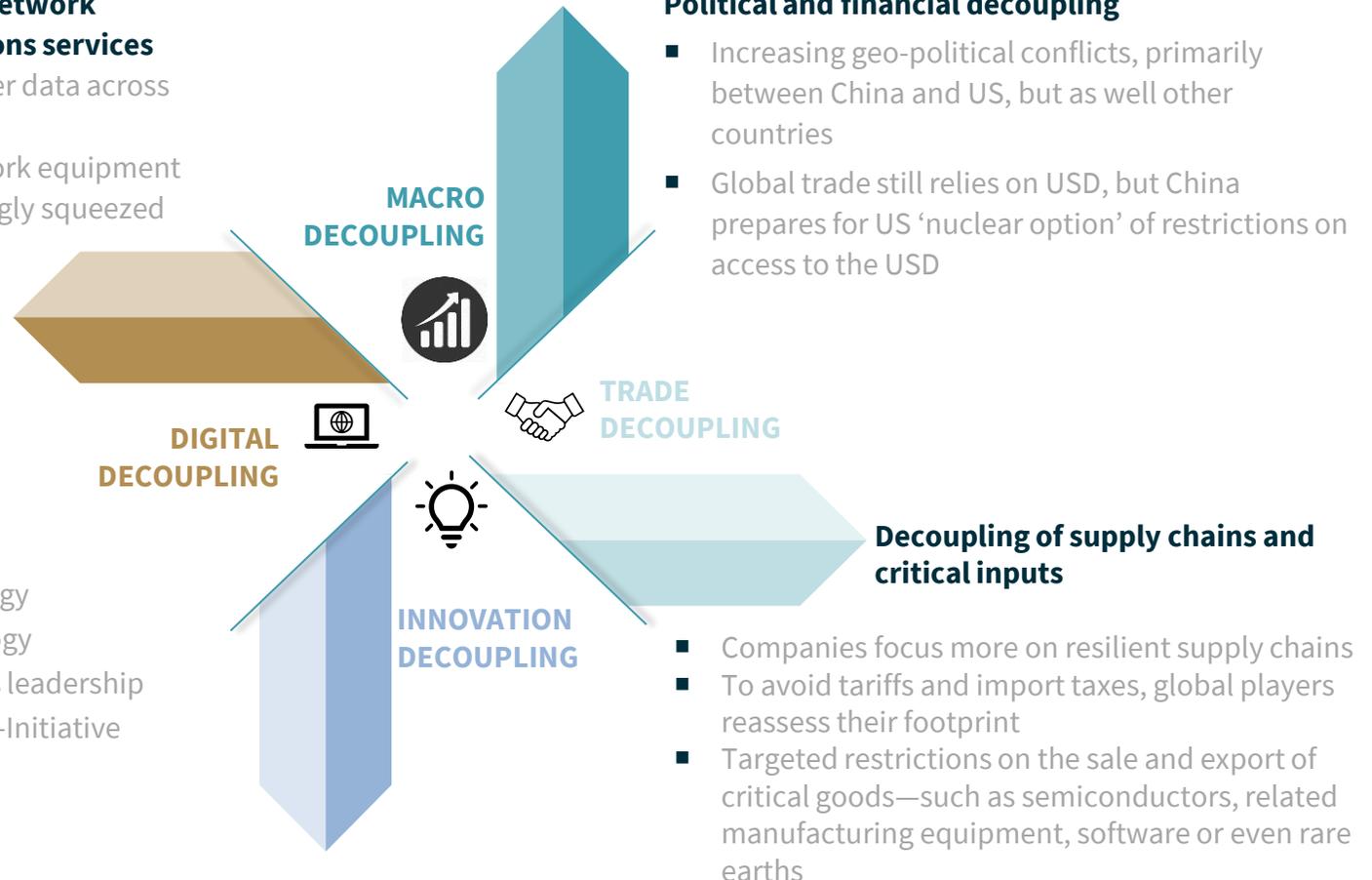
- Increasing restrictions to transfer data across borders
- Telecommunications and network equipment manufacturers feeling increasingly squeezed out of the Chinese market

### Decoupling of R&D and standards

- Increasing conflicts on technology
- Exports bans of critical technology
- China pushes for own standards leadership with its “China Standards 2035”-Initiative

### Political and financial decoupling

- Increasing geo-political conflicts, primarily between China and US, but as well other countries
- Global trade still relies on USD, but China prepares for US ‘nuclear option’ of restrictions on access to the USD



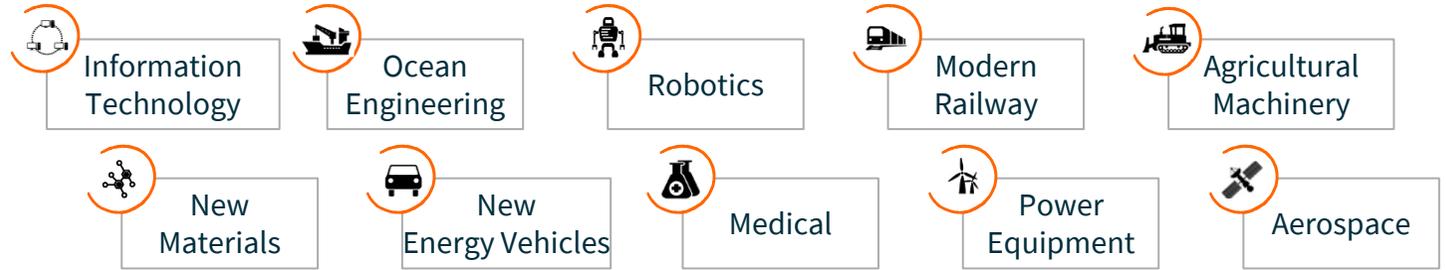
China’s answer to “decoupling” is already in swing for 10 years with recent geo-political frictions adding new momentum – foreign companies urged to revisit and match their China strategy to stay in the game

## MADE IN CHINA 2025 AT A GLANCE (FORMULATED IN MAY 2015)

**3 Phases**  
with both short- and long-term goals



**10 Key Sectors**  
identified as priority industries for innovation



**Attention points Foreign companies**

- 1 Match company strategy with MIC2025
- 2 Keep innovation and quality advancement
- 3 MIC2025 impact on foreign imports
- 4 Regulatory changes / potential subsidies
- 5 China’s push for own standards
- 6 Product adaptations to local needs
- 7 Local R&D requirements / eco-system
- 8 Increasing local competition in key sectors

China has already taken the lead in various areas, especially in the E-commerce, Artificial intelligence, NEV and the number of China's unicorns is constantly increasing

## 10 Global leading sectors/industries of China



5G



Mobile Payment



New Energy Vehicles



Aerospace



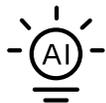
Photovoltaic Panel



Quantum



E-commerce



Artificial Intelligence



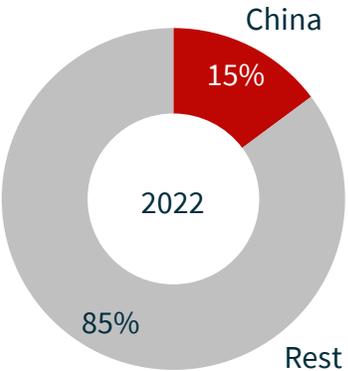
Gene Sequencing



High Speed Rail

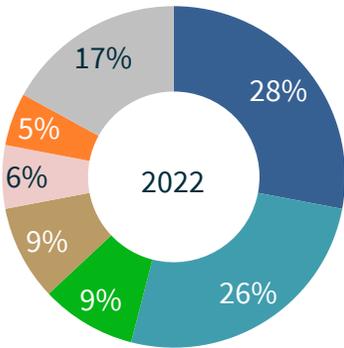
## Unicorns

CHINA UNICORNS (2022)



As of June 2022, **173** out of 1,168 unicorns are from **China**

CHINA UNICORN COMPANY VALUATION BY INDUSTRY



- E-commerce
- Artificial intelligence
- Auto & transportation
- Hardware
- Consumer & retail
- Edtech
- Others

**672 bln USD** of total China unicorn companies' valuation

Depending on the importance of the Chinese market and its production capabilities, companies can be clustered into different China dependencies with different China risk profiles and counter measures



**Comprehensive de-risking strategy requires the assessment of China exposure by each value chain step with a resilience framework to be built and tailored to company specific situation**



Going forward: Key is the understanding of future political & economic China development scenarios and the respective impact on current value chain exposure in China

## DECOUPLING = prepare for de-risking

### SCENARIO 1: BACK TO OPENING



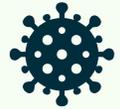
- Despite restrictions for foreign players remaining, **no deterioration**
- **Further opening up and market reforms** in some areas possible
- **Limited decoupling**

### SCENARIO 2: “CHINA FIRST”



- **Increasing domestic focus** with decreasing international collaboration & exchange
- Continuous **pressure on foreign companies** and experts in China
- **Uncertainty in real estate** industry

### SCENARIO 3: COVID RELOADED



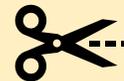
- Unpredictable **supply chain disruptions and travel restrictions**
- **Recurring lockdowns**

### SCENARIO 4: CHINA RECESSION



- **Sharp slowdown in Chinese economy** (e.g. triggered by real estate crisis)
- Increasing **prioritization of local players**
- **Shrinking government investments**

### SCENARIO 5: BLOC FORMATION



- Geo-political **block building of western democracies vs. authoritarian states**
- **Increasing risk for western companies** to do business in China
- **Lower economic growth** likely

### SCENARIO 6: ESCALATION

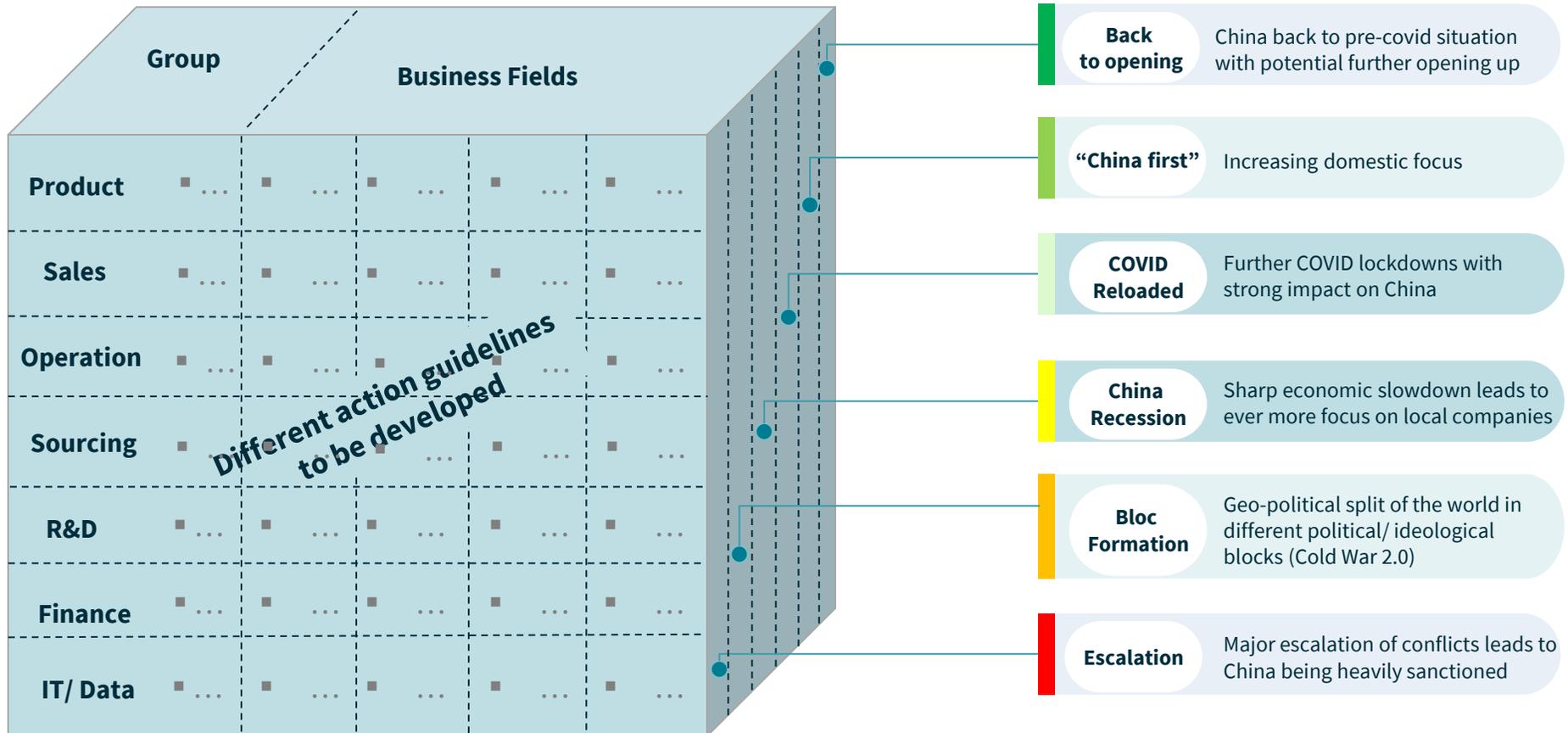


- Triggered by major geo-political events (tensions US) **China will be isolated globally**
- **Russia-like sanctions** by western countries
- **Sharp economic slowdown** in China likely

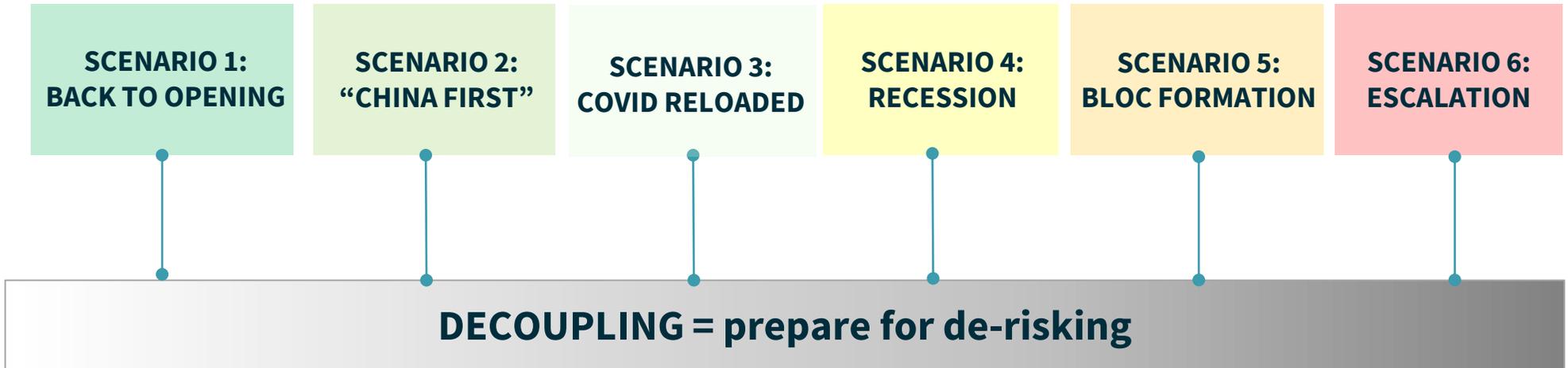
China de-risking require individual assessment by different business fields and corporate functions as maturity levels and vulnerabilities are varying

SPECIFIC ACTION DEMANDS ARISE ...

... DEPENDING ON THE DIFFERENT SCENARIOS



Foreign companies are tasked to respond adequately with forward-looking strategies - to prepare for increasing uncertainties as well as seizing growth opportunities in a risk-reduced manner



Product	Sales	Operation	Purchasing	R&D	Finance	IT	Governance
Global competence center	Push customer diversification	Expand local footprint	Global sourcing synergies	R&D push to market	Global cash management	Integrated IT set-up	Embedment in global organization
<b>vs.</b>	<b>vs.</b>	<b>vs.</b>	<b>vs.</b>	<b>vs.</b>	<b>vs.</b>	<b>vs.</b>	<b>vs.</b>
Maintain local product development	Remain core & focus local customers	Scale-down & alternatives (e.g. SEA)	Fully localized to demand (CN&TW), dual systems	R&D only for local, maintain local eco-system	Fast cash repatriation, local financing	Separate IT set-up China (dual systems)	Stronger local autarky

# IDEAL POSITION – RESILIENT CHINA BUSINESS

Being considered a true local player is increasingly important to succeed in Chinese market



*From a typical foreign business ...*

- ❖ Rely on import business
- ❖ HQ-centered decision making
- ❖ No strategic focus on China
- ❖ Company goals not aligned with government goals
- ❖ Limited government ties
- ❖ Limited connected in local Eco-System
- ❖ No strong local partnerships

*... to a resilient China business –*



- ❖ Strong “Local for local” set-up (Procurement, Production, Sales)
- ❖ Highly connected in local Eco-System
- ❖ Focus on resilient value chain – minimal dependency between China and ROW
- ❖ Mature & self-sufficient organization
- ❖ Balance financial risks and opportunities
- ❖ Strong local partnerships and government ties
- ❖ Willing to invest in China – but light
- ❖ Strategic long-term goals aligned with government goals

Foreign companies are required to re-assess their China strategy and to strengthen their value chain resilience as preparation for different potential China scenarios to unfold

What are critical success factors and resilience measures for the China business to capture future market potentials, with a risk-reduced approach?



**FORESIGHT CHINA DEVELOPMENT SCENARIOS:** validation potential scenarios in terms of opportunities & risks and assignment of probabilities over time and impact on existing China business



**TRANSPARENCY CHINA RISK EXPOSURE:** critical assessment of current China set-up and identification of risk areas “*De-Risking Radar*” per business field and value chain function



**PEER BENCHMARKING:** out-side in benchmarking of comparable foreign companies (scale and organizational complexity) to retrieve best practice learning and ideation for de-risking roadmap



**RISK MITIGATION ROADMAP:** development of tangible and agile de-risking measures with milestone planning and clear regional and functional responsibilities

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# OUTLOOK – MAJOR EVENTS & ACTIVITIES 2023

In 2023, all eyes will be on the 19th Asian Games in Hangzhou, as well as several national level trade fairs and important political meetings

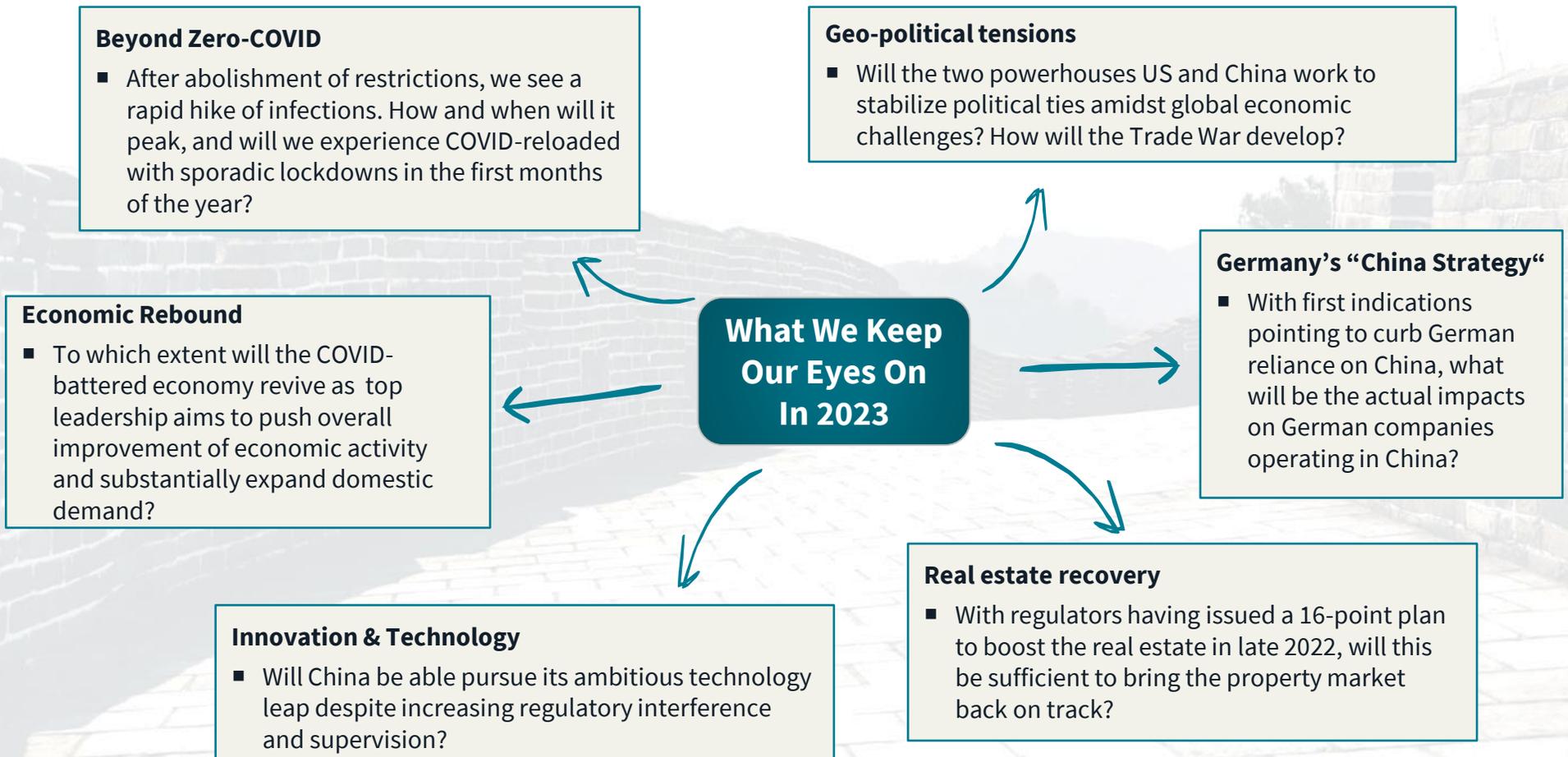
## MAJOR EVETS AND ACTIVITIES IN CHINA 2023



1) postponed to 2023



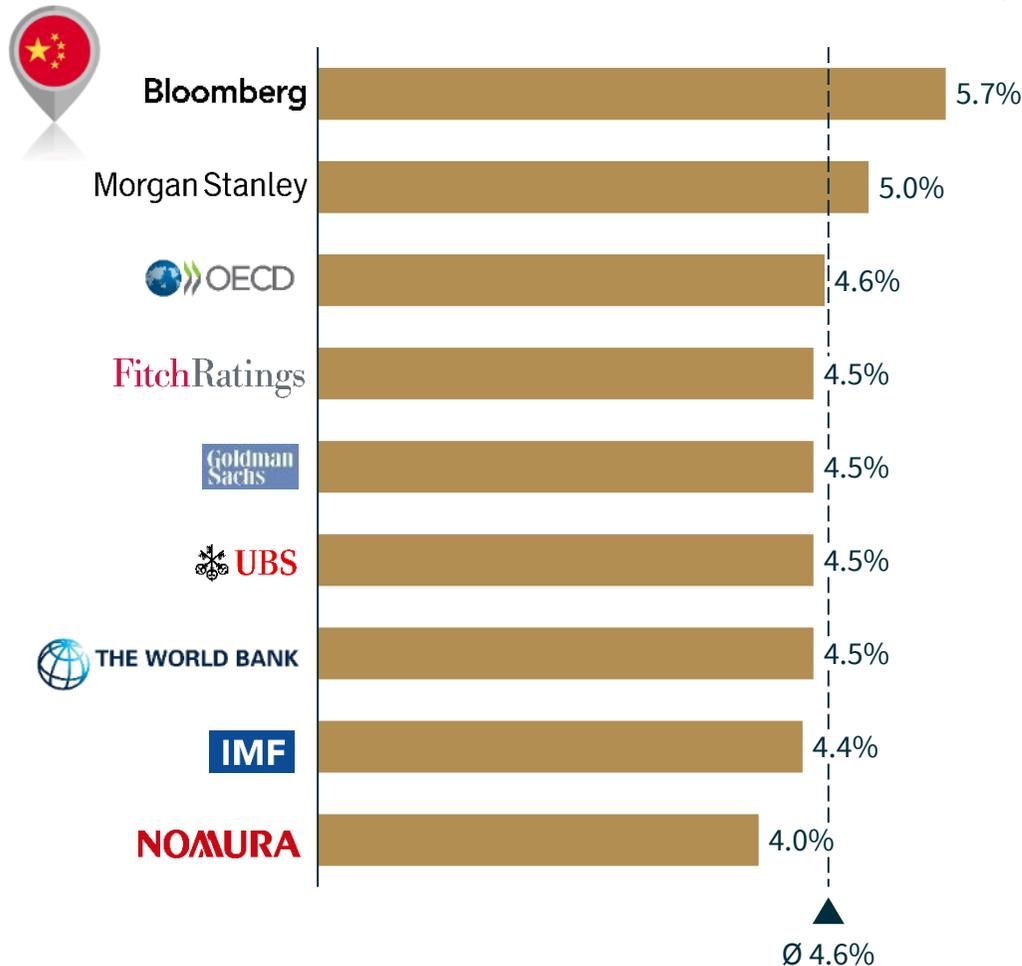
**2023 will certainly remain a stormy year with domestic and international challenges still to be solved: trade wars & decoupling, economic pressure & high unemployment rates and with COVID still around**



Major global institutions forecast China’s economic growth to recover in 2023 (Median 4.6%), however recent shift in COVID-measures may lead to disruptions especially in early 2023

## 2023 CHINA GDP GROWTH FORECASTS (% YOY)

as of Dec. 2022

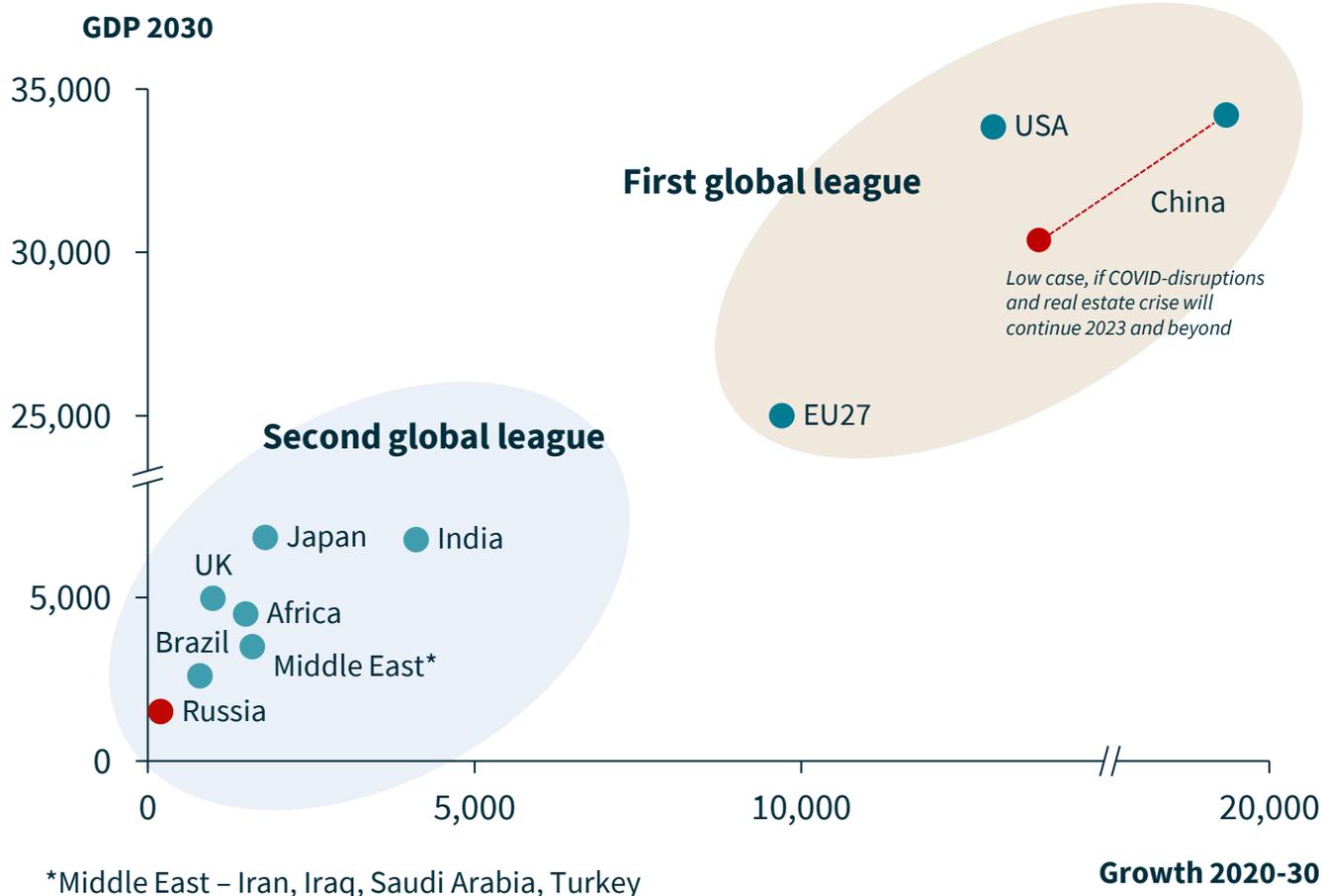


## HEADWINDS FOR CHINA GROWTH

- **From Zero-COVID to Zero-Control**
  - Unprecedented easing of COVID restrictions in mid-Dec already resulted in surge of infections with negative impact on manufacturing activity most likely
  - Still low vaccination rates in most vulnerable groups (elderly, people with pre-conditions) and pressure on healthcare system
  
- **Land sales and real estate downturn**
  - Declining real estate market leads to fewer land sales by local governments
  - Real estate accounts for significant part of GDP
  - Declining land sales leaves Chinese local governments cash-strapped with less means for (infrastructure) investments
  - Increasing governments deficit since 2020 (5.5 TRMB in 1-6/2022 as record high)
  - Too high GDP share (>30%) by government
  
- **Increasing domestic and geo-political tensions**
  - Crackdowns on private sector
  - High youth unemployment rate of ~20%
  - Pressure on innovation capacity
  - Wealth inequality and weak social welfare system and rural vs. urban divide
  - Declining and aging population
  - Energy security vs. economic growth
  - Supply chain vulnerabilities

China on track to overtake the US as world's largest economy: point of inflection depending on both global geo-political situation and domestic growth momentum

## GROSS DOMESTIC PRODUCTS IN 2030 AND GROWTH 2020 TO 2030 (BLN USD, CURRENT PRICES)



- ❖ By 2030, **global GDP is predicted to double** (from 95 trn USD in 2021)
- ❖ The “**First global league**” will account for **50%** of global GDP in 2030
  - Share on absolute GDP increase of 46%, whereby **half is contributed by China**
- ❖ China continues to be **most important global growth market**

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We regularly publish in-depth industry reports and client briefings



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The Customer-Oriented Pre-sales and After-sales Service Strategies



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## China Service Excellence of Industrial Companies

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## Localization of Global ESG Strategy in China

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**Business Transformation Strategy Portfolio**  
Agile and Forward-looking Strategies for Coping with Local Market



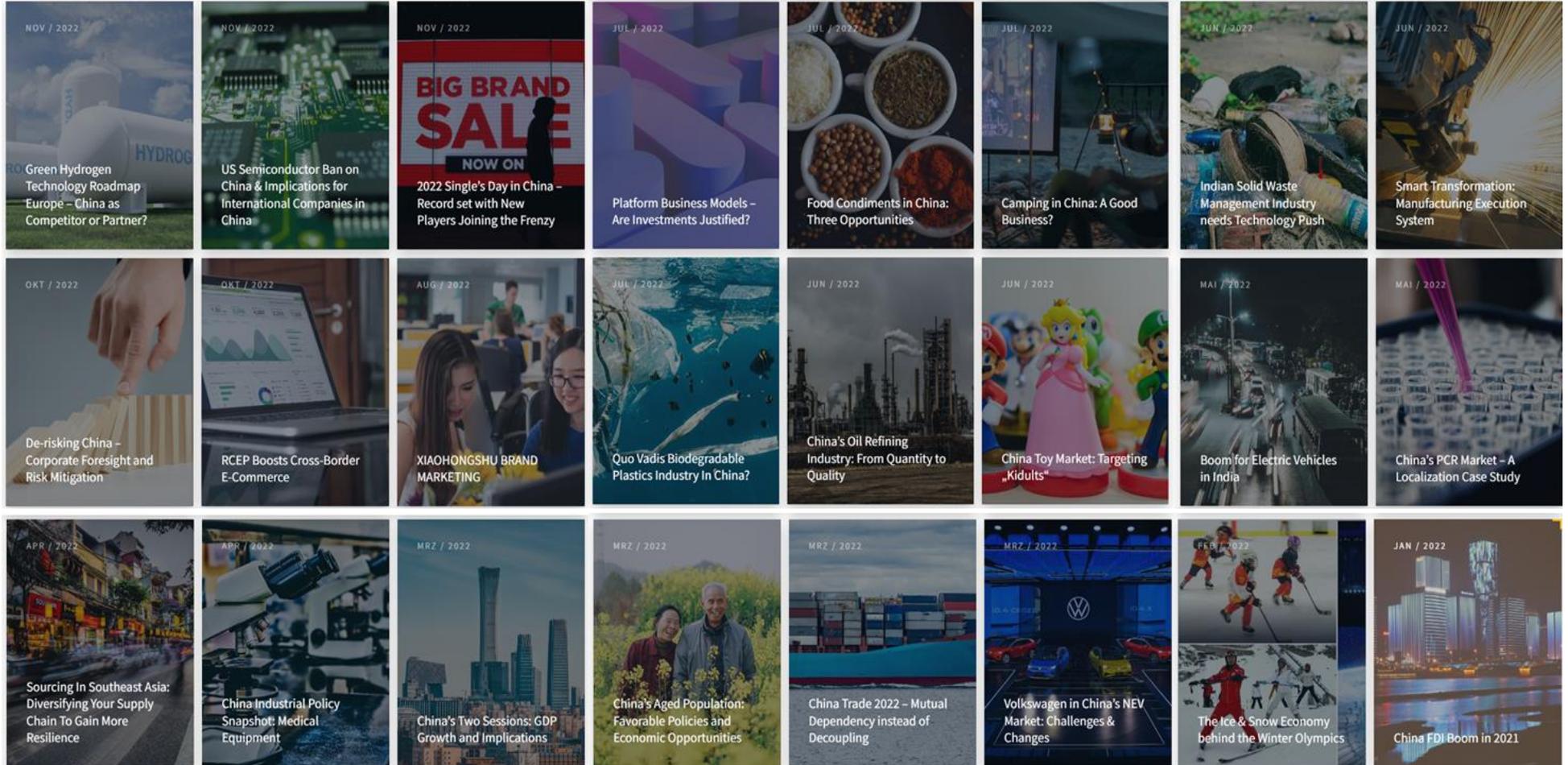
**To evolve agile and forward-looking strategy in local market**  
As China is advocating high-quality development, Western companies have seen development opportunities that focus on quality, also are anxious about how to enter and develop the local markets. EAC offers the business transformation model.

## Business Transformation Strategy Portfolio

As China is advocating high-quality development, Western companies have seen development opportunities that focus on quality, also are anxious about how to enter and develop the local markets.

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EAC continued its regular publishing its one-page Executive Briefings for Professionals, summarizing current development in China on-point – [find out more](#)



The curated China business news digest for executives and professionals, sent to your inbox directly from the heart of Shanghai



The newsletter cover features a gold map of China in the top left, a blue 'FREE' badge in the top right, and the title 'EAC CHINA Business Briefing' in the center. Below the title is a dark blue bar with the text 'China Business Briefing | November 2022'. The main image shows four men in business suits standing side-by-side with their arms crossed. At the bottom, there is a text block describing EAC's expertise and listing the partners in China.

**FREE**

**EAC CHINA Business Briefing**

China Business Briefing | November 2022

EAC is the expert for Strategy, M&A, Operational Excellence and Sustainability in Asia. With 30 years of experience and offices in Munich, Shanghai, and Mumbai we provide strategy development and globalization solutions for international companies. Your Partners in China are **Daniel Berger, Uwe Haizmann, John Deng and Eric Luo.**

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- With 30 years of local presence EAC is a pioneer in the emerging core markets China and India
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- We are overachieving the expectations of our customers with individual consulting approaches and innovative strategies
- We are a strong strategy partner – also during execution stage. Our project philosophy: “Walking the last mile”

# WHO IS EAC? – SUPPORTING YOUR SUCCESS IN CHINA

All four Partners in China contribute to helping foreign companies to localize and succeed in China with their respective functional focus



Daniel Berger  
Partner EAC Shanghai

**Sustainability:**  
*“Transform sustainability into a competitive advantage in China”*

**M&A:** *“Utilize the local partner universe to grow or optimize your China business”*



Eric Luo  
Partner EAC Shanghai

**HELPING FOREIGN COMPANIES TO NAVIGATE IN CHALLENGING TIMES IN CHINA**



John Deng  
Partner EAC Shanghai

**Strategy:** *“Localize your China product portfolio to address local market & customer requirements”*

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Uwe Haizmann  
Partner EAC Shanghai

# REACH OUT TO US!

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