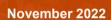


What does the 20th National Congress of the CPC mean for China's economy?







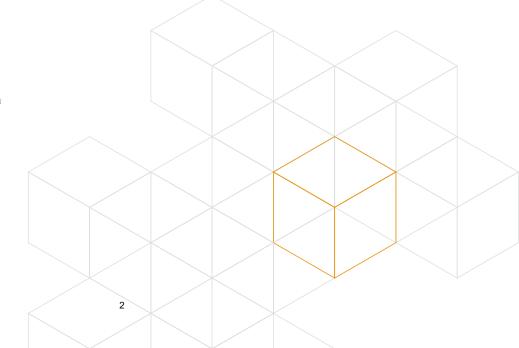




Source: Xinhua News

The 20th National Congress of the Communist Party of China (CPC) took place in Beijing from 16 to 22 October. During which, the party's top leaders were elected and major issues settled. The Congress stressed that building a well-rounded modern socialist country is a great and arduous undertaking. Xi Jinping, the re-elected general secretary for the 20th Central Committee of the CPC, and chairman of the Central Military Commission said, 'we'll be steadfast in deepening reform and opening up across the board, and in pursuing high-quality development', while also highlighting that a prosperous China will create many more opportunities for the world. Just as China cannot develop in isolation from the world, the world needs China for its development.

So what are the highlights of the Congress and the report? What does the 20th National Congress mean for China's economy?



Highlights of the 20th National Congress

The agenda for the week-long event was finalised during the October 15th preparatory meeting. It mostly includes the following:

- Hear and examine the report of the 19th Central Committee.
- Examine the work report of the 19th Central Commission for Discipline Inspection (CCDI).
- Deliberate and adopting the Amendment to the Constitution of the Communist Party of China.
- · Elect the 20th Central Committee.
- · Elect the 20th CCDI.

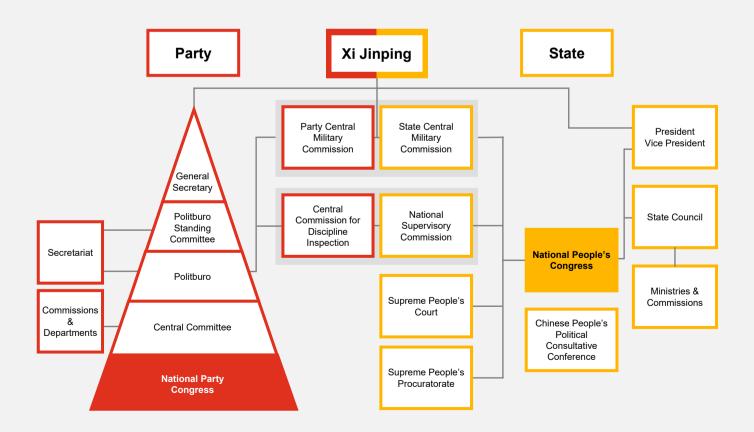
2,296 deputies attended the Congress, representing over 4.9mn primary-level Party organisations and 96mn Party members. After the draft report of the 19th Central Committee was issued, over 4,700 people were asked for their opinion.

During the national congress, several major reports and/or documents were delivered, reviewed, discussed and approved. The newly elected 20th Central Committee came into power with 205 members and 171 alternate members along with 133 members of the 20th CCDI.

The following morning, the 20th CPC Central Committee re-elected Xi Jinping as the general secretary in its first plenary session, along with seven members of the Standing Committee of the Political Bureau (Standing Committee), the Party's top leadership. Xi Jinping was also re-elected as the chairman of the Central Military Commission, the top military body of the CPC. With this, Xi Jinping will continue to serve as the head of both the CPC and Chinese army.

As the CPC is the ruling party in China, members of the Standing Committee are expected to take up the key roles, similar to a cabinet of ministers, during next year's National People's Congress (NPC) and Chinese People's Political Consultative Conference (CPPCC), the Two Sessions. These roles include State President, Premier of the State Council (the government) and Chairman of the National People's Congress (national legislature), Chairman of the CPPCC National Committee, among others

China's Party & government organisation chart



Among the documents presented, the Report of the 19th Central Committee, presented by Xi Jinping to the congress, is the most significant in terms of economic development. Most of the other documents address either the political (party governance), discipline inspection or personnel arrangements, such as the resolution for an amendment to the Constitution of the CPC and the resolution on the work report of 19th CCDI, among others.

Additionally, the 20th National Congress' resolution on the Revised Constitution of the Communist Party of China is another important document. The amendment addresses economic development and includes the following:

 China is moving toward its second centenary goal of building a great modern socialist country in all respects. China will become a prosperous, strong, democratic, culturally advanced, harmonious and beautiful country by 2049, the 100

- year anniversary of the founding of the People's Republic of China. **Promoting the great rejuvenation**
- of the Chinese nation through a Chinese path to modernisation.
 The country will leverage a socialist system with Chinese characteristics including a basic socialist economic system with a socialist market economy. Public ownership plays a key role while various other forms of ownership develop together. Labourbased distribution is also prominent and coexists with multiple modes of

distribution.

- Gradually realising common prosperity for the people while leveraging the new development stage, and implementing its concept of innovation, co-ordination, green development, opening up and sharing. The country will accelerate the creation of a new development pattern for the dual circulation strategy with the
- domestic cycle as the key node, and the domestic and international cycles reinforcing each other. The country will promote high-quality development and give full play to the role of human resources as the primary resource. The nation will also promote the development of the national economy that is of higher quality, more efficient, fairer, more sustainable and safer.
- The strategic plan for building a great modern socialist country in all respects is a two-step approach. From 2020 to 2035, the country will achieve socialist modernisation. Then, from 2035 to the middle of the century, China will develop into a prosperous, democratic, civilised, harmonious and beautiful modern socialist power.



Summary of the 20th CPC National Congress report

The Report of the 19th Central Committee is one of the most important reports for the 20th National Congress. The 20th National Congress of the CPC adopted the Report of the 19th Central Committee during the closing session of the Congress, hereinafter referred to as the report.

The full report contains over 32,500 Chinese characters, and delegates

received a 72-pages printed version. Xi Jinping presented the key points of the report during the opening session. The opening session started at 10 am with the report delivery lasting for an hour and 50 minutes. Comparatively, the opening session of the 19th National Congress began at 9 am with the report delivery lasting over three hours.

Keeping in line with the 19th National Congress, the theme of the Congress this year followed the same line of thought, 'Hold high the great banner of socialism with Chinese characteristics and strive in unity to build a modern socialist country in all respects'.

CPC National Congress	Reported by	Date	No. of words	Theme
12th	Hu Yaobang	1 September 1982	31,629	Comprehensively creating a new situation of socialist
13th	Zhao Ziyang	25 October 1987	23,061	Advancing along the road of socialism with Chinese characteristics
14th	Jiang Zemin	12 October 1992	26,280	Accelerating the pace of reform and modernisation, and seizing greater victory in the cause of socialism with Chinese characteristics
15th	Jiang zemin	12 September 1997	28,330	Hold high the great banner of Deng Xiaoping Theory, and pushing the cause of building socialism with Chinese characteristics into the 21st century in a comprehensive manner
16th	Jiang zemin	8 November 2002	28,127	Building a modern socialist country in all respects, and creating a new situation for the cause of socialism with Chinese characteristics
17th	Hu Jintao	15 October 2007	28,002	Holding high the great banner of socialism with Chinese characteristics, and struggling for a new victory in building a moderately prosperous society
18th	Hu Jintao	8 November 2012	29,106	Steadfastly advancing along the road of socialism with Chinese characteristics, and striving to build a moderately prosperous society in all aspects
19th	Xi Jinping	18 October 2017	32,501	Successfully building a moderately prosperous society in an all-round way, and making all-out efforts to build a great modern socialist country
20 th	Xi Jinping	16 October 2022	32,500	Hold high the great banner of socialism with Chinese characteristics and strive in unity to build a modern socialist country in all respects

The report includes the following 15 chapters:

- 1) The work of the past five years and the great changes in the first decade of the new era
- 2) A new frontier in adapting Marxism to the Chinese context and the needs of the times
- 3) The new journey of the new era: Missions and tasks of the communist party of China
- 4) Accelerating the creation of a new development pattern and pursuing high-quality development
- 5) Invigorating China through science and education and developing a strong workforce for the modernisation drive

- 6) Advancing whole-process people's democracy and ensuring that the people run the country
- 7) Exercising law-based governance on all fronts and advancing the rule of law in China
- 8) Building cultural confidence and strength and securing new successes in developing socialist culture
- 9) Improving the people's wellbeing and raising quality of life
- 10) Pursuing green development and promoting harmony between humanity and nature
- 11) Modernising China's national security system and capacity and safeguarding national security and social stability

- 12) Achieving the centenary goal of the people's liberation army and further modernising national defense and the military
- 13) Upholding and improving the policy of one country, two systems and promoting national reunification
- 14) Promoting world peace and development and building a human community with a shared future
- 15) Exercising full and rigorous selfgovernance and advancing the great new project of party building in the new era

Key themes of each chapter

1)	Great changes in the new era	9)	People's wellbeing and quality of life	
2)	Adapting Marxism to the Chinese context		Green development, harmony between humanity and nature	
3)	The new journey of the new era	11)	National security system and security and social stability	
4)	New development pattern and high-quality development	12)	Modernising national defense and the military	
5)	Science, education and workforce	13)	One country, two systems and reunification	
6)	Whole-process people's democracy	14)	World peace and a shared future	
7)	Law-based governance on rule of law		Self-governance and party building	

socialist culture

8)

Cultural confidence and

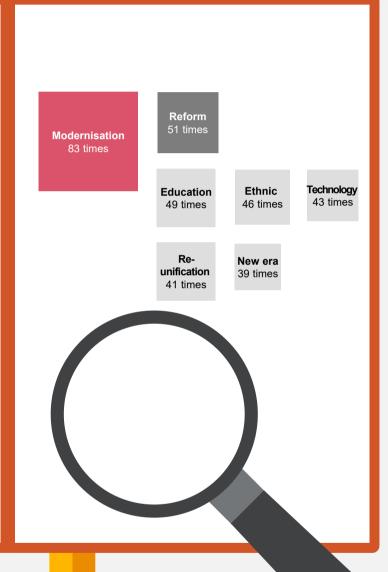
Ten most frequently used words in the Report

In the report, there are a number of key terms that appeared frequently; 'development' appeared the most,

Development 237 times

The other words make up the top ten most frequently used words in the report include

People 177 times Security 91 times



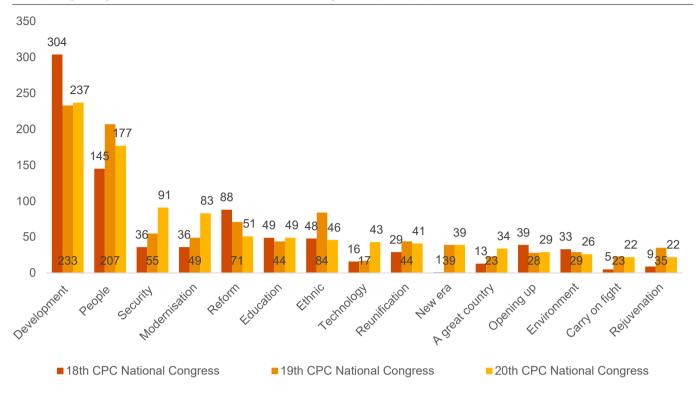
In comparison, the key terms most frequently used in the reports of the 18th and 19th National Congress were quite different. While 'development' and 'people' were the two most frequently used terms in the 18th and 19th National Congress, the rankings of

many of the other high-frequency words have varied since. More specifically, 'reform' was third in terms of the of the 18th report and fourth in terms of the 19th report, but this year, it dropped to the fifth position with 'security' (91) and 'modernisation' overtaking it.

Frequency of keywords in the last three CPC National Congress Reports

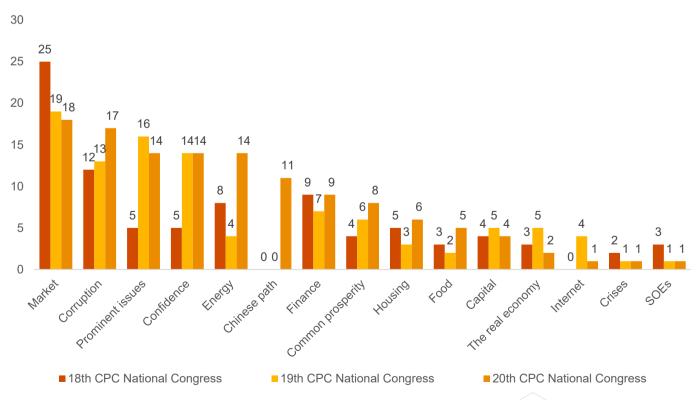
Keywords	18th/2012	19th/2017	20th/2022	Change in the last decade
Development	304	233	237	-67
People	145	207	177	32
Security	36	55	91	55
Modernisation	36	49	83	47
Reform	88	71	51	-37
Education	49	44	49	0
Ethnic	48	84	46	-2
Technology	16	17	43	27
Reunification	29	44	41	12
New era	1	39	39	38
A great country	13	23	34	21
Opening up	39	28	29	-10
Environment	33	29	26	-7
Fight	5	23	22	17
Rejuvenation	9	35	22	13

Frequency of keywords in the last three CPC National Congress Reports (1/2)



Source: zgtrend

Frequency of keywords in the last three CPC National Congress Reports (2/2)





1) Development is still the top priority and GDP per capita will reach the level of moderately developed countries by 2035.

Ahead of the Congress, there were some concerns that China might deprioritise economic growth. However, these concerns were unfounded as the development goal for 2035 was reinforced within the two-step strategic plan of building a great modern socialist country in all respects. The first step focuses on achieving socialist modernisation by 2035. One of the key measurements of this modernisation is the extent to

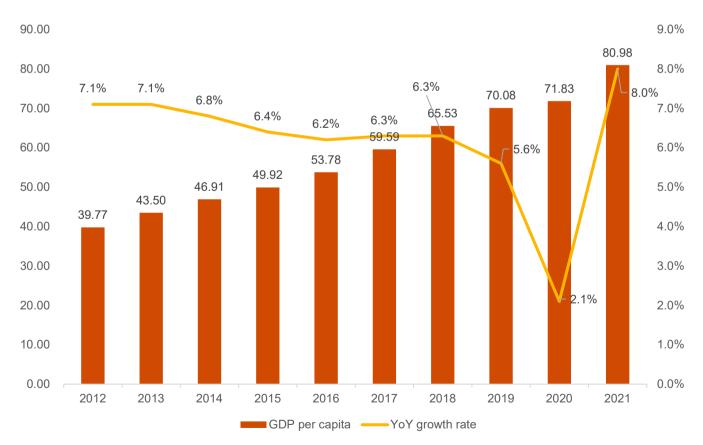
which China transforms into a developed economy. During this transformation, GDP per capita is expected to reach the level of moderately developed countries.

The second part of the strategy is to 'build China into a great modern socialist country that is prosperous, strong, democratic, culturally advanced, harmonious, and beautiful from 2035 through the middle of this century'.

Earlier in 2020, during the four-day fifth plenary session, the 19th Central Committee formulated the

14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035. According to the plan, GDP per capita is expected to double from US\$10,262 in 2019 to at least US\$25,000 US dollars in 2035 (China Economic Quarterly Q3, 2020). China's per capita GDP exceeded 80,000 yuan in 2021, which increased from US\$6,300 to over US\$12,500 in 10 years.

GDP per capita in China (Unit: thousands)

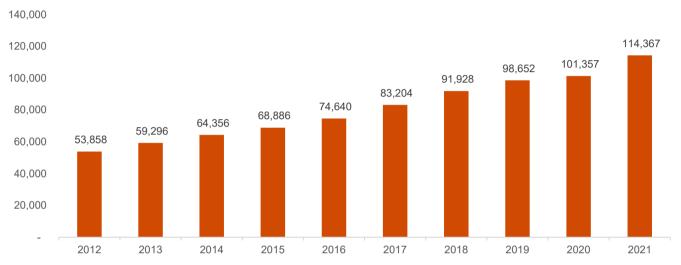


Achieving socialist modernisation also implies that China will become an innovation-driven economy in 2035 and achieve breakthroughs in core technologies, greatly improving national strengths. China will develop its soft power in the areas of culture, education, talent and sports.

Since the 18th National Congress in 2012, when Xi came into power, China's economic growth reached new heights. From 2013 to 2021, China's GDP grew at an average annual rate of 6.6%, higher than the global average of 2.6% and the 3.7% average for developing economies in the same period. In 2021, at constant prices, it is 1.8 times that of

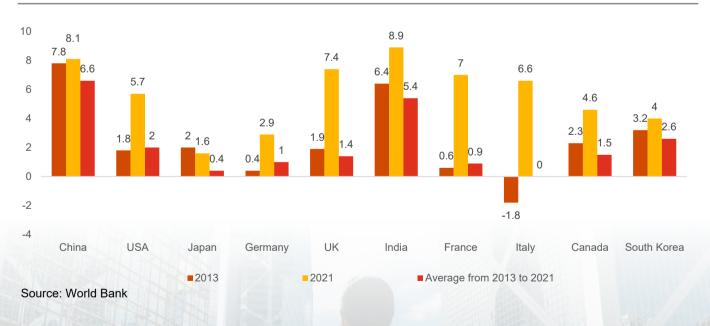
2012. In 2014, 2016, 2017, 2018 and 2020, the total GDP surpassed the 60, 70, 80, 90 and 100 trillion yuan marks successively, from 54tn yuan in 2012. In 2021, GDP exceeded 110tn yuan, reaching 114.4tn yuan.

China GDP from 2012 to 2021 (Unit: billions)



Source: National Bureau of Statistics, Wind

Economic growth rate of the top 10 economies (Unit: %)



By the end of 2021, China's GDP reached 17.7 tn US dollars, more than 18% of the global GDP and 77% of the economic size of the US (23tn US dollars in 2021). Despite the COVID-19

crisis, China's GDP per capita grew to 12,551 US dollars (80,976 yuan), nearly reaching the level of a high-income economy.

China and the US: share of global GDP (Unit: %)



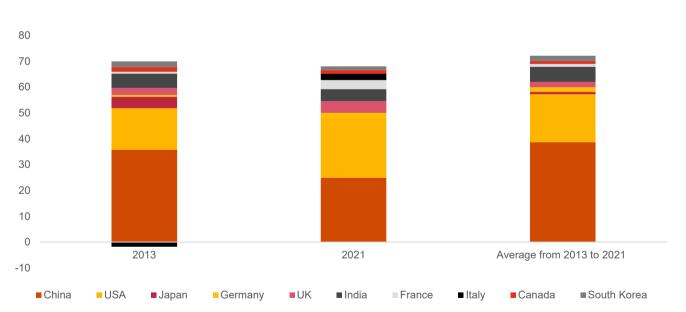
Source: National Bureau of Statistics, Wind

China's contribution to the global economy is rising steadily. Based on the average annual exchange rate, China's economy accounted for 18.5% of the world's economy in 2021, up 7.2

percentage points from 2012, ranking second. From 2013 to 2021, China's average contribution to the world's economic growth reached 38.6 percent, higher than the combined contribution of

the G7 countries. This made the country the driving force for world economic growth, according to the World Bank.

Contribution rate to the global economic growth rate by key countries (Unit: %)



Source: World Bank

Finally, as the report emphasised, building an all-rounded modern socialist country is a difficult task. To facilitate

this, China will continue to focus on economic development, deepening reform and opening up.

2) China will continue to build a high-standard socialist market economy, create a new development pattern and pursue high-quality development.

The report stated 'China must, first and foremost, pursue high-quality development. Development is the top priority in governing and rejuvenating China. Without solid material and technological foundations, we cannot build a great modern socialist country in all respects'.

In order to create a new development pattern and pursue high-quality development, the report addressed four aspects, including:

- Building a high-standard socialist market economy
- · Modernising the industrial system
- Advancing rural revitalisation across the board
- Promoting coordinated regional development
- Promoting high-standard opening up

By building a high-standard socialist market economy, state-owned enterprises, as well as private and foreign-owned enterprises will continue to thrive in China.

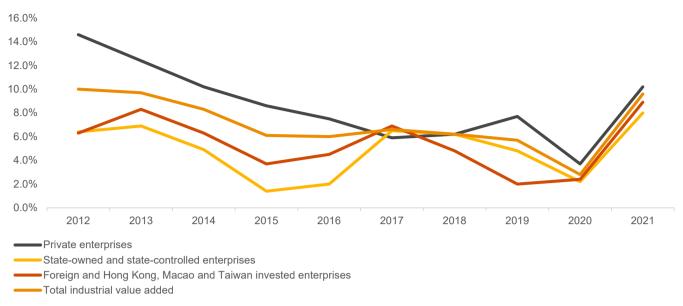
It is almost a national consensus that China's economic miracle and accomplishment in the past four decades was mainly a result of pursuing a market economy, as well as reforming the pure socialist economy (planned economy) to open up to the rest of world, especially developed economies.

Since the 18th National Congress, China formulated and implemented a series of policies to ensure the common development of local economies under diverse forms of ownership. As the business environment continued to improve, the reform of state-owned enterprises saw remarkable results, the private sector was revitalised, and foreign investment and foreign trade continued to grow. Policies to support, mostly privately-owned, individual, small and micro businesses have been effective, enabling their rapid growth.

In key sectors and industries, those that affect the national economy, people's livelihood and public services, the state-owned businesses remain leaders. For instance, in 2021, total profits of state-owned industrial enterprises above a designated size reached 2.3tn yuan, a 50.0% increase from 2012 with an average annual growth of 4.6%. By the end of 2021, the net assets of state-owned industrial enterprises above a designated size reached 22.2tn yuan, a 84.0% increase from 2012 with an average annual growth of 7.0%. Since 2012, state-owned enterprises exited some industries and as a result, the total assets of state-owned enterprises from these industries has reduced.





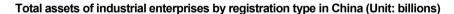


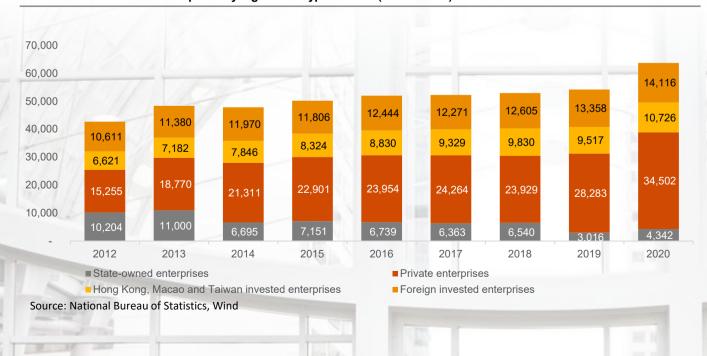
Source: National Bureau of Statistics

At the same time, the private sector has grown stronger with significantly improved profitability and employability. Through a series of policies, including tax and fee cuts, individual, small and micro businesses received targeted support. The private economy has grown exponentially, increased profitability and created more jobs. Within which, small and medium-sized enterprises have grown rapidly.

The importance of the private economy in China can't be denied, with the sector associated with the number of '56789', as they contribute more than 50% of tax revenue, 60% of GDP, 70% of technological innovation, 80% of urban employment and make up 90% of enterprises in the country.

More specifically, from 2013 to 2021, the aggregate value of private industrial enterprises above a designated size grew at an average annual rate of 8.0%. In 2021, the total profits of private industrial enterprises above a designated size reached 2.9tn yuan, an increase of 44.4% from 2012, with an average annual growth of 4.2%. In the same year, 35.82mn people were employed by private industrial enterprises above a designated size, 14.7% more than 2012, accounting for 48.1% of those employed in industries above a designated size.





In 2021, the total profits of small and medium-sized industrial enterprises above a designated size reached 4.7tn yuan, a 26.7% increase from 2012 with an average annual growth of 2.7%. The total profit of small and medium-sized industrial enterprises and large private industrial enterprises above a designated size added up to 7.6tn yuan, 3.3 times more than the total profits of

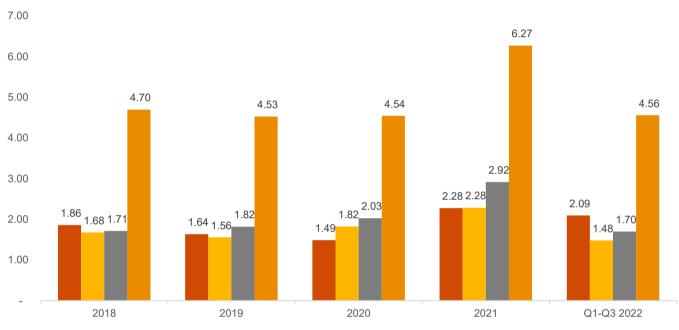
state-owned industrial enterprises. This figure does not include small and medium-sized private industrial enterprises below a designated size, with an annual income of less than 20mn yuan from their primary business.

In the first half 2022, the import and export by private enterprises reached 9.82tn yuan, accounting for 49.6% of

total foreign trade value, 1.9 percentage points higher YoY.

As such, the report stated, 'we will provide an enabling environment for private enterprises, protect their property rights and the rights and interests of entrepreneurs in accordance with the law, and facilitate the growth of the private sector'.

Total profit of Chinese industrial enterprises by registration type (Unit: tn, RMB)



- State-controlled enterprises
- Foreign and Hong Kong, Macao and Taiwan invested enterprises
- Private companies
- Joint-stock enterprises

Over the years, foreign investment and trade continued to grow, while market integration deepened. In 2021, the total profits of foreign-invested enterprises (FIEs) in the industrial sector, including Hong Kong, Macao and Taiwan above a designated size reached 2.3tn yuan, a 63.6% increase from 2012 with an average annual growth of 5.6%. In 2021, the assets of these enterprises totalled 28.8tn yuan, up 67.2% from 2012, while operating revenue reached 28.8tn yuan, a 29.8% increase from 2012.

In addition to the industrial sector, FIEs made a significant contribution to China's economic success. As such, it comes with no surprise that China will continue to welcome foreign investors from overall the world. In the section on 'promoting high-standard opening up', the report stated, 'We will make appropriate reductions to the negative list for foreign investment, protect the rights and interests of foreign investors in

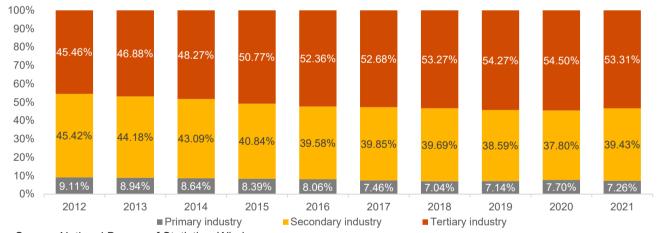
accordance with the law, and foster a world-class business environment that is market-oriented, law-based and internationalised'.

In terms of fostering a new pattern of development, some industries are now innovation-driven, while consumption plays a fundamental role in economic growth.

China is still in the middle of building a modern economic system. The ongoing refinement of the industrial structure lays a solid foundation for a new development pattern. The primary industry, critical for national food security, is the foundation of the national economy. While the secondary industry has gradually developed towards an innovationdriven model, the shift towards the middle- and high-end of the industrial chain is long. Transforming and upgrading key areas of the tertiary industry are still on-going which give strong support to the sustained and healthy development of the national economy.

The composition of the three industries in China's economy was adjusted to 7.3:39.4:53.3 in 2021 from 9.1:45.4:45.5 in 2012. In the future, it is expected that service sector will account for an even larger portion of the total GDP, at the same time, China will continue to regard the real economy (secondary industry) as a vital part. China's economic composition of the three industries will be more similar to that of the developed countries such as Germany, but quite different from the US model.

Annual GDP composition





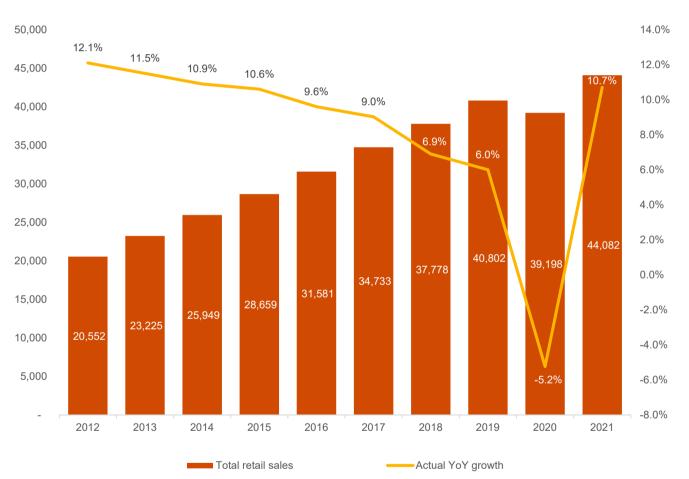
Over the past years, China has built up the whole industrial chain of manufacturing industry. The independent control over the industrial chain and supply chain has been improved, but China still faces many challenges as the international geopolitical landscape gets more intense. In today's world complicated by the current economic situation, no country can develop its economy completely independently.

Furthermore, consumption became the main driving force for economic

growth, and the construction of a new development pattern continued to show results. Since the 18th CPC National Congress, China has thoroughly implemented the strategy of expanding domestic demand, introduced policies and measures to stimulate consumer demand, and made historic achievements in the development of the consumer market. The advantages that came from the sheer size of China's market continued to play out, with consumer market sales steadily expanding.

More specifically, the total retail sales of consumer goods exceeded 30 tn yuan in 2016 and 40 tn yuan in 2019, and reached 44 tn yuan in 2021, and 2.1 times that of 2012. However, as we are still tackling the repercussions of COVID-19 outbreak, consumer confidence has hit a historic low and consumption has remained comparatively weak since 2020.

Annual total retail sales in China (Unit: RMB billion)



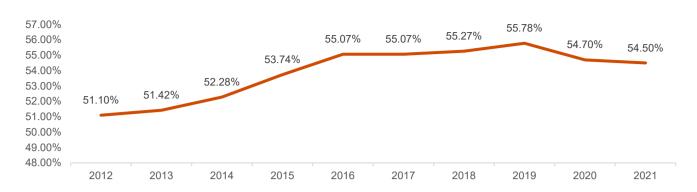
Source: National Bureau of Statistics, Wind

Consumption gradually plays a fundamental role in the country's economic growth. In 2021, the final consumption rate was 54.5%, up 3.4% from 2012. Among the final consumption expenditure figures, personal or household consumption expenditures maintained relatively fast

growth. From 2013 to 2021, household consumption expenditure grew at an average annual rate of more than 9%, accounting for 70% in final consumption expenditure. The annual contribution of final consumption expenditure to economic growth exceeded 50% during this period. In 2021, final consumption

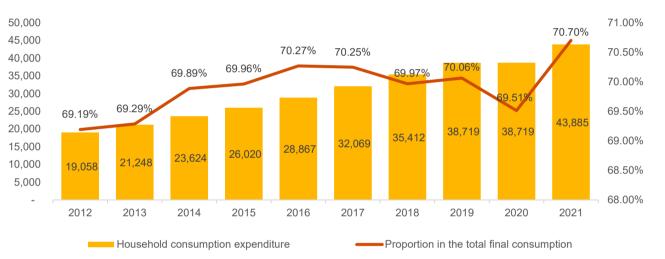
expenditure contributed 65.4% to economic growth, 51.7 percentage points higher than gross capital formation, and was the biggest driver of economic growth. This illustrates one of the key features of a new pattern of development.

Annual final consumption rate in China



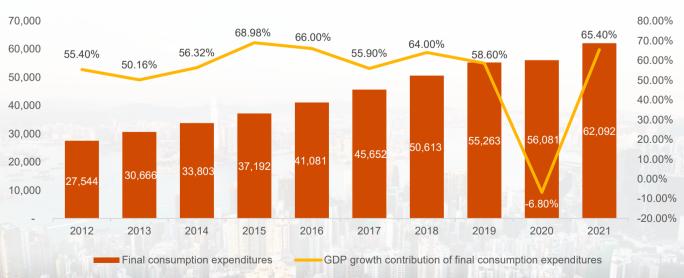
Source: National Bureau of Statistics, Wind

Annual household consumption expenditure in China (Unit: RMB billion)



Source: National Bureau of Statistics, Wind

Annual final consumption expenditures and its GDP growth contribution in China (Unit: RMB billion)



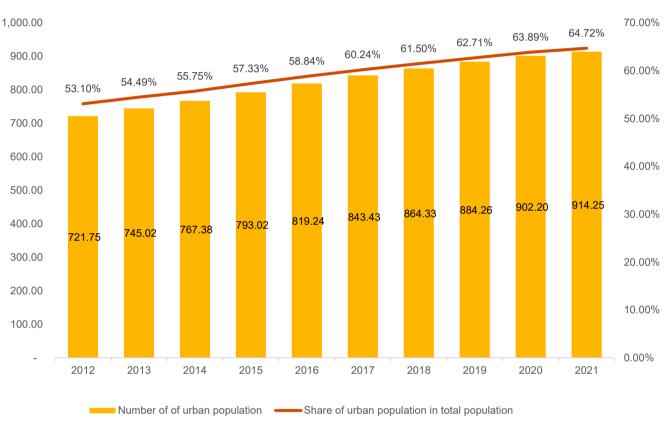
In a bid to pursue high-quality development, China has made dramatic progress in areas such as urbanisation, high-tech manufacturing, and transportation.

High-quality development comes from various sectors and areas, and rapid urbanisation is one of the many. At the end of 2021, China's

urbanisation rate of permanent residents reached 64.72%, 11.62% higher than that at the end of 2012, with an average annual increase of 1.29% since 2012. Each one percent increase of urbanisation rate means an immigration of 14 million people from rural areas to cities in the country. Urbanisation rate in

developed countries is about 80% and that means China still has more than 15% to catch up with international level, which would generate enormous business opportunities.

Annual number of urban population in China (Unit: per million)



Source: National Bureau of Statistics, Wind

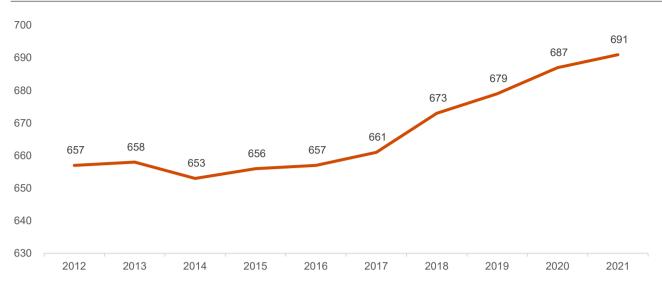
Furthermore, triggered by rapid urbanisation, the number of cities continues to increase. In 2021, the total number of cities reached 691, or 34 more than 2012, according to the National Bureau of Statistics. Among them, 297 are at or above prefecture level (ranked below a province but above a county) and 394 at county level. Based on the size of registered population at the end of 2020, there were

- 96 cities with populations of 1 million to 2 million,
- 46 cities with populations of 2 million to 4 million and,
- 22 cities with populations of more than 4 million.

These categories of cities were 14, 15 and 8 more than those at the end of 2012, respectively. There were 47 cities with a population of less than 500,000 and 86 with a population of 500,000 to 1 million, with both

numbers decreasing by 7 and 22 respectively. Consequently, people are moving out from rural areas and small cities to bigger ones. The integrated development of city cluster has been improved. Central cities, such as municipalities directly under the central government, provincial capitals, major cities, have continuously enhanced their radiation functions. This trend might solidify in the coming years, as urbanisation continues to move forward.

Annual change in the number of cities in China



Source: National Bureau of Statistics, Wind

Special attention has been given to the high-quality development of the real economy, including equipment manufacturing and high-tech manufacturing. In 2021, the added value of the manufacturing industry reached 31.4 tn yuan, an actual increase of 74.3% over 2012 with an average annual growth rate of 6.4% from 2013 to 2021. At the same time, the added value of equipment manufacturing and high-tech manufacturing grew at an average annual rate of 9.2% and 11.6%, respectively, 2.4% and 4.8% higher than that of manufacturing industries.

Industry classification

Of which, the average annual growth rate of

- aerospace and spacecraft, and equipment manufacturing was 13.7%,
- electronic and communication equipment manufacturing was 13.6%,
- pharmaceutical manufacturing was 11.7%, and
- medical instruments and equipment and instrumentation manufacturing was 10.9%.

In 2021, the added value of equipment manufacturing and high-tech manufacturing accounted for 32.4% and 15.1% of the added value of industries above designated size, up 4.2 and 5.7 percentage points from 2012, respectively. Lastly, China will continue the implementation of the national strategy of 'becoming a strong manufacturer', and push industrial development toward the mediumhigh end.

Average YoY (2013-2021)

11.60%

Average annual growth of added values by industry classification

Manufacturing 6.40%

Equipment manufacturing above the designated size 9.20%

Services 7.40%

Source: National Bureau of Statistics, Wind

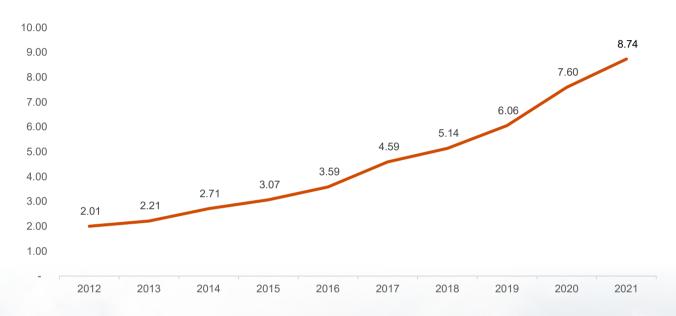
High-tech manufacturing above the designated size

Outstanding achievements in the development of the transportation sector pave the way for high quality development. The comprehensive transport network has been gradually improved with the building of the world's largest high-speed rail network and expressway network. From 2012 to the end of 2021, the length of railway

increased from 98,000 km to 151,000 km. The length of high-speed railways in operation has increased from less than 10,000 km to 40,000 km. The length of highways increased from 4.24 million km to 5.28 mn km, of which the length of expressways increased from 96,000 km to 169,000 km. China also accelerated the building

of modern and efficient urban rail transit in recent years. By the end of 2021, there were 8,736 kilometres of urban rail transit lines in operation across 51 cities, while city dwellers will have access to subway systems.

Operating mileage of urban rail transit in China (Unit: per 1,000 km)



3) China will prioritise science and technology, education, talent, and green development.

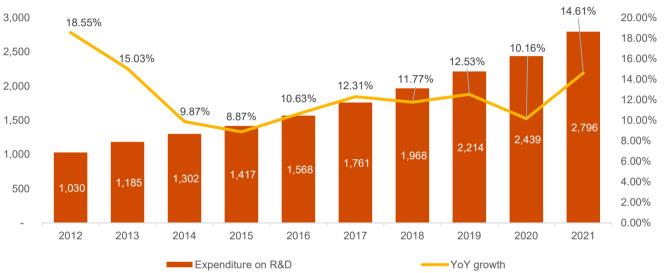
According to the report, 'education, science and technology, and human resources are the foundational and strategic pillars for building a modern socialist country in all respects'. It also emphasised that the country 'must regard science and technology as its primary productive force, talent as its primary resource, and innovation as its primary driver of growth'.

Science and technology are one of the vital strategic pillars for China to transform its economy into an innovation-driven one.

Investment in innovation, as well as science and technology has increased in recent years. China's total experimental research and development (R&D) expenditure surpassed Japan's in 2013, making it the second largest R&D investment country in the world. In 2021, the expenditure on R&D was 2,795.6 bn yuan, 2.7 times that of 2012, with an

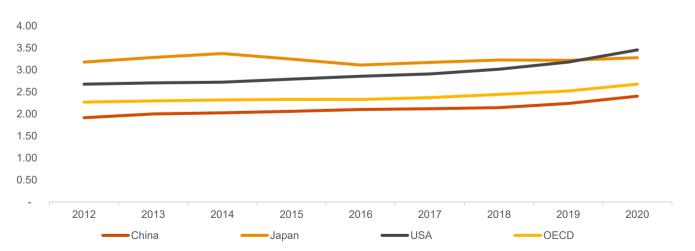
average annual growth of 11.7%. The ratio of R&D expenditure to GDP was 2.44%, 0.53 percentage points higher than in 2012, and close to the pre-pandemic average of 2.47% in OECD countries.

Annual expenditure on R&D in China (Unit: RMB billion)



Source: National Bureau of Statistics, Wind

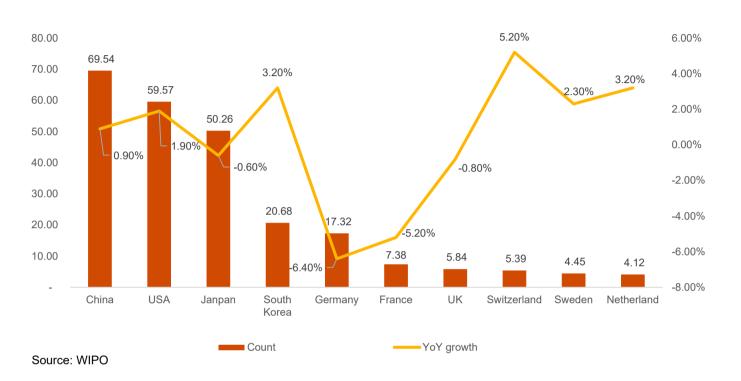
Annual proportion of gross domestic spending on R&D in GDP by OECD and OECD countries (Unit: %)



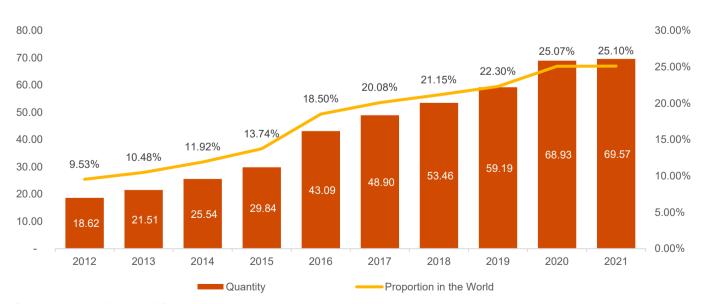
Furthermore, the outputs of innovation are evidently seen, as China's strategic prowess in science and technology is growing faster. For example, the registration and approval of patent applications have increased significantly. In 2021, the

number of patent applications granted at home and abroad reached 4.6 million, an increase of 2.7 times over 2012. Chinese applicants submitted 69,500 international patent applications through PCT, ranking first in the world for three consecutive years. Besides, the World Intellectual Property Organisation (WIPO) report shows that China's ranking in the Global Innovation Index jumped from 34th in 2012 to 11th in 2022.

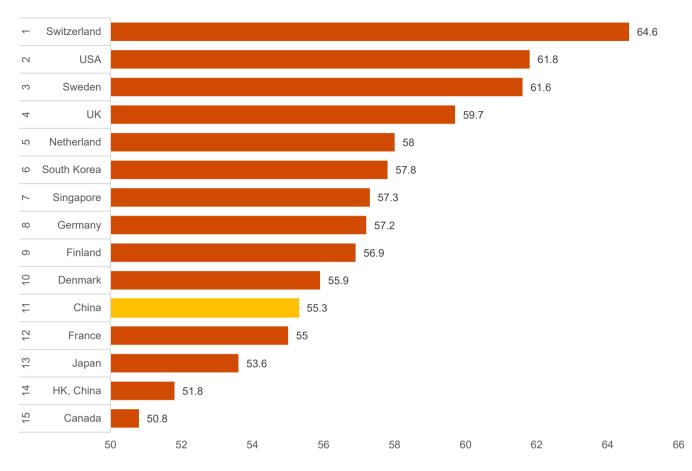
2021 PCT top 10 countries (Unit: per thousand)



Annual PCT patent applications from China (Unit: per thousand)



The 2022 Global Innovation Index ranking by score



Source: World Intellectual Property Organisation

In terms of human resources in the science and education field, China is now home to the largest number of R&D personnel in the world. In 2021, the total number of full-time R&D personnel in China amounted to 5.62 million, up 73.1% from 2012, ranking first in the world for nine consecutive years.

China's quality of academic paper outputs grew dramatically. A total of 97,000 Chinese scientific and technological papers made their way into the collection of three major international retrieval tools (namely SCI, Science Citation Index, EI, Engineering Index and CPCI-S, Conference Proceedings Citation Index-Science Biostatistics), 2.5 times of that in 2012.

Besides its strength in academic research, China's higher education also reached the world's mediumhigh level, as university enrollment rate has increased significantly over the years.

The report also emphasised the country's plan to 'carry out coordinated industrial restructuring, pollution control, ecological conservation, and climate response'. China will also 'cut carbon emissions, expand green and low-carbon development'.

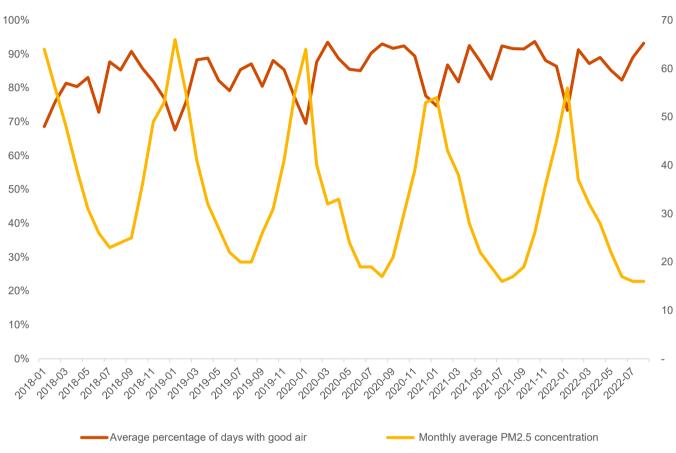


The green development contains four major aspects, such as transition to a model of green development, pollution prevention and control, sustainability in the ecosystems, and peak carbon emissions and carbon neutrality.

China has continuously improved the quality of its ecological environment, gradually advancing along the path of ecological development. More specifically, remarkable progress has been achieved to protect air, waters and soil. For instance, in 2021,

87.5% of the days in cities had good air quality on average, up 6.3% from 2015. The average annual concentration of PM2.5 was 30 micrograms per cubic metre, down 34.8%.

Monthly air quality in 388 cities of China



Source: National Bureau of Statistics, Wind

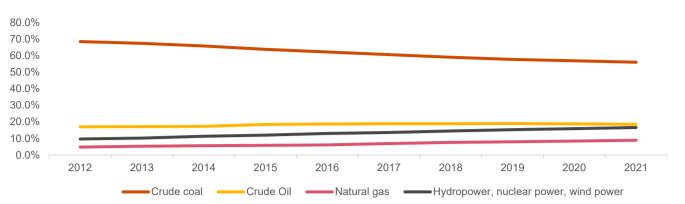
In order to achieve carbon peaking in 2030 and carbon neutrality by 2060, energy production and consumption will need to be transformed to make them clean, low-carbon, safe and efficient. In 2021, clean energy such as natural gas, water, nuclear and solar power accounted for 26.4% of China's total energy production, 11.1 percentage points higher than that in 2012.

China now ranks first in the world in terms of the number of installed hydropower, wind power, solar power and nuclear power plants, and has become a global leader in nonfossil energy. In 2021, China's primary energy production totalled 4.33 billion tons of standard coal, an increase of 23.2% over 2012 with an average annual growth of 2.3%. The output of raw coal was 4.13 bn tons,

an increase of 4.6% over 2012.

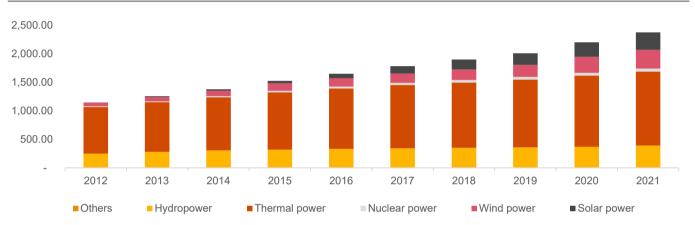
On the other hand, in 2021, natural gas output was 207.6 bn cubic metres, up 87.7%, while crude oil output stood steadily at 19.88 mn tons. China's installed power generation capacity reached 2,376.92 mn kW, up 1.1 times from 2012.

Share of major energy sources in total energy consumption in China



Source: National Bureau of Statistics, Wind

Annual installed capacity of power generation in China (Unit: million kilowatts)



Source: National Bureau of Statistics, Wind

Solar PV installed capacity in the world (Unit: billion watt)

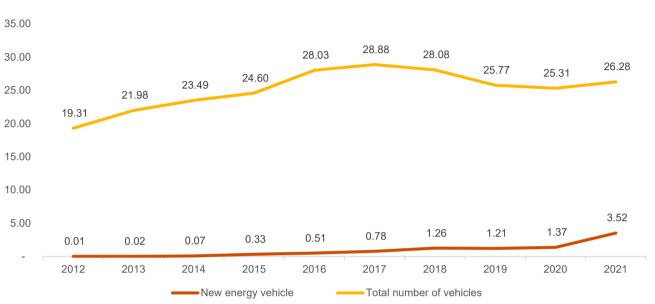


Moreover, a green lifestyle is taking shape in China, and low-carbon travel is becoming more convenient. The green public transport service system has seen continuous improvement. In 2021, the operational length of urban rail transit was about 8,736 km, an increase

of about 3.2 times compared with the end of 2012. The proportion of new energy city buses exceeded 66% and the number of new energy vehicles reached 7.84 mn. The sales of new energy vehicles reached 3.52 mn in 2021, making China the world's largest

market (both production and sales) for new energy vehicles. In 2022, new energy vehicles accounted for one-fifth of total car sales in China, and the annual sales of new energy vehicles is expected to increase by 5.5 mn units this year.

Annual auto sales in China (Unit: per million)



Source: National Bureau of Statistics, Wind

To conclude, as an important meeting held every five years, the economic impacts of the 20th National Congress of the Communist Party of China are bound to be significant and far-reaching. The report outlines the strategic direction of and addresses the vital issues to transforming China into a developed economy by 2035. It is indeed an arduous long journey. China will only be able to achieve its goals, by first overcoming many obstacles and challenges ahead in key areas such as,

- · unbalanced development,
- bottlenecks in promoting high-quality development,
- sustainability for innovation of science and technology,
- reliability and security of food, energy, industrial and supply chains,
- · income distribution gap,
- ecological and environmental protection.

Other difficulties include employment, education, medical services, childcare, elderly care, and housing. However, it's been only slightly more than 40 years since China has pursued market economy, and integrate itself with the global economy. The extraordinary achievements China has made in the past four decades have underscored tremendous progress for its 1.4 billion people. On the foundation of its past success there is no reason not to believe that China will do better in the future.



Contacts



Elton Yeung Vice Chairman, PwC China 86 (10) 6533 8008 elton.yeung@cn.pwc.com



Thomas Leung
Managing Partner – Markets,
PwC China
86 (10) 6533 2838
thomas.w.leung@cn.pwc.com



Elton Huang
Managing Partner – Central
Markets, PwC China
86 (21) 2323 3029
elton.huang@cn.pwc.com



Xing Zhou
Managing Partner – North
Markets, PwC China
86 (10) 6533 7986
xing.zhou@cn.pwc.com



James Chang
Managing Partner – South
Markets, PwC China
86 (755) 8261 8882
james.chang@cn.pwc.com



G. Bin Zhao
Senior Economist, PwC China
86 (21) 2323 3681
bin.gb.zhao@cn.pwc.com



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