

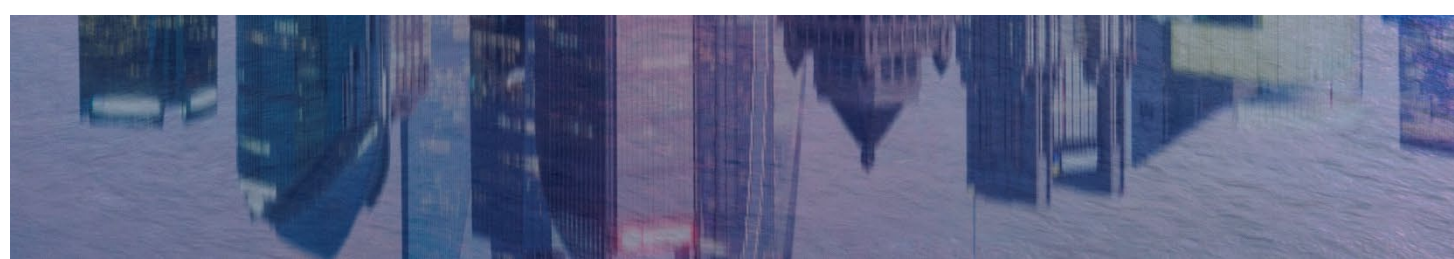


China Economic Quarterly Q3 2023

**China's GDP increased by 4.9% in Q3 2023,
and 5.2% in the first three quarters.**

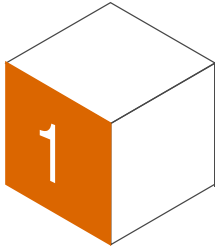
December 2023

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Major economic indicators

During the first three quarters of 2023, China's GDP grew by 5.2% year-on-year to 91.3 trillion yuan. In the third quarter, the GDP increased by 4.9% YoY and 1.3% quarterly. Thanks to this stronger-than-expected growth performance and recent policy announcements, the International Monetary Fund (IMF) has recently raised its forecast for China's GDP growth in 2023 from 5% to 5.4% and for 2024 from 4.2% to 4.6%.

Although China's GDP grew at a higher rate in Q2 2023 (6.3%) than in Q3 (4.9%), China's economy recovery rate slightly improved on a quarterly basis in Q3 (1.3% vs 0.5%) due to high comparative bases from the previous year. The GDP YoY growth rate of Q2 2022 was indeed only 0.4% while the third quarter YoY growth rate had recovered to 3.9%.

Policies launched during the first three quarters of 2023 have effectively led to a continued recovery of the Chinese economy by stimulating domestic demand and boosting consumer confidence. However, there are still challenges to address, including a complex external environment, a sluggish real estate market, inadequate domestic demand, and relatively weak investments that call for continued attention. Going forward, the focus should be on expanding domestic demand, stabilising the property market, and stimulating business vitality.

Looking at GDP growth in the first three quarters, the Chinese government can

meet its 5% economic growth target as long as Q4 growth reaches 4.4% or higher. While it is quite likely that this year's target will be achieved, last year's meagre 3% GDP growth figure has durably marred market sentiment despite recent improvements.

As market sentiment regarding the state of the economy has not yet been fully restored, macroeconomic data alone may not currently fully reflect the difficulties facing the Chinese economy. It may be for these reasons, alongside a will to ensure that China's economy fully recovers by 2024, that the central government has increased the pace of stimulus policy implementation entering the fourth quarter.

For instance, about three trillion yuan of government bonds will be issued (by the central government and spent by local governments) in the fourth quarter. Although not all of these bonds will be utilised in the fourth quarter, this measure will significantly improve the financial constraints faced by local governments, enabling them to invest more during that period.

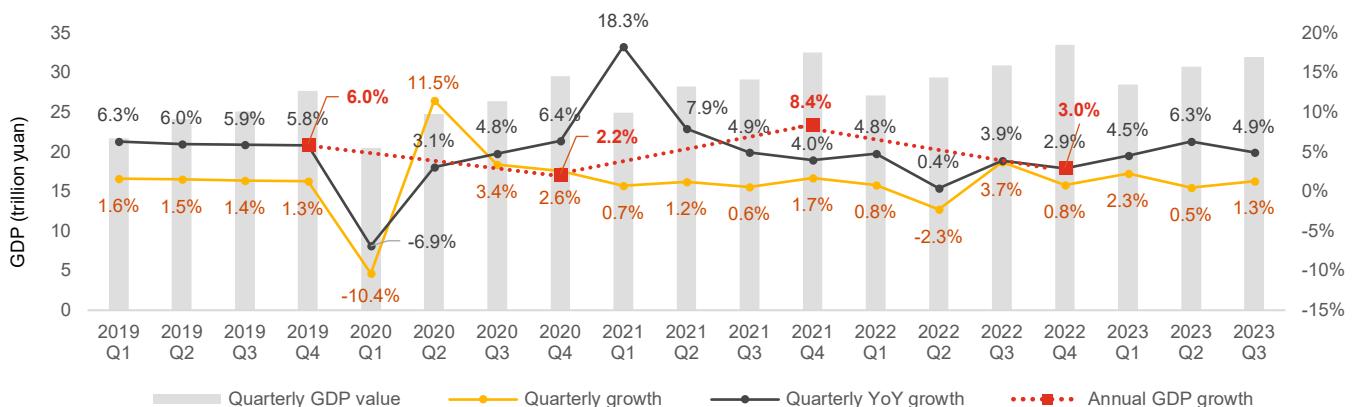
In Q3 2023, the employment situation also improved. The average surveyed urban unemployment rate in the first three quarters was 5.3%, down by 0.3 percentage points from the same period last year. In September, the surveyed urban unemployment rate was 5.0%, showing a slight improvement over the previous months. However, the surveyed unemployment rate for individuals aged 16 to 24 was not released.

According to data released by the Ministry of Human Resources and Social Security, 10.22 million new urban jobs were created in the first three quarters of 2023. By the end of September, 32.97 million people had been lifted out of poverty.

In 2023, after a slew of challenges faced in the past three years, China's economy is struggling to move forward. As noted above, business and household expectations for the economy still remain subdued despite policy-driven improvements. Market sentiment may improve if the macro data continues on its upwards trajectory in Q4. However, the external environment presents ongoing challenges. Conflicts in Ukraine and the Middle East as well as persisting inflationary trends in developed economies create a grim international outlook that will inevitably impact the Chinese economy if the situation persists through 2024.

GDP growth in China, the world's No. 2 economy, will likely pick up in 2024 as private sector investment increases from this year's low level and government measures to support the economy show results. If China's GDP growth is maintained at around 5.5% in 2024, social problems such as youth employment rate will be greatly alleviated.

Quarterly GDP values and quarterly and annual GDP growth rate



Source of data: Unless otherwise stated, economic data are from the National Bureau of Statistics, Wind and financial data from the People's Bank of China.

During the first three quarters, the outputs of the primary, secondary, and tertiary industries in China were 5.65, 35.37, and 50.30 trillion yuan, respectively. This represents YoY growth rates of 4.0%, 4.4%, and 6.0% during this period, and 4.2%, 4.6%, and 5.2%, respectively in Q3.

In Q3, the added value of the primary, secondary, and tertiary industries accounted for 8.11%, 38.43%, and 53.46% of the GDP, respectively, contributing to 7.7%, 35.6%, and 56.7% of quarterly economic growth.

In the first three quarters, consumption (final consumption expenditure) contributed 83.2% to economic growth,

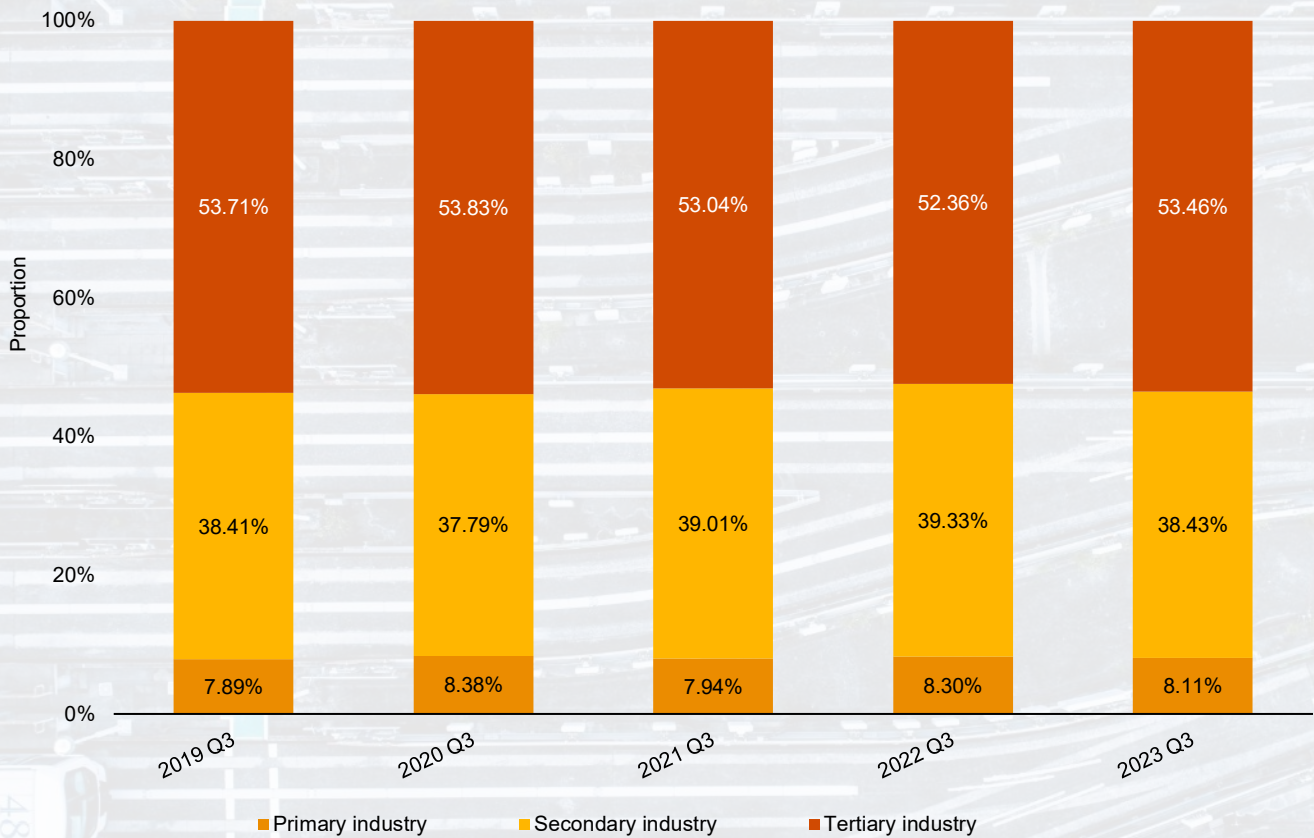
driving GDP growth by 4.4 percentage points. In Q3, the contribution of consumption to economic growth reached 94.8%, driving GDP growth by 4.6 percentage points.

Meanwhile as consumption continued to recover, exports declined, and investment growth slowed down. Net exports of goods and services had a negative contribution of -13.0% to economic growth, leading to a decline of 0.7 percentage points in GDP in the first three quarters. Net exports of goods and services contributed negatively by -17.1% to Q3 growth, shaving 0.8 percentage points off GDP.

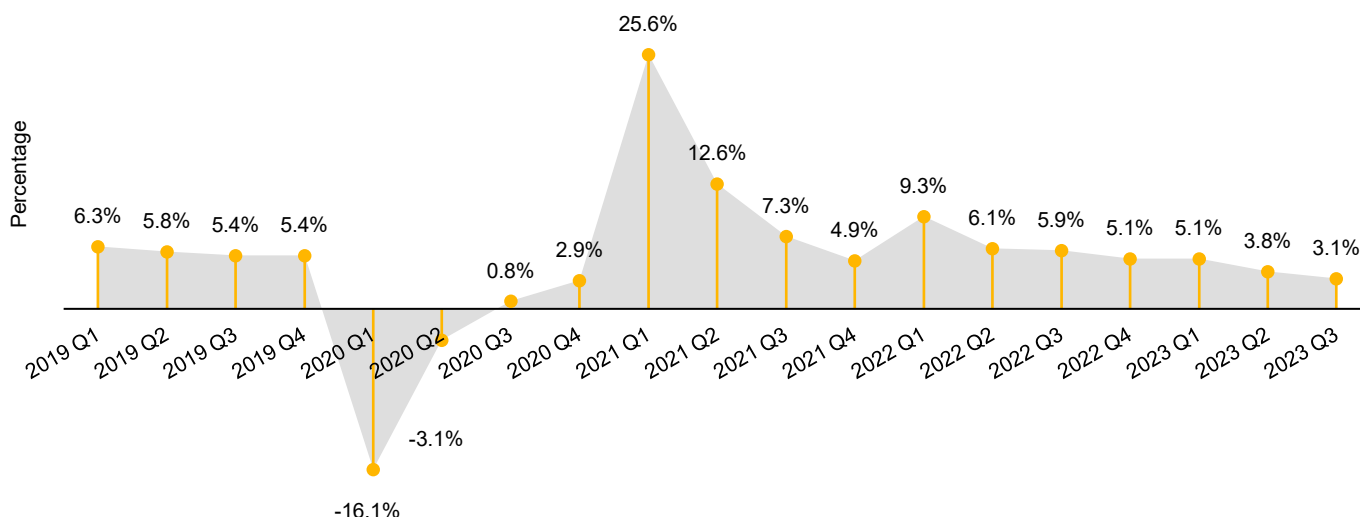
Investment (total capital formation) contributed 29.8% to economic growth, boosting GDP by 1.6 percentage points. In the third quarter, investment contributed 22.3% to economic growth, boosting GDP by 1.1 percentage points.

The current trend is expected to persist in Q4, and potentially in the Q1 of 2024, given the ongoing uncertainty surrounding global growth.

GDP composition



Fixed asset investment



Total fixed asset investment reached 37.5 trillion yuan in the first three quarters, representing an increase of 3.1% YoY. On a month-over-month (MoM) basis, investment in fixed assets grew 0.15% in September.

After adjusting for the impact of price factors, the first three quarters experienced a year-on-year growth of 6.0% in fixed asset investments, 2.5 percentage points higher than the same period last year. Excluding investment in real estate development, it grew by 7.4% YoY.

The growth rate of fixed asset investment is gradually and steadily returning to normal levels. If real estate investment can slowly stabilise in Q4 2023 and through 2024, fixed asset investment can retake its place as the main driving force for China's future development. Despite significant progress in the field of infrastructure in recent years, China, as a developing country, still lags behind developed economies in several areas and this presents ample investment opportunities.

Breaking down **by ownership types**, private investment reached 19.34 trillion yuan in the first three quarters, reflecting a decrease of 0.6%. In contrast, state-owned investment rose by 7.2% in the first three quarters.

Meanwhile, fixed asset investment from Hong Kong SAR-, Macao SAR- and Taiwan region-owned companies decreased by 2.6% in the first three

quarters while fixed investment from foreign-owned enterprises continued to rise by 1.7%.

By sector, fixed asset investment in the primary industry decreased by 1.0%, while investment in the secondary and tertiary industries respectively increased by 9.0% and 0.7% in H1. Fixed asset investment in these sectors reached 0.80, 11.68, and 25.03 trillion yuan, respectively.

By industry, within the secondary industry, fixed asset investments in the industrial sector went up 9.0%. In the first three quarters, investment in mining increased by 1.6%, while investment in the production and supply of electricity, gas, and water surged by 25.0%.

Fixed asset investment in the manufacturing sector saw a growth of 6.2% YoY, 3.1 percentage points higher than total fixed asset investment growth. The transformation and upgrading of traditional industries and the cultivation and expansion of strategic emerging industries have been driving investment in manufacturing. Specifically, investment in electrical machinery and equipment manufacturing increased by 38.1%; investment in instrument manufacturing by 24.3%; and investment in the automobile manufacturing by 20.4%. Investment in manufacturing technology transformation also edged up by 3.7% YoY, accounting for 38.6% of total manufacturing investment in the first three quarters.

Infrastructure investment increased by 6.2% YoY in the first three quarters, among which, investment in railway transport increased by 22.1%, and water management by 4.9%.

Policy support for the development and growth of the private economy has increased, effectively mitigating the decline in private investment. In the first three quarters, investment in private projects (excluding investment in real estate development) grew by 9.1% YoY. Private investment in the production and supply of electricity, heat, gas, and water increased by 17.7%. Private investment in infrastructure grew by 14.5% while private investment in manufacturing increased by 9.0%.

Investment in high-tech industries accelerated by 11.4% YoY in the first three quarters, 8.3 percentage points higher than overall fixed asset investment growth. Notably, investment in high-tech manufacturing and high-tech services increased by 11.3% and 11.8%, respectively. Furthermore, investment in medical equipment manufacturing went up by 17.0%, while investment in electronic and communication equipment manufacturing rose by 12.8%. In the high-tech service sector, investment in the commercialisation of scientific and technological achievements increased by 38.8%, while investment in e-commerce services was up by 25.3% YoY in the first three quarters.

Total real estate investment

contracted by 9.1% year-on-year in the first three quarters, amounting to 8.73 trillion yuan. The total investment in residential buildings was 6.63 trillion yuan, down 8.4%.

China’s moderate easing of real estate regulations seemingly proved to be too little to reverse the overall market downturn in the third quarter. National and local real estate regulation may be further adjusted in the fourth quarter spurring hopes that a partial sector improvement will be in sight towards the end of the year. If local governments were to lift the current strict purchase restrictions and provide continued support for developers’ financing, the national real estate market is likely to return to a stable development state in 2024.

However, the slow economic recovery, demographic challenges, and other factors may continue to impact the demand for housing. At present, the housing demand of residents has shifted from first purchasing and investing, to improvement of living environment. The demand for first-time home purchases is receding, partially due to factors such as the decline in population, fewer marriages, and the fall in the number of new-borns. At the same time, the housing demand driven by investors that used to dominate the market may continue to shrink further.

Once the real estate market correction settles, it could create new opportunities for potential home buyers and stabilising the long-term development of the industry, thereby helping to address the housing needs of the country’s 1.4 billion people. At the same time, the significance of residential properties as one of the largest assets Chinese families invest in will persist well into the future and determine the long-term health of the sector.

In the first three quarters, the total sales value of all properties reached 8.91 trillion yuan, a decrease of 4.6% YoY. Among all properties, sales of residential properties decreased by 3.2% YoY, reaching 7.93 trillion yuan. In addition, the sales area or floor space of all properties stood at 848 million square metres, down 7.5% YoY.

In September, the prices of newly built properties in tier one cities, namely Beijing, Shanghai, Guangzhou, and Shenzhen, remained almost flat, while resale prices of residential properties increased by 0.2% YoY. In tier two cities, prices of newly built properties declined by 0.3% YoY, while resale prices of properties decreased by 0.5%. In tier three cities, prices of both newly built and resold properties saw a decline of 0.3% and 0.5%, respectively.

In the first three quarters, the funds for real estate development enterprises

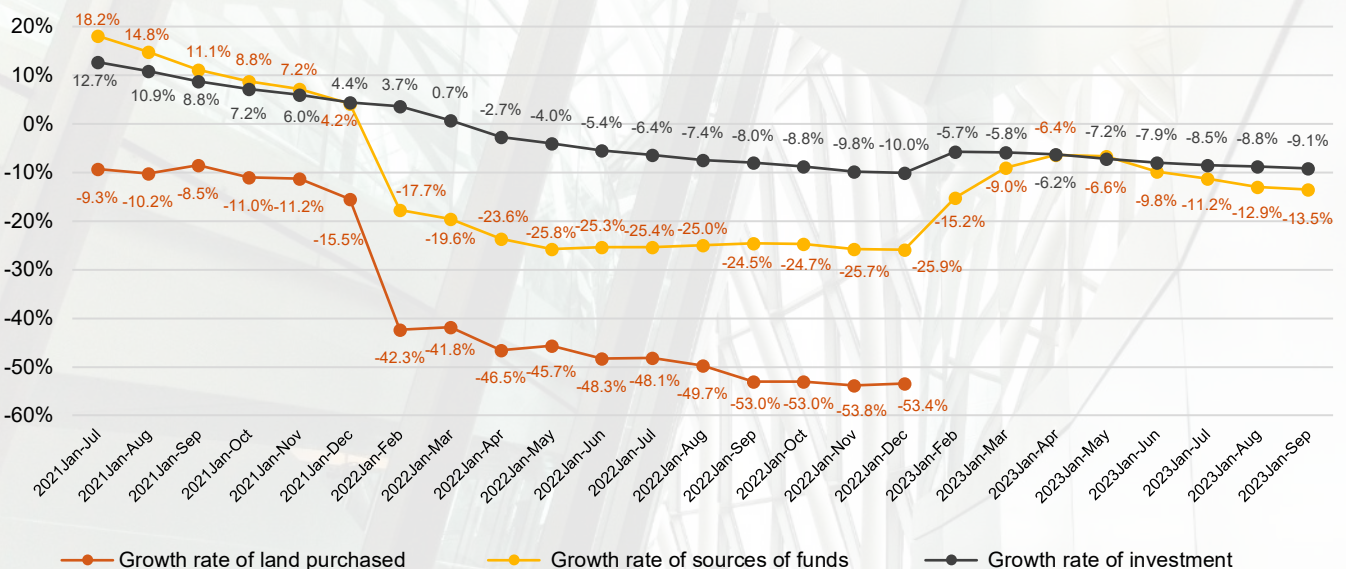
reached 9.81 trillion yuan, a YoY contraction of 13.5%. More specifically, self-raised funds amounted to 3.13 trillion yuan, with a decrease of 21.8%, deposits and prepayments accounted for 3.36 trillion yuan, a decline of 9.6%, and personal mortgage loans and domestic bank loans respectively reduced by 6.9% and 11.1%, contributing 1.7 and 1.2 trillion yuan to total funds.

This data shows that despite the relaxation of real estate financing policies, the situation surrounding developers' funds have not yet improved. This might be caused by the lagging effect of new policy implementation fuelling the market expectation for a rebound in the fourth quarter as the policies begin to show effect.

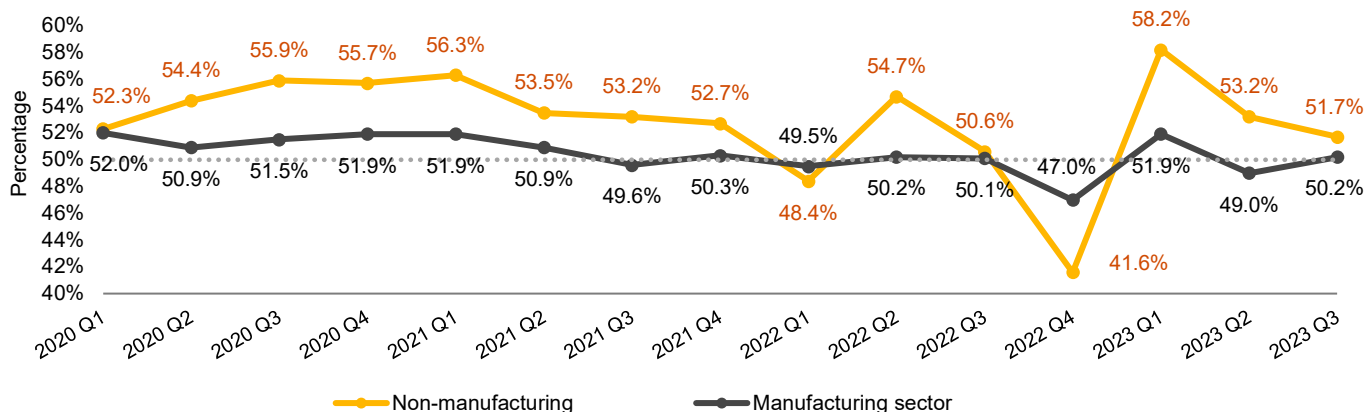
In addition, in the first three quarters:

- Floor space of both residential and commercial buildings, at the start of construction decreased by 23.4% and reached 721 million square metres; residential space at the start of construction shrank by 23.9%.
- Floor space of completed residential buildings increased by 19.8%, reaching 339 million square metres.
- Floor space under construction decreased by 7.1%, reaching 8,157 million square metres.

Growth rates in real estate



Purchasing Managers' Index



China's Purchasing Managers' Index (PMI) for the manufacturing sector improved slightly in Q3, registering at 49.3%, 49.7%, and 50.2% in July, August, and September, respectively.

The manufacturing PMI for September stood above 50%, a 0.5 percentage point increase from the previous month, indicating a return to expansion.

This rebound indicates a change in production and market demand trends, with the production index and new order index reaching 52.7% and 50.5%, respectively. This improvement also signifies a revival in manufacturing activities and suggests growing market confidence among businesses.

In September, the composite PMI output index was 52.0%, up 0.7 percentage points from the previous month, indicating that the production and operation activities of Chinese enterprises have generally picked up momentum. The non-manufacturing business activity index came to 51.7%, also up 0.7 percentage points from the previous month, while the expansion of the non-manufacturing industry has strengthened.

In September, all five sub-indices that constitute the manufacturing PMI were below the critical level of 50%, with the exception of two sub-indices which remained slightly above such level:

- The production index increased to 52.7%, up from 51.9% in August, indicating continued recovery of manufacturing production;
- The new orders index improved to 50.5% from 48.6% in June on the back of rising demand for manufactured goods;
- The raw materials inventory index rose slightly to 48.5% from 47.9% in April, suggesting a relatively low

inventory level for major raw materials in the manufacturing sector;

- The employment index stood at 48.1% in September, showing a marginal decline compared to the beginning of the year, potentially pointing to worsening employment situation for manufacturing companies;
- The supplier delivery time index has improved since the end of Q1, remaining above 50% after reaching 50.8% in September. This indicates that the delivery time for raw material suppliers has continued to remain stable.

The cost of raw material has been steadily rising, with the main raw material purchase price index and ex-factory price index reaching year-highs of 59.4% and 53.5%, respectively. Such price increases reflect the rising costs of commodities and could add further price pressure in the manufacturing sector.

Similarly, the composite PMI output index rose to 52.0% in September from 51.1% in July. This 0.9 percentage point increase suggests an improvement in the overall production situation of companies.

In terms of enterprise size, the PMIs of medium and small enterprises were still below the critical point of 50% in September. The PMI of large enterprises was 51.6%, up 0.8% MoM, remaining above the critical point. PMI for medium-sized enterprises was 49.6%, unchanged from the previous month. Small business PMI was 48.0%, up 0.3 percentage points from the previous month. These figures indicate robust growth and optimism in the economic outlook among larger firms, which is in stark contrast to the continued challenges faced by smaller business in the manufacturing sector.

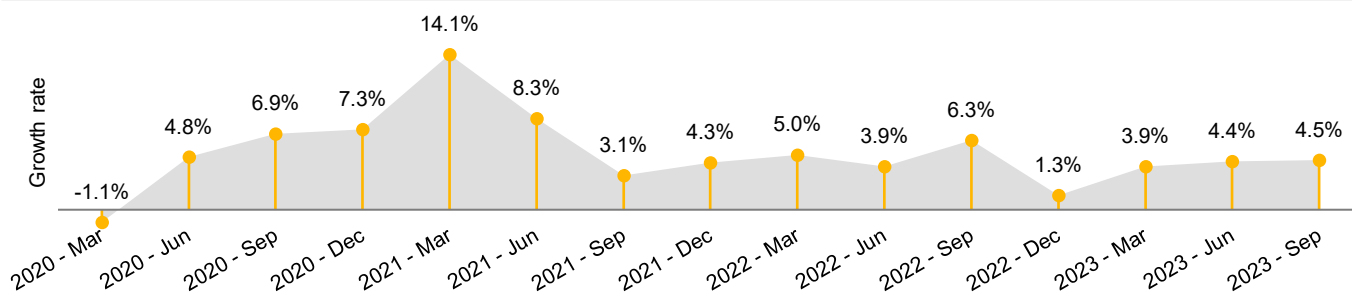
The non-manufacturing business activity index increased to 51.7% in September, up 0.7% MoM. This was particularly noticeable in high-performing industries like transportation, postal services, telecommunication, and financial services. However, business activities in the non-manufacturing sector were still much lower in Q3 compared to Q1 and Q2.

The services sector PMI increased in September, suggesting a faster expansion and recovery in consumer-facing industries.

Specifically, the business activity index of the service sector was 50.9%, up 0.4 percentage points from the previous month. When examining specific industries, the business activity index of water transport, postal service, telecommunications, radio, television and satellite transmission services, Internet software and information technology services, and monetary and financial services are in the higher range of 55.0% or higher, demonstrating rapid business growth in these sectors.

Overall, China's various PMI measures show that the country's economy is undergoing a broad recovery, with notable improvements in the manufacturing sector and continued strengthening of the non-manufacturing sector. However, challenges like cost pressures in raw material and disparities between larger and smaller enterprise are evident. Besides, if the global economy fails to show improvement in 2024, it will pose difficulties for the continued recovery of China's manufacturing industry.

Industrial added values



In the first three quarters, the growth of **Industrial Added Values** for companies over a designated size rose by 4.5% YoY in real terms after adjusting for price factors. Compared with the first quarter and the first half of the year, the growth rate accelerated by 1.0 and 0.2 percentage points, respectively, validating a quarter-by-quarter recovery trend.

In the first three quarters, China's **Utilisation Rate of National Industrial Capacity** stood at 75.6%, comparable to the same period last year, with a quarterly growth of 1.1 percentage points in Q3.

In the first three quarters, the total profit of industrial enterprises above a designated size was 5.41 trillion yuan, which is down 9.0% YoY and 2.7 percentage points lower than that in the period from January to August. In September, the total profits of industrial enterprises above a designated size increased by 11.9% YoY.

The YoY profit decline of the first three quarters was evident across all types of enterprises:

- Profits of SOEs decreased by 11.5% to 1.85 trillion yuan;
- Profits of foreign-owned enterprises, including Hong Kong SAR-, Macau SAR- and Taiwan region-owned enterprises, decreased by 10.5% to 1.29 trillion yuan;
- Profits of joint-stock enterprises decreased by 8.7% to 3.96 trillion yuan;
- Profits of private companies decreased by 3.2% to 1.44 trillion yuan.

Among the 41 industrial categories, the total profits of 15 industries grew YoY while the remainder saw a decrease. Specifically, manufacturing profits fell by 10.9% YoY and reached 3.89 trillion yuan in the first three quarters.

The total profit of mining industry was 993 billion yuan, down 19.9% YoY. The total profit of the production and supply

of electricity, heat, gas, and water increased by 38.7%.to 528 billion yuan.

In the first three quarters, major industries that showed considerable growth in profit included electrical machinery and equipment manufacturing (22.9%), general equipment manufacturing (11.0%), railway, marine, aerospace, and other transportation equipment manufacturing (24.7%), special equipment manufacturing (2.4%), and rubber and plastic products manufacturing (14.8%).

In September, the added value of 26 out of the 41 industrial categories experienced growth. In the first three quarters, 27 industries achieved growth in added value. Among the 620 major industrial products included in the statistics, the output of 344 products saw an increase.

Furthermore, in the first three quarters, the added value of the equipment manufacturing industry increased by 6.0% YoY and the share of its contribution to the growth of all industries was 46.8%.

The added value of the electrical machinery and automotive industries both achieved double-digit growth, up 14.1% and 11.4% YoY, respectively. The added value of the electronics special equipment manufacturing, aircraft manufacturing, and intelligent consumer equipment manufacturing increased by 27.4%, 16.6%, and 10.2%, respectively.

The output of major new energy and new material products maintained rapid growth, of which the output of new energy vehicles increased by 26.7% YoY.

According to the China Association of Automobile Manufacturers (CAAM), car output and sales in the first nine months of 2023 increased by 7.3% and 8.2% YoY, amounting to 21.08 million and 21.07 million units, respectively. In September, the production and sales of automobiles stood at 2.85 million and 2.86 million, respectively, up 6.6% and

9.5% YoY, and both increasing by 10.7% MoM.

Looking ahead to 2023, China's automobile industry is expected to maintain stable growth trend, with an estimated annual car sales volume of around 27 million units, representing a 3% increase. With this, new energy vehicle sales could reach approximately 9 million units, an increase of around 30%.

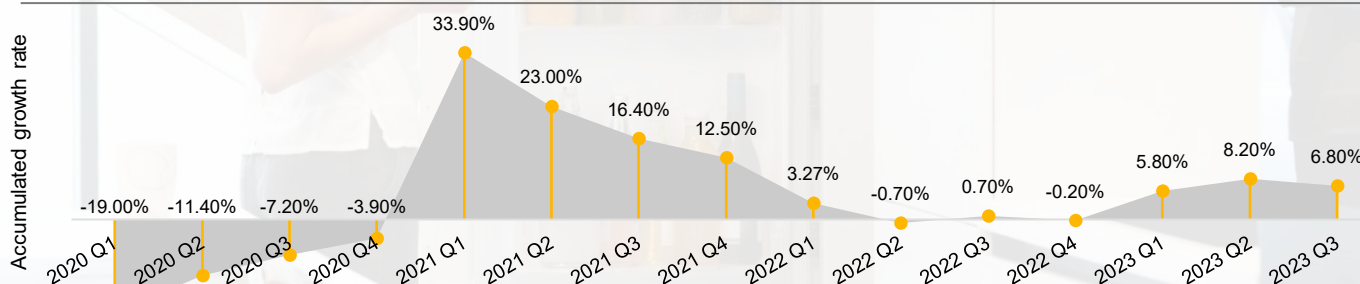
In the first three quarters, China's auto exports continued to grow rapidly to 3.39 million vehicles, up 60% YoY. The export growth rate of the country's new energy vehicles is significantly higher than that of traditional fuel vehicles. China exported 444,000 vehicles in September alone, up 47.7% from a year earlier, of which 96,000 new energy vehicles were exported, up 92.8% YoY. In the first three quarters, 825,000 new energy vehicles were exported, a remarkable increase of more than 110% YoY.

Overall, China's automotive exports are on track to exceed 4.5 million vehicles in 2023, reaching a new all-time record.

When considering ownership structure, in the first three quarters, the added value of SOEs increased by 4.6% YoY. The added value of joint-stock enterprises increased by 4.8%, while the added value of enterprises invested by foreign investors and Hong Kong SAR-, Macau SAR-, and Taiwan region-owned enterprises rose slightly by 0.5%. Altogether, the added value of private companies grew 2.3%.

Lastly, **by industry**, a few major manufacturing sectors experienced the brunt of the profit decline, including computer, communications, and other electronic equipment (-18.6%); mining and washing of coal (-26.5%); chemical fibre (-10.8%); paper and paper products (-25.3%); chemical raw materials and chemical products (-46.5%); textile (-10.2%); and food processing (-15.1%).

Retail sales of consumer goods



Total retail sales of consumer goods increased by 6.8% YoY, reaching 34.21 trillion yuan in the first three quarters. After adjusting for price factors, the real growth was 6.6%. Among them, the retail sales of consumer goods excluding automobiles reached 30.73 trillion yuan, up by 7.0% YoY.

In September, the total retail sales of consumer goods reached 3.98 trillion yuan, an increase of 5.5% YoY and 0.9 percentage points higher than that in August. In August and September, the growth rate of market sales accelerated for two consecutive months, reflecting the continued strengthening of the consumer market.

In the first three quarters, retail sales of services grew by 18.9% YoY, beating retail sales of goods in the same period by 13.4 percentage points.

During the Mid-Autumn Festival and National Day holidays, there was a notable acceleration in the recovery of travel-related consumption. In September, revenue from the accommodation and catering sector grew by double digits year-on-year. The national urban rail transit passenger volume increased by 40% YoY, while the national movie box office surged by 122.5% YoY, marking an acceleration of 13 percentage points.

Considering the types of consumption in the first three quarters, retail sales of goods reached 30.5 trillion yuan, up 5.5% YoY, while catering revenue reached 3.71 trillion yuan, up 18.7%, far surpassing all other retail categories.

In September, retail sales of goods increased by 4.6% to 3.55 trillion yuan, while catering revenue increased by 13.8% to 371 billion yuan.

Out of the 16 retail categories, three recorded negative growth in the first three quarters.

In September, more specifically, the categories that recorded negative growth included, cultural office supplies (-6.8%), building and decoration

materials (-7.9%), and home appliances and audio-visual equipment (-0.6%). These three categories also experienced a slump in sales during the first three quarters.

Additionally, more than 70% of retail goods maintained sales growth in the first three quarters. Among them, grain, oil, food, as well as tobacco and alcohol increased sales by 5.3% and 9.8%, respectively. The retail sales of clothing, shoes and hats, and textiles advanced by 10.6%. The retail sales of cosmetics, gold, silver and jewellery, and sports and entertainment goods increased by 6.8%, 12.2% and 8.3%, respectively.

Furthermore, in the first three quarters, convenience store, specialty shop, exclusive shop and department store witnessed YoY sales growth of 7.5%, 4.3%, 3.1%, and 7.7%, respectively. On the contrary, supermarket sales shrank by 0.4%.

Domestic online retail sales grew 11.6% to reach 10.82 trillion yuan in the first three quarters. Online retail sales of physical goods rose by 8.9% to 9.04 trillion yuan, accounting for 26.4% of total retail sales of goods. The online sales of food, clothing, and daily necessities increased by 10.4%, 9.6% and 8.5%, respectively.

As the macroeconomic recovery continues, domestic consumption is expected to see steady improvement in the fourth quarter. However, the weak consumer confidence in future economic growth prospect is likely to put a dent on consumption growth.

Per capita disposable nominal income rose to 29,398 yuan in the first three quarters, an increase of 6.3% YoY. After adjusting for price factors, the real growth rate was 5.9% YoY. The nominal and real growth rates of household income were 1.0 and 2.7 percentage points higher than the same period the previous year.

For the following data, nominal growth rates are represented on a YoY basis unless otherwise specified.

The average disposable income for urban residents rose by 5.2% to 39,428 yuan, while the average income of rural residents grew by 7.6% to 15,705 yuan in the first three quarters.

The growth of the service sector has led to a marked increase in the number of new jobs created in related industries. According to the national migrant workers monitoring survey, the number of rural workers who migrated for work reached 187.74 million at the end of the third quarter, 5.04 million more than the same period last year, an increase of 2.8%. As a result, the per capita disposable income of rural residents grew 2.4 percentage points faster than that of urban residents in nominal and real terms.

By source of income, in H1,

- Per capita wage income increased by 6.8% to 16,747 yuan.
- Per capita net operating income (net income obtained by a household or household member after deducting operating expenses, depreciation of fixed assets, and production tax from the total operating income) rose by 6.7% to 4,643 yuan.
- Per capita net property income (the income earned by households from deposits, securities, houses, land, etc.) increased by 3.7% to 2,554 yuan.
- Net transfer income per capita (the payments to households by the state or social organisations including pensions, social relief and subsidies, policy-based living allowances, regular donations, etc.) grew by 5.8% to 5,454 yuan.

Per capita consumption expenditure in the first three quarters came to 19,530 yuan, an increase of 9.2% YoY in nominal terms. Expenditure on education, culture and entertainment, health care, transportation, and communications grew rapidly.

The **total value of China's imports and exports** of goods decreased by 0.2% YoY to 30.8 trillion yuan in the first three quarters.

On a quarterly basis, total value of imports and exports increased quarter by quarter, the first, second, and third quarters of imports and exports reaching 9.72 trillion, 10.29 trillion, and 10.79 trillion yuan, respectively. From a monthly point of view, the total value of imports and exports in September were 3.74 trillion yuan, increasing for two consecutive months, and breaking a new monthly record in the year.

More specifically, in the first three quarters, total exports value rose by 0.6% YoY to 17.6 trillion yuan, while imports value decreased by 1.2% to 13.2 trillion yuan. This indicates a relative stability in China's trade amidst global fluctuation, demonstrating resilience and adaptability.

The World Trade Organisation (WTO) and the International Monetary Fund (IMF) have recently expressed concerns about the fragmentation of global trade. The WTO has lowered their estimated growth in global trade in goods this year from the previous forecast of 1.7% to 0.8%, indicating that the world's economic recovery and sustainable development still face substantial challenges. The external environment for China's foreign trade remains complex and challenging.

Despite global economic headwinds and domestic challenges, such as a relatively slow recovery of the domestic economy and weak consumption, China has managed to foster a stable trade environment, with positive growth in key areas and sectors. The focus on diversifying its trade partners, enhancing the role of private enterprises, along with the expansion of specific trade categories, have positioned China favourably for continued trade success in the future.

For Q4 and 2024, China's foreign trade is expected to remain in line with global economic and trade growth, while rising domestic demand could boost imports provided that the momentum of domestic economic recovery can keep up with market expectations.

By product, in the first three quarters, the value of China's exports of mechanical and electrical products reached 10.26 trillion yuan, an increase of 3.3% YoY, accounting for 58.3% of the country's total export value, an increase of 1.5 percentage points over the same period last year. Among them, automobiles and spare parts, ships, and electrical equipment increased by 48.2%, 26.8%, and 16.2%, respectively. During the same period, the value of exports of labour-intensive products reached 3.07 trillion yuan, accounting for 17.5% of total export value.

Furthermore, imports of bulk commodities and consumer goods increased in the first three quarters. Indeed, China's energy, metal ore, grain, and other bulk commodity imports increased by 16.5% YoY. Of this total, 860 million tons were energy products such as crude oil, natural gas, and coal, an increase of 31.8%. Imports of iron, aluminium, and other metal ores reached 1.09 billion tons, an increase of 7.8%. During the same period, the import value of consumer goods reached 1.46 trillion yuan, an increase of 3.1%. Among them, dry and fresh fruits, nuts, and medical and health products increased by 22.8% and 18.5%, respectively.

As the world's second largest economy and the largest trader in goods, China contributed to nearly 30% of the global manufacturing value added in Q3. China has consistently pursued a strategy of expanding imports for years and as a result has become the world's second largest import market for 14 consecutive years. In the first, second, and third

quarters, China imported goods and services worth 4.23 trillion, 4.39 trillion, and 4.58 trillion yuan, respectively.

By geography, according to the General Customs Administration, China's imports and exports to ASEAN in the first three quarters were worth 4.68 trillion yuan, a year-on-year increase of 0.8%, accounting for 15.2% of China's foreign trade. ASEAN continues to be China's largest trading partner, and bilateral economic and trade exchanges continue to develop steadily, maintaining a positive momentum of growth.

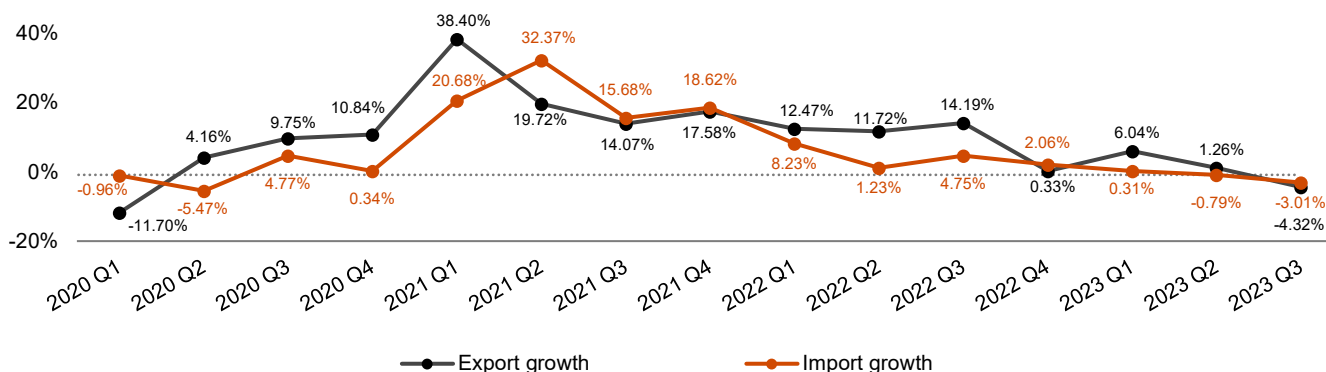
China's trade with the EU were worth 4.16 trillion yuan, down 1.5%. The trade with the United States were worth 3.46 trillion yuan, down 8.2%. The trade with Japan were worth 1.65 trillion yuan, down 6.5%. The trade with South Korea were worth \$1.61 trillion, down 10.6%.

In the first three quarters, China's imports and exports with emerging markets such as Central Asia, Africa, and Latin America increased by 33.7%, 6.7%, and 5.1%, respectively, all higher than the overall growth rate of the country's foreign trade.

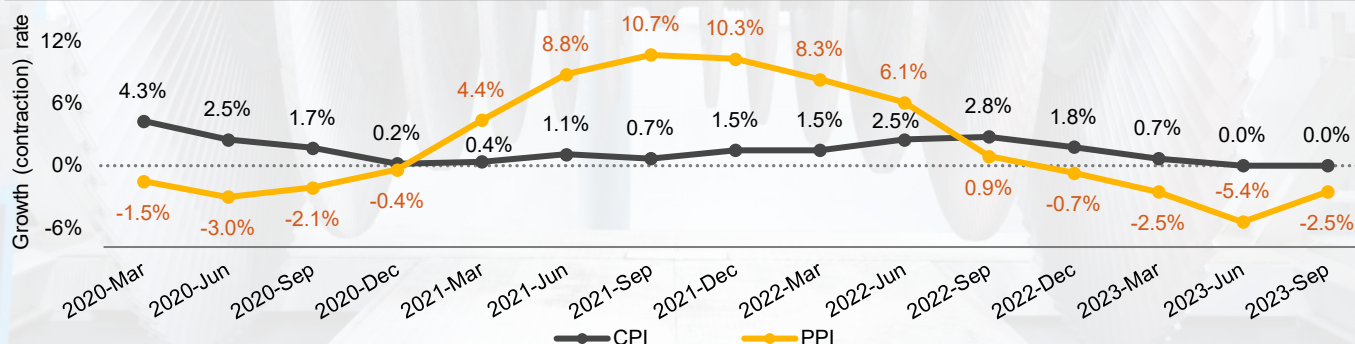
In the first three quarters, China's trade with the Belt and Road countries reached 14.32 trillion yuan, an increase of 3.1% YoY, accounting for 46.5% of the total import and export value.

By ownership, the imports and exports of private enterprises continued to grow rapidly. In the first three quarters, China's private enterprises imported and exported goods and services worth 16.34 trillion yuan, an increase of 6.1% YoY, which accounts for 53.1% of the total trade value. During the same period, imports and exports of foreign-invested enterprises reached 9.42 trillion yuan, while those of state-owned enterprises amounted to 4.95 trillion yuan. These figures represented 30.6% and 16.1% of total trade, respectively.

Quarterly balance of trade



Producer Price Index and Consumer Price Index



China's **Producer Price Index (PPI)** declined by 3.1% YoY on average in the first three quarters. In September, the PPI fell by 2.5% YoY, continuing on a downward year-on-year trend that began in October 2022. The PPI has continued to decrease throughout the first nine months of 2023, persisting with the YoY decline.

The month-on-month variations of the PPI continued to moderate in 2023, fluctuating between 0.4% to -0.9% in the first nine months. As a result of a gradual recovery of the demand for industrial products and the continued rise in international crude oil prices, the PPI increased by merely 0.4% MoM in September, following a 0.2% MoM increase in August. Earlier this year, the PPI either remained flat or decreased slightly.

In the first nine months, the price of means of production fell by 4.1% while the price of means of living rose by 0.3% YoY. In September, both prices decreased by 3.0% and 0.3% YoY, respectively.

Among the price of means of production, the prices of mining, raw material, and processing industries decreased by 8.0%, 4.9%, and 3.4% YoY, respectively in the first nine months. In September, these three prices continued to fall by 7.4%, 2.8%, and 2.8% YoY, respectively.

By industry, in the first three quarters, the prices of oil and natural gas mining, chemical raw materials and chemical products manufacturing, petroleum, coal, and other fuel processing industries, and non-ferrous metal smelting and rolling processing fell by 13.0%, 9.8%, 9.3%, and 4.5%, respectively. These price changes were responsible for an approximate 1.46 percentage points drop of the PPI year-on-year. In the third quarter, international crude oil and non-ferrous metal prices rebounded, driving a reduction in the monthly decline in prices of oil-related industries.

Furthermore, In the first three quarters, the prices of coal, steel, and cement continued to fall with coal mining and

washing prices dropping by 10.5% YoY. Affected by the real estate market, the demand for building materials such as steel and cement was relatively weak. As a result, ferrous metal smelting and rolling processing, and cement manufacturing prices fell 11.5% and 14.9% YoY, respectively.

In the third quarter, effects of new real estate policies could be felt as the decrease in price of ferrous metal smelting and rolling processing was reduced to 7.5% YoY, 5.8 percentage points lower than the first half of the year.

On a monthly basis, in September, China's PPI fell 2.5%. The price of the means of production fell by 3.0% and the price of means of living by 0.3%. The price decline of major industries narrowed: coal mining and washing fell by 15.6%, manufacturing of chemical raw materials and chemical products decreased by 7.1%, processing of oil, coal, and other fuels fell by 6.7%, ferrous metal smelting and rolling decreased by 5.0%, and oil and gas extraction by 3.3%. The above five industries together contributed to the PPI decline by about 1.42 percentage points year-on-year.

In addition, the prices of the cultural, educational, industrial, and sports and entertainment goods manufacturing rose by 5.7%, and prices of non-ferrous metal smelting and rolling processing rose by 2.7%. New energy vehicle manufacturing prices fell by 4.5%, while computer communications and other electronic equipment manufacturing prices fell by 1.8%.

In September, fuel and power prices rose by 1.8% on a monthly basis, chemical raw materials prices by 1.6%, non-ferrous metal materials and wire prices by 0.9%, and ferrous metal materials and agricultural products prices by 0.4%. Prices of building materials and non-metals declined by 1.0%.

China's **Consumer Price Index (CPI)** rose slightly by 0.4% in the first nine months YoY and remained flat in

September. During the third quarter, the CPI experienced minor changes, decreasing by 0.3% in July and rising by 0.15% in August YoY. The CPI increased by 0.2%, 0.3%, and 0.2% MoM in July, August, and September, respectively.

Continuing the same trend as the previous periods, China's relatively flat CPI during the first three quarters indicates a relatively weak consumption recovery. As a result, there are concerns in the market that China could face deflationary pressures. Although the domestic economy continued to recover in the third quarter, the scope and depth of recovery are still not evidently strong and the probability of significant price increases in the fourth quarter is deemed unlikely.

In H1, food prices rose 2.3% YoY. The price of fresh fruit rose by 7.9%, while pork prices were up by 3.2%, and prices of eggs, poultry and meat, and edible oil rose by 3.9%, 1.9%, and 4.7%, respectively. Meanwhile, prices of fresh vegetables, beef, and lamb fell by 2.7%, 1.1%, and 2.8%, respectively.

In the first three quarters, food prices rose 0.9% YoY. Potatoes, fresh fruits, poultry meat, eggs, and edible oil prices rose by 9.2%, 6.0%, 4.6%, 2.5%, and 2.4%, respectively. With sufficient pig production capacity, pork prices have fallen for five consecutive months, with an average decline of 6.8% in the first three quarters. Freshwater fish, vegetables, lamb, and beef prices decreased by 2.4% to 4.5%. Other food prices remained stable.

Finally, in the first three quarters, non-food prices rose 0.3% YoY. The price of services increased by 1.0% while hotel and tourism prices increased by 9.9% and 9.3%, respectively. Air ticket and vehicle rental prices increased by 18.0% and 4.8%, respectively. Prices of industrial consumer goods fell 0.9%, mainly driven by lower energy prices. Energy prices were down 3.4% from a year earlier. Among them, gasoline and diesel prices fell by 7.1% and 7.7%, respectively.

2 Policy updates

Aggregate financing to the real economy grew by 9% in the first three quarters.

According to the People's Bank of China (PBOC), the total aggregate financing to the real economy (AFRE) increased by 29.33 trillion yuan in the first three quarters, up 1.41 trillion yuan YoY. By the end of Q3, total AFRE reached 372.5 trillion yuan, up 9% YoY.

The AFRE increased by 4.12 trillion yuan, up 0.56 trillion yuan MoM in September. China's M2 money supply, which includes cash, checking deposits, easily convertible near money, and AFRE, increased by 10.3%, reaching 287.3 trillion yuan.

Within the AFRE, the balance of RMB loans reached 289.67 trillion yuan, up 11.2% YoY. Specifically, the total RMB loans to the real economy increased by 19.75 trillion yuan in the first three quarters, 1.58 trillion yuan more than the previous year.

Among the aforementioned RMB loans, household loans increased by 3.85 trillion yuan, up 350 billion YoY in the first three quarters. Personal business loans increased by 2.97 trillion yuan, representing an increase of 658 billion yuan compared to last year. These loans have been instrumental in supporting the production and operation activities of individual business and small, micro business owners.

Personal short-term consumer loans increased by 460 billion yuan, an increase of 349 billion yuan YoY. This surge is attributable to a recovering consumer market, which has shored up the demand for short-term consumer loans.

Loans to enterprises and public institutions increased by 15.68 trillion yuan in the first three quarters, a YoY increase of 1.2 trillion yuan. Specifically, medium and long-term loans grew by 11.88 trillion yuan, an increase of 3.23 trillion yuan YoY. Short-term loans increased by 3.99 trillion yuan YoY, 712 billion yuan more than last year. Bill financing fell by 336 billion yuan YoY, a decrease attributable to a high comparative base from the previous year.

Furthermore, trust loans and undiscounted bank acceptance bills increased by 64 billion yuan and 242 billion yuan, respectively in the first three quarters, an increase of 545 billion yuan and 331 billion yuan YoY. Entrusted loans also increased by 106 billion yuan, a year-on-year increase of 224 billion yuan. This shows encouraging recovery in off-balance sheet financing.

Government bond financing also maintained steady growth in the first three quarters. Over this period, the net financing of government bonds was 5.96 trillion yuan, up 46 billion yuan over the same period last year. Among them, the net financing of central government bonds was 2.37 trillion yuan, up 646.3

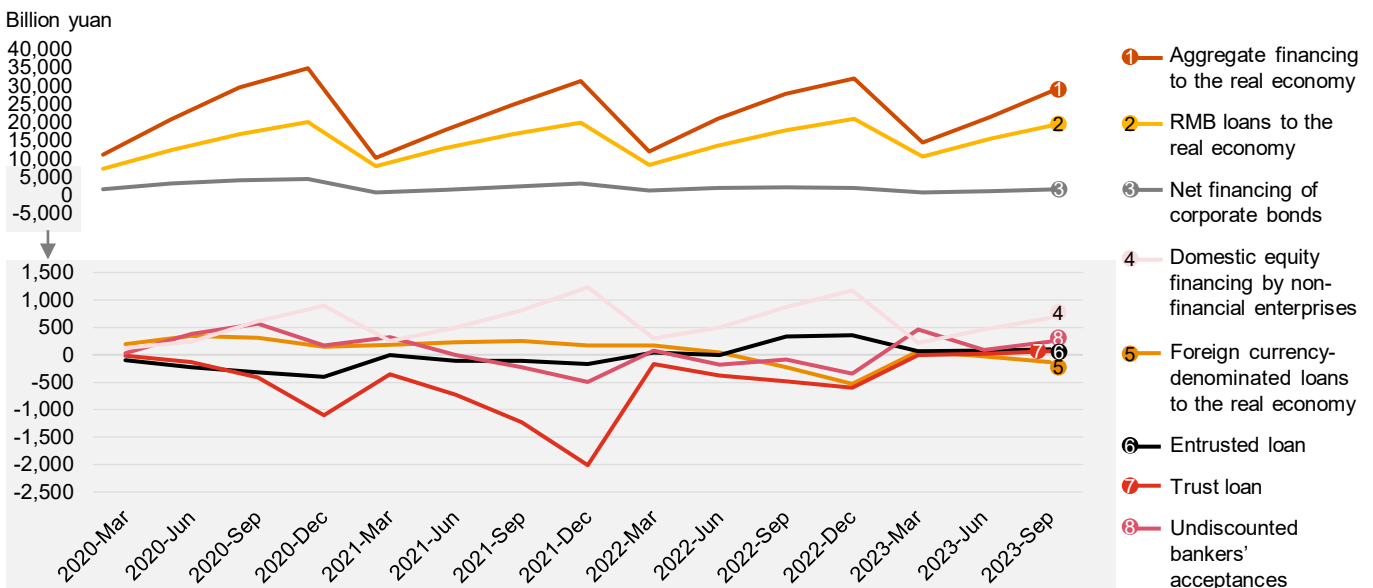
billion yuan over the same period last year.

At the same time, perhaps due to the uncertainty surrounding enterprises' expectations for future economic growth, the direct financing of enterprises has decreased in the first three quarters. Non-financial enterprises raised 674 billion yuan in domestic stock financing, 1.99 trillion yuan less than the same period last year. Net corporate bond financing also fell by 613 billion yuan YoY to reach 1.63 trillion yuan.

In order to cut down on the interest burden of residents and enterprises, PBOC has continued its efforts in reducing financing costs. In the first three quarters, the one-year and five-year loan prime rates fell by 20 basis points and 10 basis points, respectively. The weighted average interest rate on new corporate loans in September was 3.85%, 14 basis points lower than the year before. At the end of September, the weighted average interest rate on outstanding housing loans was 4.29%. As a result, the net profit of commercial banks increased 2.6% YoY to 1.25 trillion yuan in H1. The growth rate was however 4.5 percentage points lower than that of the same period last year.

In Q4 and throughout 2024, monetary policies are expected to continue to support the full recovery of China's economy by fostering a suitable monetary and financial environment.

Aggregate financing to the real economy (flows)



Source: Wind

Fiscal revenue increased by 8.9% while fiscal spending grew by 3.9%.

According to the Ministry of Finance, national fiscal revenue increased by 8.9% YoY to 16.67 trillion yuan in the first three quarters. This steady growth in government revenue is mainly due to the sustained economic recovery witnessed since the beginning of this year. It is also influenced by the low base established due to the implementation of large-scale VAT rebate policy last year.

Specifically, central government revenue decreased by 8.5% to 7.59 trillion yuan while local government revenue increased by 9.1% to 9.08 trillion yuan in the first three quarters. The revenue income of all 31 provinces in the Chinese mainland achieved positive growth, of which 14 maintained double-digit growth. Fiscal revenue in the northeast, central, and western regions sustained double-digit growth rates.

National tax revenue went up by 11.9% YoY to 13.91 trillion yuan in the first three quarters. Non-tax revenue decreased by 4.1% to reach 2.76 trillion yuan.

Among the 13 major sources of tax revenue, eight categories decreased in the first three quarters. The top five sources of tax revenue include:

- **Value-added tax revenue:** up 60.3% to 5.35 trillion yuan; The main driver behind this surge was that the presence of a large number of tax rebates in the same period last year, creating a low comparative base;
- **Enterprise income tax revenue:** down 7.4% to 3.37 trillion yuan;
- **Domestic consumption tax revenue:** down 4.9% to 1.25 trillion yuan;
- **Value-added tax and consumption tax revenues on imported goods:** down 7.3% to 1.41 billion yuan; customs duties totalled 190 billion yuan, down 12.1% YoY;

- **Personal income tax:** down 0.4% to 1.13 trillion yuan.

In the first three quarters, tax revenue from land ownership increased by 2.2% to 449 billion yuan, while land value-added tax revenue shrank by 16% to 434 billion yuan.

Property tax revenues increased by 7.5% to 260 billion yuan. Urban land use tax fell by 3.1% to 155 billion yuan. Farmland occupation tax revenue decreased by 16% to 89 billion yuan.

As the economy continues to recover in the fourth quarter, fiscal revenue is expected to maintain steady growth in 2023, benefiting fiscal expenditure in key areas.

The national public budget expenditure also increased by 3.9% YoY to 19.79 trillion yuan in the first three quarters. The central government's expenditure increased by 6.6% to 2.67 trillion yuan, while local government expenditure grew 3.5% to 17.12 trillion yuan.

Government expenditure was maintained at an appropriate level, which further strengthened the momentum of economic development, effectively improving people's livelihood, and laying a solid foundation for achieving the economic and social development targets for the year.

Since the beginning of 2023, the government's proactive fiscal policy has gained effectiveness and strongly assisted the overall economic recovery. The central government has introduced two important policies recently: the issuance of an additional 1 trillion yuan of national bonds and the advance issuance of some of local government debt limits for 2024. This second policy will provide local governments with access to about \$2 trillion in additional funds that can be utilised in Q4 2023. Major items included in fiscal expenditure are as follows:

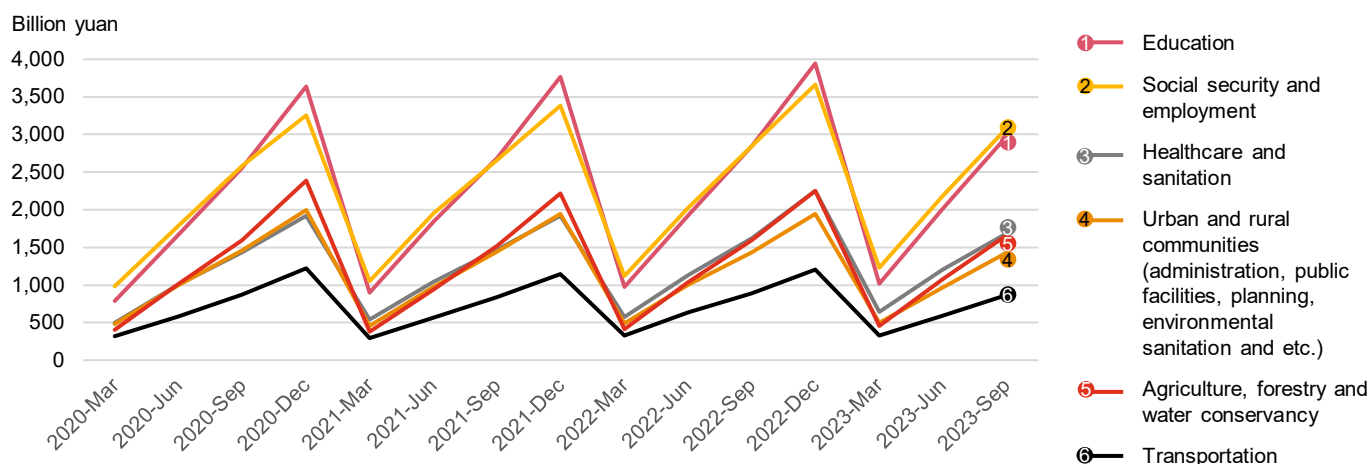
- 3.08 trillion yuan on social security and employment (8.2% YoY increase);
- 2.96 trillion yuan on education (4.3% increase);
- 1.66 trillion yuan on agriculture, forestry, and water conservancy (3.9% increase);
- 1.42 trillion yuan on urban and rural communities, including administration, public facilities, planning, and environmental sanitation (0.9% decrease);
- 1.68 trillion yuan on healthcare and sanitation (3.3% increase);
- 867 billion yuan on transportation (7.4% decrease).

Expenses on debt interest payments grew by 4.4% to 858 billion yuan. Spending on science and technology increased by 3.3% to 673 billion yuan, while spending on energy conservation and environmental protection rose by 1.7% to 369 billion yuan. Spending on culture, tourism, sports, and media reached 260 billion yuan, up 0.8% YoY in the first three quarters.

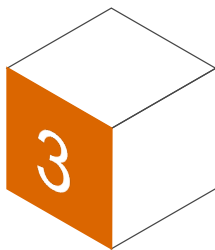
In the first three quarters, income of government funds declined by 15.7% to reach 3.87 trillion yuan, while the spending of government funds decreased by 17.3% to 6.64 trillion yuan. Specifically, the income of central government funds reached 305 billion yuan, a YoY decrease of 7.9%, in contrast to the reduction of 16.3% to 3.56 trillion yuan in the income of local government funds. Among them, the revenue from the sale of state-owned land use rights was 3.09 trillion yuan, down 19.8% YoY.

The spending of central government funds reached 193 billion yuan, a YoY drop of 45.8%. The spending of local government funds was 6.44 trillion yuan, falling 16% YoY. The expenditure related to state-owned land use rights was 3.55 trillion yuan, down 18.7% YoY.

General public budget expenditure



Source: Wind



Highlights of the recent development of China's digital economy

Highlights:

- China's digital economy continued to grow robustly despite global turbulence over the past three years, with an average annual growth exceeding 10% from 2020 to 2022.
- By the end of 2022, there were 1.273 million valid patents registered in the core industries of the digital economy.
- Emerging telecom segments such as cloud computing, big data, and IoT exhibited rapid growth.
- The electronic information manufacturing industry experienced a slowdown in 2023, with a 3.4% decline in revenue compared to 2022.
- China has become a global leader in computing power infrastructure, driven by rapid development in digital infrastructure and data resources.
- Future development is focused on enhancing digital infrastructure, data resources, and security along with fostering deeper integration of digital technology across various sectors of the economy.

As of 2023, China's overall economy may not have fully recovered to where it stood three years ago, and the development of the digital economy has been affected by a slowdown in macroeconomic growth. However, the rapid rise of artificial intelligence (AI), exemplified by ChatGPT, signifies the dawn of a new era in the development of the digital economy, both globally and in China. The advent of the AI era is poised to expedite the disruption of various industries and domains, heralding a new phase of human development. This represents a unique and pivotal opportunity for China to cultivate an "innovative economy" that holds immense significance.

The rapid advancement of the digital economy is often described as the "Fourth Industrial Revolution", with AI technologies like ChatGPT playing a significant role in its development. At the core and foundation of the digital economy is data, an essential resource enabling AI to perform. The "Fourth Industrial Revolution" earns its name because its development is disruptive. The tremendous advancements in digital technology it brings forth has the potential to reshape many industry landscapes, in a similar way that the widespread adoption of mobile payments has propelled China's transition into a cashless society, simultaneously driving the growth of multiple industries.

Looking back in history, the introduction of ChatGPT can be likened to the significant technological advancements such as steam engine, the computer, and the internet, marking the entry of the digital economy into the era of intelligence. The widespread adoption of AI is expected to significantly enhance human labour productivity just as the invention of the steam engine by Watt marked the beginning of industrialisation in the West.

One of the main reasons behind China's lagging development in modern history can be attributed to it missing out on the previous industrial revolutions, particularly the First Industrial Revolution. In 1776, at a historical time when Watt invented the steam engine, Adam Smith, the father of classical economics, published "The Wealth of Nations", and the United States achieved independence, China was under the rule of Emperor Qianlong who was in his forty-first year of reign. To an effort to stabilise his regime, the Qing government revoked a policy of "extensive destruction of books". Due to the vast developmental gap between China and the West, the Chinese population at that time likely had little or no opportunity to access knowledge about the steam engine, "The Wealth of Nations", or the American "Declaration of Independence".

Today, after the emergence of generative AI in the United States, the impact it had in China is no less remarkable compared to any other developed country. This has laid a solid foundation for the rapid application of artificial intelligence as the digital economy has swiftly developed in recent years.

Whether it is ChatGPT or other landmark innovations in the future digital economy, developed countries are still likely to be the birthplaces of these inventions. Therefore, China's innovative economy would benefit greatly from close international connections. China's innovative economy should be built on the solid foundation of global and human scientific and technological progress, benefiting from and contributing to the enrichment of human civilisation.

So, after three years impacted by multiple global challenges, how has the digital economy progressed in China? This article provides a brief overview.



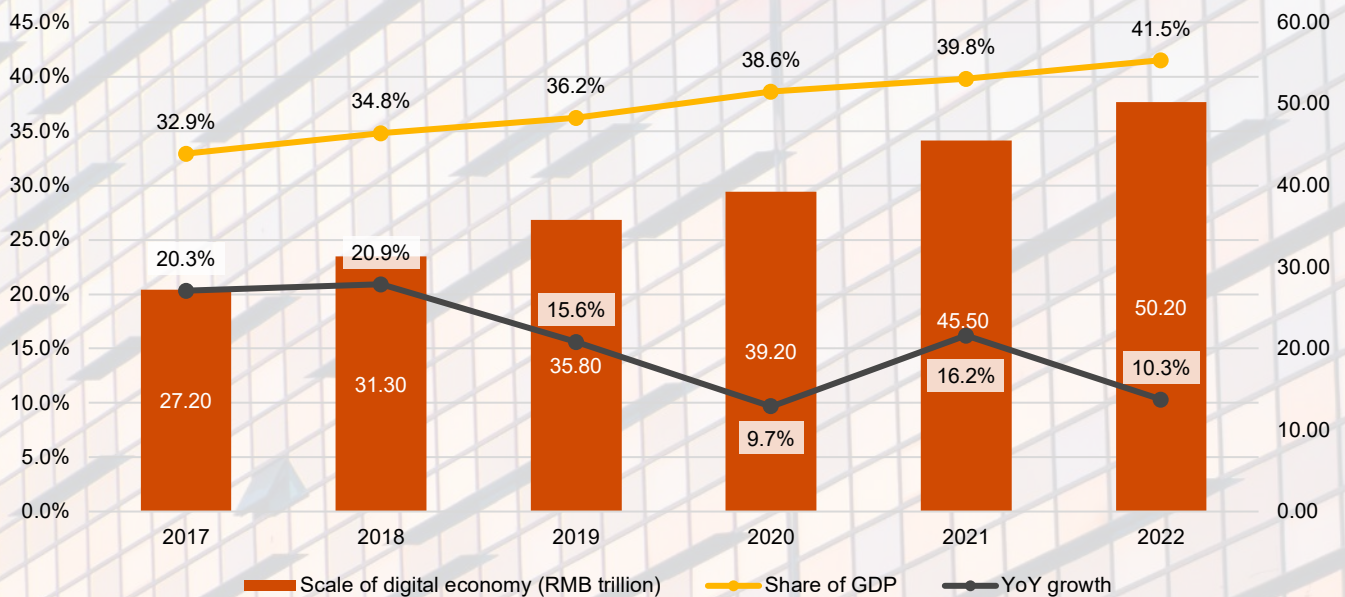
■ The digital economy reaches 50 trillion yuan, exceeding 40% of GDP

Despite the significant impact that the challenges of the last three years had on China's economic outlook, the digital economy has sustained robust growth, with an average annual increase exceeding 10% from 2020 to 2022. In 2019, China's GDP reached 99 trillion yuan, with the digital economy accounting for approximately 35.8

trillion yuan, representing about 36.2% of the total GDP, according to China Academy of Information and Communications Technology. During that time, the growth rate of the digital economy was 15.6%, significantly higher than the GDP growth rate of 6.1% for that year. By 2022, the scale of China's digital economy had grown to

50.2 trillion yuan, ranking second in the world in terms of size and accounting for 41.5% of the country's GDP. In 2023, while many sectors of China's economy might not have fully recovered to 2019 levels, the digital economy is expected to maintain its strong growth momentum.

Digital economy growth in China from 2017 to 2022



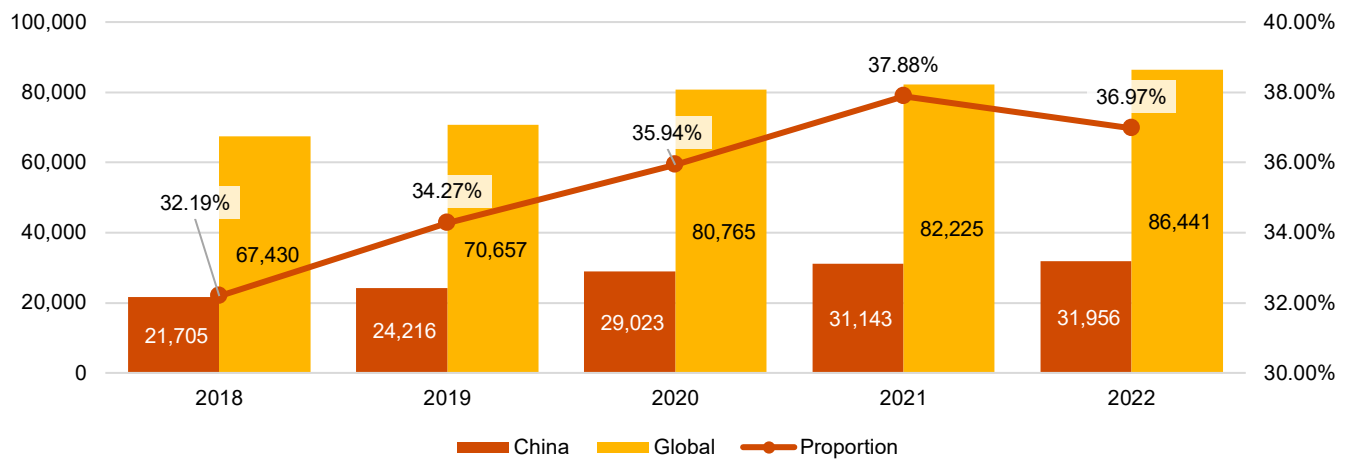
Source: China Academy of Information and Communications Technology

For instance, according to statistics from the National Intellectual Property Administration, as of the end of 2022, there were 1.273 million valid invention patents registered in the core industries of China's digital economy. The growth in registration of invention patents in the

core digital economy industries has been nothing but rapid. In 2022, there was 296,000 invention patent grants in these core industries, accounting for 42.6% of the total domestic invention patent grants. In the period after 2016, the average annual growth rate of

patent grants in core digital economy industries was 22.6%, or 1.5 times the average annual growth rate of all domestic invention patent grants during the same period.

Growth of PCT* patent applications related to information technology in China from 2018 to 2022 (Unit: by pieces)



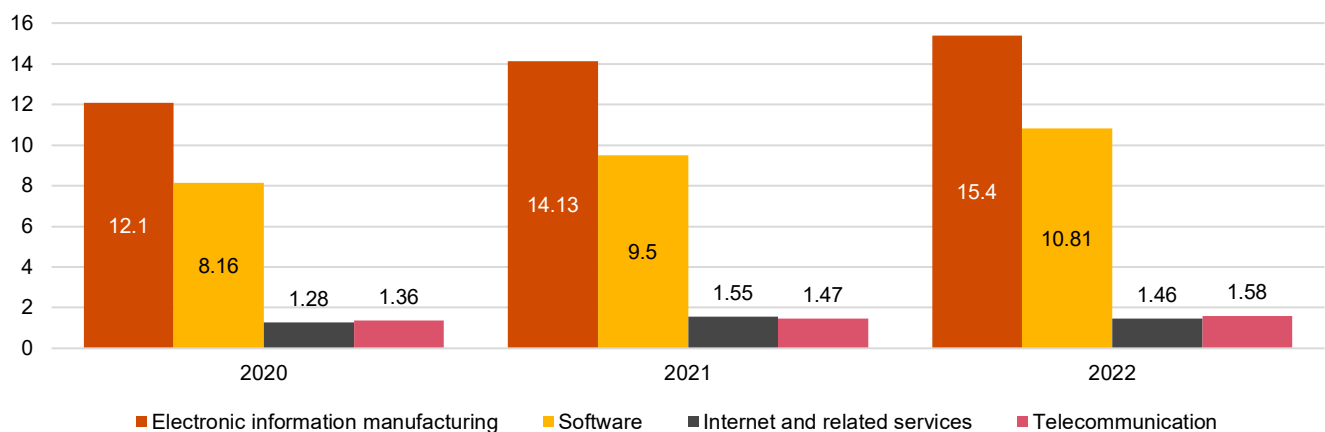
Source: Office of the Central Cyberspace Affairs Commission
*PCT: Patent Cooperation Treaty

Looking at the sectoral breakdown, it is observed that China's digital economy, amounting to the 50.2 trillion-yuan in 2022, mainly comprised the electronic information manufacturing industry (15.4 trillion yuan, up 5.5% year-on-year), software services (10.81 trillion yuan, up 11.2% year-on-year), and the core industry of the industrial internet (1.2

trillion yuan, up 15.5% year-on-year). National online retail sales reached 13.79 trillion yuan, of which the online retail sales of physical goods accounted for 27.2% of the total retail sales of consumer goods. Enterprises in the internet and related services industry above a designated size (the scope of which was adjusted from the previous

year's internet and related services revenue of 5 million yuan to 20 million yuan and above) recorded revenues of 1.46 trillion yuan, down 1.1% year-on-year. Telecommunications business revenue totalled 1.58 trillion yuan, representing an 8% year-on-year increase.

Revenue growth of China's digital industry from 2020 to 2022 (Unit: RMB trillion)



Source: Ministry of Industry and Information Technology of the People's Republic of China

■ Data centres, cloud computing, big data, and the Internet of Things (IoT) are experiencing rapid growth

According to statistics from the Ministry of Industry and Information Technology, in the first three quarters of 2023, the cumulative revenue from telecommunications services reached 1,281 billion yuan, mainly generated by three main telecommunications companies. This represents a year-on-year increase of 6.8%. When calculated at constant prices from the previous

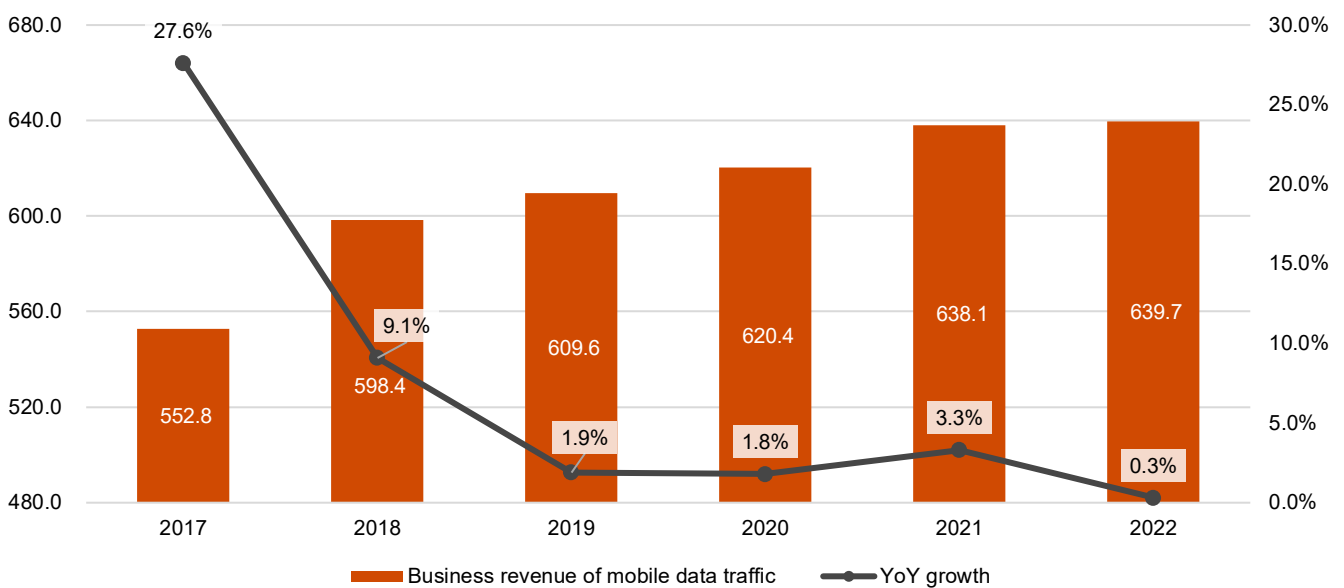
year, the total volume of telecommunications services grew by 16.5% year-on-year.

The revenue from telecommunications services is mainly derived from three sectors: fixed internet broadband, mobile data traffic, and emerging businesses such as Internet Protocol Television (IPTV), Internet data centres,

big data, cloud computing, and IoT. Among these, mobile data traffic accounted for the highest revenue, reaching 492 billion yuan and contributing to about 38.4% of the overall revenue, with a year-on-year increase of 0.4%. In 2022, the revenue from this sector was 640 billion yuan, only edging up 0.3% compared to the previous year.



Business revenue growth of mobile data traffic from 2017 to 2022 (Unit: RMB billion)



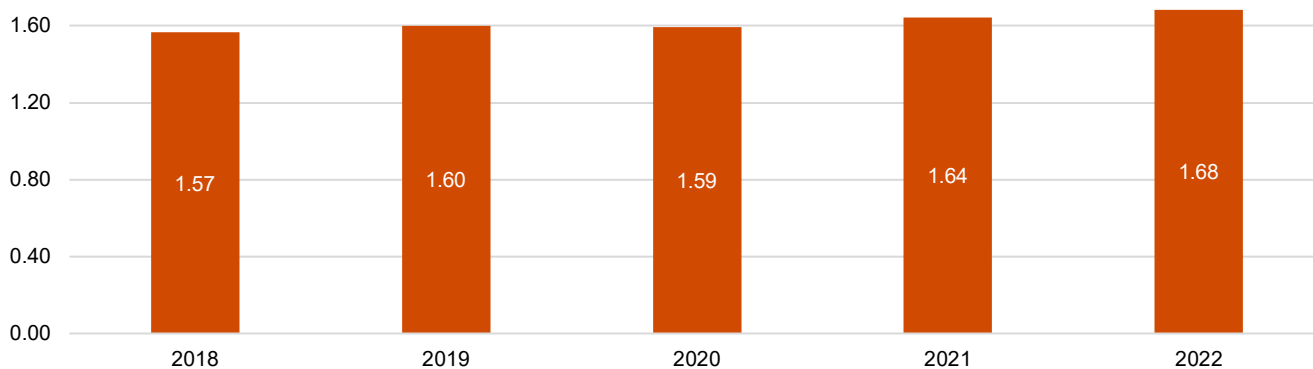
Source: Ministry of Industry and Information Technology of the People's Republic of China

The slowdown in the growth of the mobile data traffic industry since 2019 can be attributed to two main reasons. Firstly, the domestic mobile phone market has reached maturity, resulting in slower pace of growth. With a population of approximately 1.4 billion,

while in 2019, China has already exceeded 1.6 billion mobile subscriptions by 2019. Secondly, the deceleration in macroeconomic growth has impacted the demand for 5G phones. Taking 2022 as an example, 272 million mobile phone units were

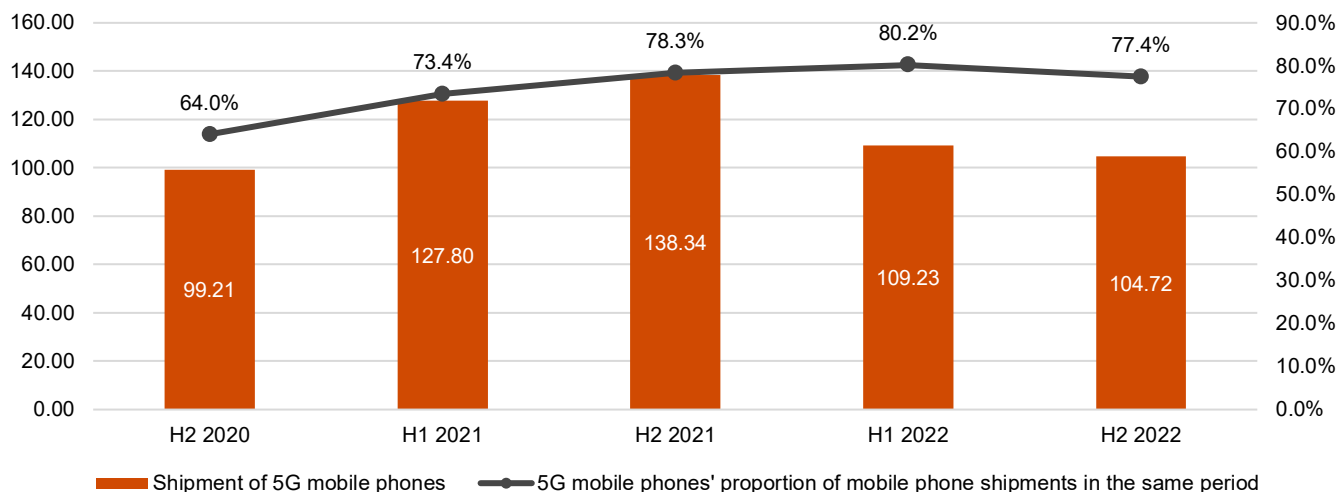
shipped, a year-on-year decrease of 22.6%. Out of these, 5G phones accounted for 214 million units, down 19.6% year-on-year, representing 78.8% of the total mobile phone shipments during the same period.

Size of mobile phone users (Unit: billion)



Source: Ministry of Industry and Information Technology of the People's Republic of China

Shipment of 5G mobile phones from H1 2020 to H2 2022 (Unit: by million pieces)



Source: China Academy of Information and Communications Technology

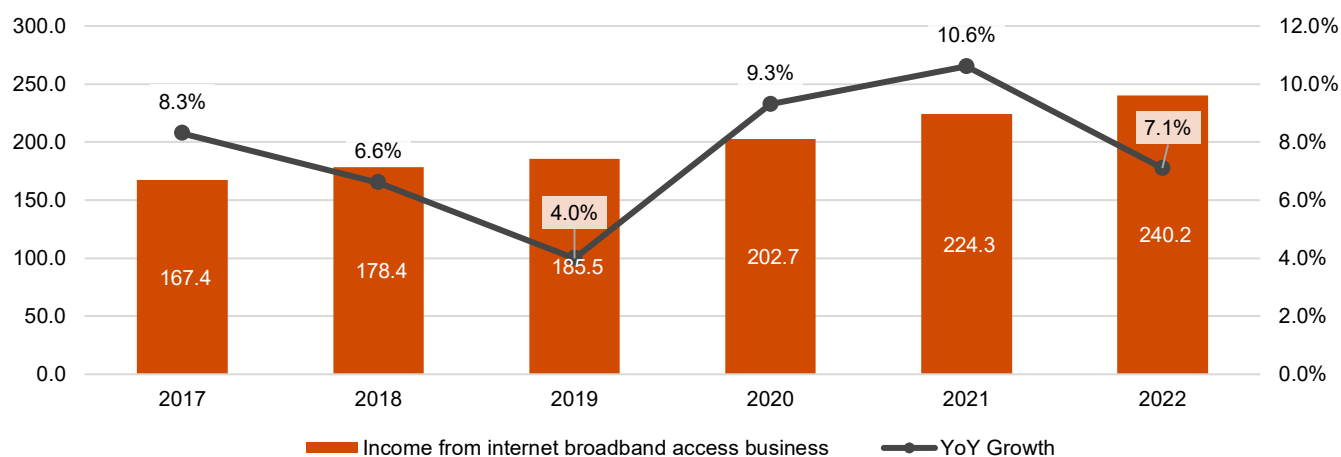


Among the three major telecommunications services, apart from mobile data traffic, fixed internet broadband and emerging services continue to maintain a steady growth

rate, with the latter showing particularly strong growth. In the first three quarters of 2023, the revenue from fixed internet broadband services reached 196 billion yuan, a year-on-year increase of 8%,

accounting for 15.3% of the total revenue from telecommunications services. Over the past six years, the average growth rate has been approximately 7.5%.

Income from internet broadband access business from 2017 to 2022 (Unit: RMB billion)



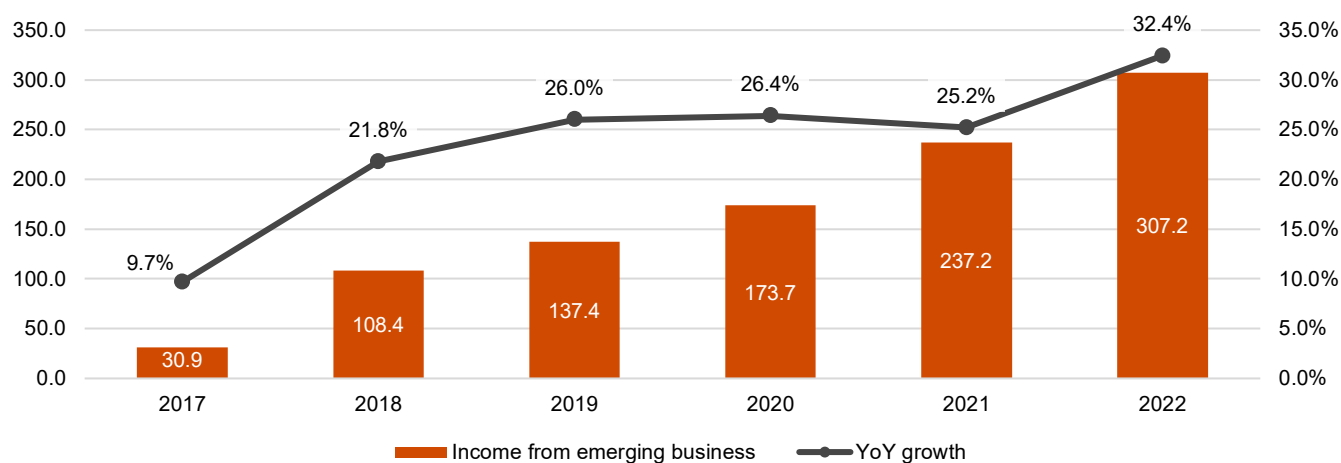
Source: Ministry of Industry and Information Technology of the People's Republic of China

Furthermore, emerging telecommunications services such as IPTV, Internet data centres, big data, cloud computing, and IoT have continued their strong growth trajectory in recent years. In the first three quarters of 2023, the revenue from these services reached 270 billion yuan,

representing a year-on-year increase of 19.8% and accounting for 21.1% of the total telecommunications service revenue. Among them, the year-on-year growth rates for cloud computing and big data were 35% and 37.1% respectively, while IoT business revenue grew by 24.1%. In 2022,

revenues from data centres, cloud computing, big data, and IoT services increased by 11.5%, 118.2%, 58%, and 24.7%, respectively compared to the previous year. From 2017 to 2022, the annual average growth rate of these emerging telecommunications services exceeded 20%.

Income from emerging business from 2017 to 2022 (Unit: RMB billion)



Source: Ministry of Industry and Information Technology of the People's Republic of China

*: Statistical system in 2018 was revised, with adjustments in relevant business scope.

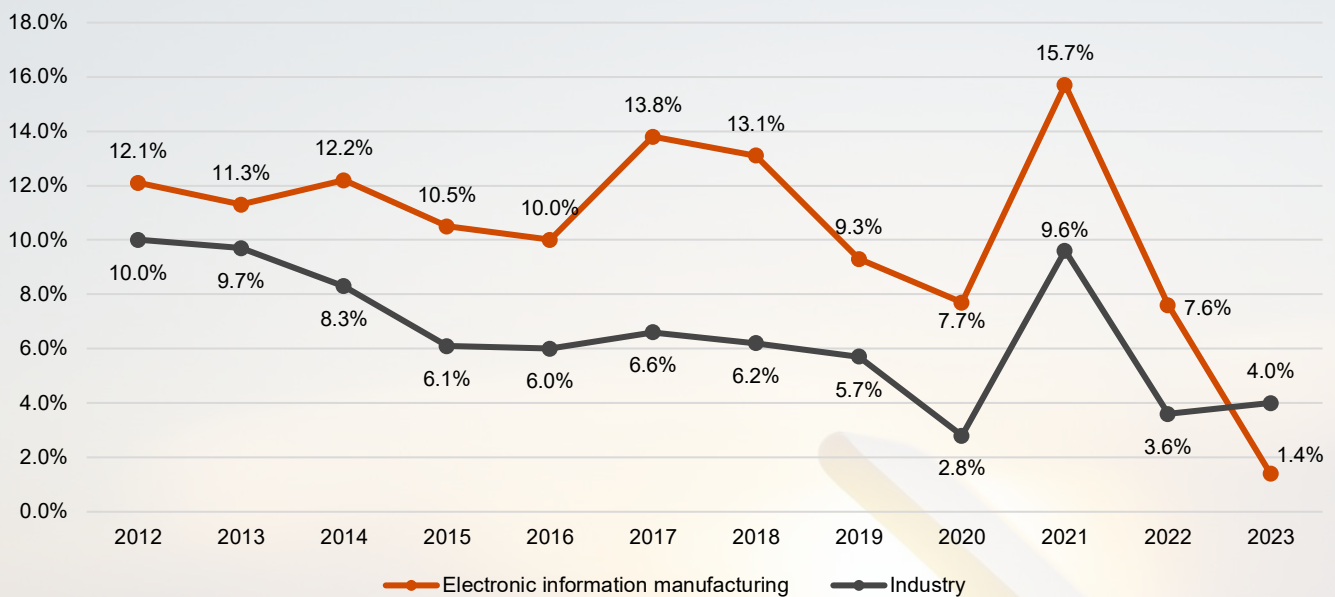
■ Negative growth in the electronic information manufacturing industry

According to the Ministry of Industry and Information Technology, in the first three quarters of 2023, companies in the electronic information manufacturing industry above a designated size achieved a business revenue of 10.7 trillion yuan, marking a year-on-year decrease of 3.4%. This contracts with the previous growth streak in business revenue. In 2022, the industry had realised a business revenue of 15.4 trillion yuan up 5.5% year-on-year, however, profits had declined

significantly, with a total profit of only 739 billion yuan, down 13.1% year-on-year. From 2012 to 2021, the growth rate of the electronic information manufacturing industry far exceeded the overall industrial added value growth rate. It was not until 2023 that its growth rate fell below the overall industrial added value growth rate. The slowdown of growth can be attributed to several factors, including:

- The global economic downturn, which has led to reduced demand in the electronic information manufacturing industry.
- Overcapacity in the industry, potentially leading to price declines and affecting the added value.
- Changes in domestic and international environments, such as policy adjustments and trade frictions, impacting production and sales.

Annual growth of electronic information manufacturing and industry form 2012 to Sep 2023

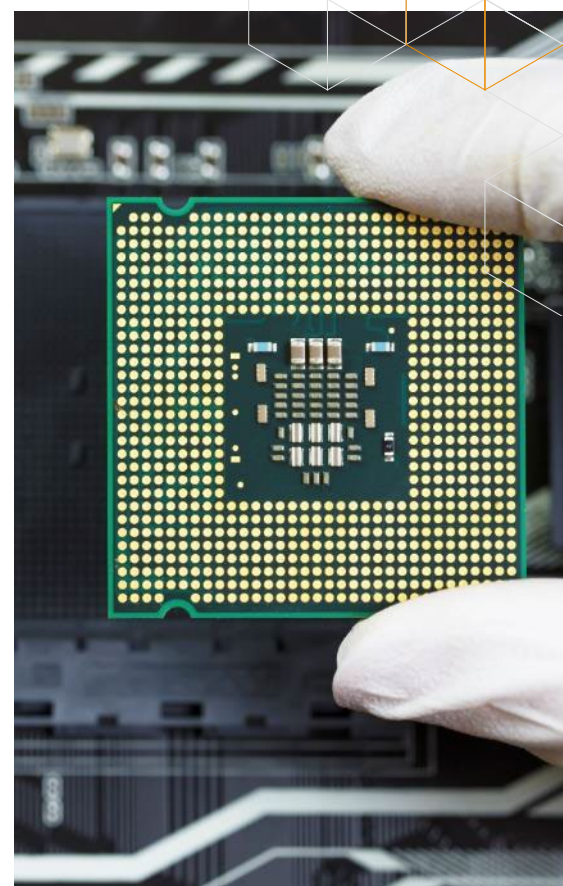


Source: Ministry of Industry and Information Technology of the People's Republic of China
 *: The 2023 data were calculated as of Sep 2023

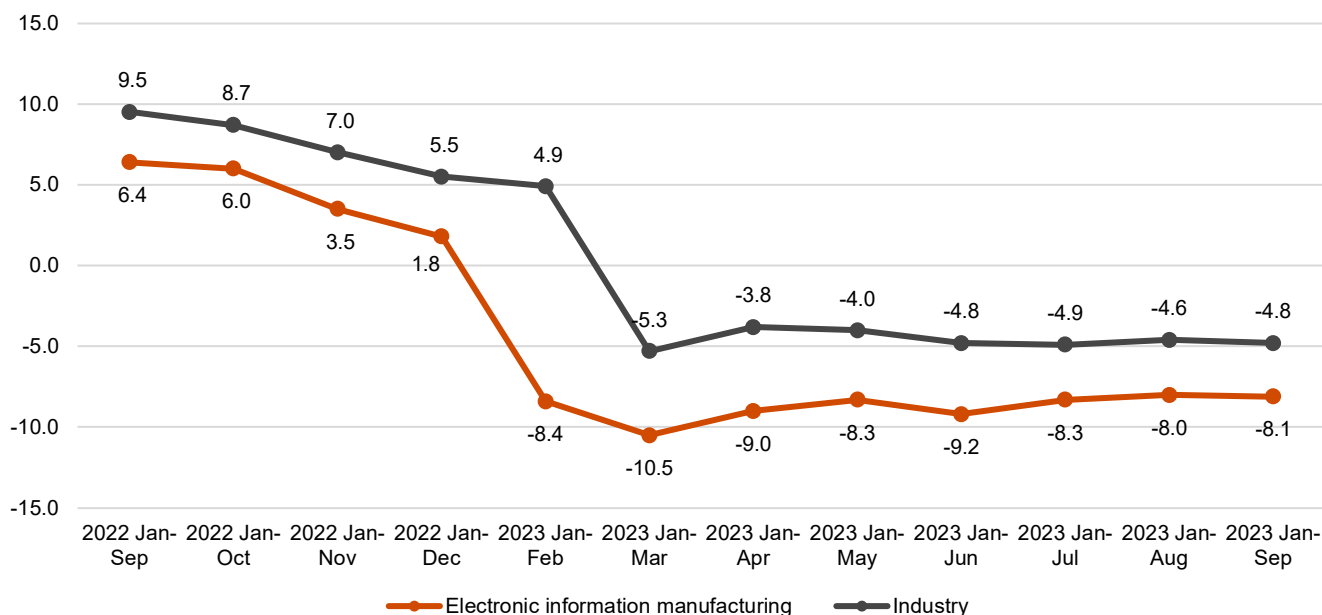
By examining the specific product performance in the electronic information manufacturing industry, we can observe the following trends in the first three quarters of 2023:

- The production of mobile phones was 1.094 billion units, showing a marginal year-on-year increase of 0.8%. Among which smart phones accounted for 792 million units, down 6.1% year-on-year.
- The production of microcomputer equipment amounted to 253 million units, down 21.1% year-on-year.
- The production of integrated circuits was 244.7 billion pieces, a decrease of 2.5% year-on-year.
- In 2022, the production of these categories all experienced varying degrees of decline: mobile phone production decreased by 6.2%, including an 8% decrease in smart phones; microcomputer equipment production fell by 8.3%; and integrated circuit production dropped by 11.6% year-on-year.

The electronic information manufacturing industry has been affected by weakened demand both domestically and internationally. Additionally, China holds a significant share in the export of electronic information products. According to customs statistics, in 2022, China exported 166 million laptops (out of a total domestic production of 434 million units), a year-on-year decrease of 25.3%; exported 822 million mobile phones (out of a total domestic production of 1.56 billion units), a decrease of 13.8% year-on-year; and exported 273.4 billion integrated circuits (out of a total domestic production of 324.2 billion pieces), a decrease of 12% year-on-year.



Cumulative YoY growth of electronic information manufacturing and industry exports (Unit: %)



Source: Ministry of Industry and Information Technology of the People's Republic of China



■ Rapid development of computing power infrastructure

The rise of AI, exemplified by the advent of large language model tools like ChatGPT, has also raised the bar for the infrastructure of the digital economy, particularly in terms of computing power infrastructure. This is a primary driver for computing power demand today and an important component of the new emerging information infrastructure.

By a narrow definition, computing power refers to the ability of a computer to perform specific computational functions and meet specific computational performance requirements. In a broader sense, as a new type of productivity in the digital economy era, computing power refers to the ability of clusters or centres of computing devices to process various types of information, often involving data storage, network transmission, information computation, and more.

According to the "High-Quality Development Action Plan for Computing Power Infrastructure" released by China's Ministry of Industry and Information Technology, computing power, integrating information computing power, network carrying capacity, and data storage capacity, all help to attain a new type of productivity that mainly serves society through computing power infrastructure.

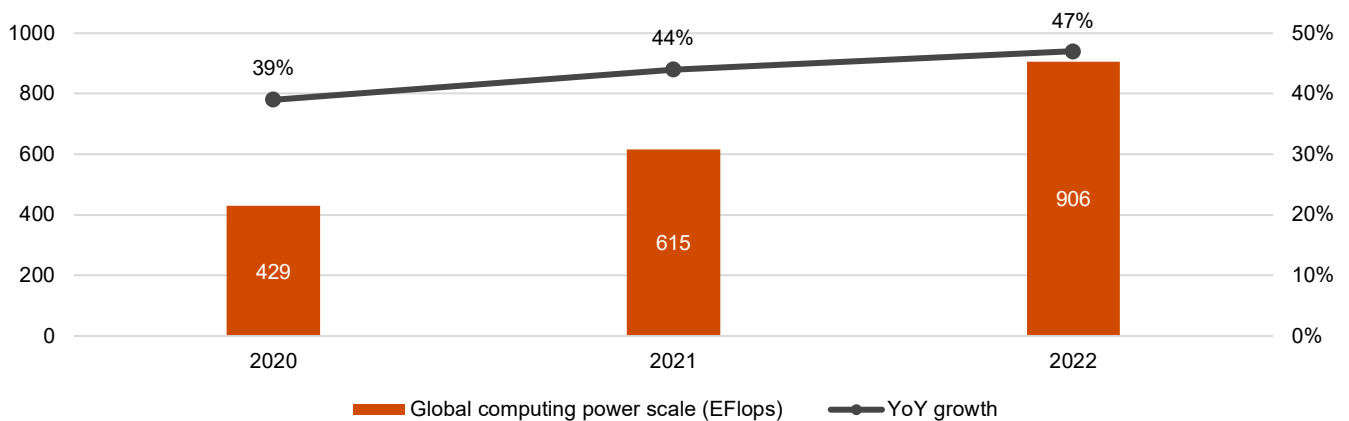
Computing power infrastructure is defined as the main carrier providing computing power services to society, an important part of the new type of information infrastructure. It is designed to enhance collaborative innovation in computing, networking, storage, and applications. The computing power industry encompasses upstream industries consisting of facilities, equipment, software suppliers, and network operators; midstream industries consisting of basic telecommunications companies, and third-party data centre service and cloud computing providers; and downstream industries including internet companies, industrial enterprises, and various industry users.

Recent research by Inspur Group (or Langchao Group, an IT conglomerate in the Chinese mainland focusing on cloud computing, big data, key application hosts, servers, storage, artificial intelligence, and ERP) in collaboration with International Data Corporation (IDC) examined fifteen major economies across five continents. The research findings show that the level of computing power, as indicated by the computing power index, has a significant positive correlation with a country's GDP and the development level of its digital economy. The study

found that, on average, a 1% increase in the computing power index corresponds to a growth of 0.35% in the digital economy and 0.18% in GDP. This underscores the importance of computing power infrastructure in driving economic growth and digital transformation.

In the future, computing power infrastructure in China and globally will continue to develop rapidly. The China Academy of Information and Communications Technology estimates that by 2025, the scale of China's core computing power industry will exceed 4.4 trillion yuan, with the associated industry scale reaching 24 trillion yuan. As of the end of 2022, the total global computing power reached 650 EFLOPS, with general computing power at 498 EFLOPS, intelligent computing power at 142 EFLOPS, and supercomputing power at 10 EFLOPS. Intelligent computing power accounted for 21.9% of the total. The shares of the United States, China, Europe, and Japan in the global computing power scale were 34%, 33%, 17%, and 4%, respectively in 2022. Meanwhile, IDC predicts that the global AI computing market is expected to grow from \$19.5 billion in 2022 to \$34.7 billion in 2026.

Global computing power scale from 2020 to 2022



Source: China Academy of Information and Communications Technology



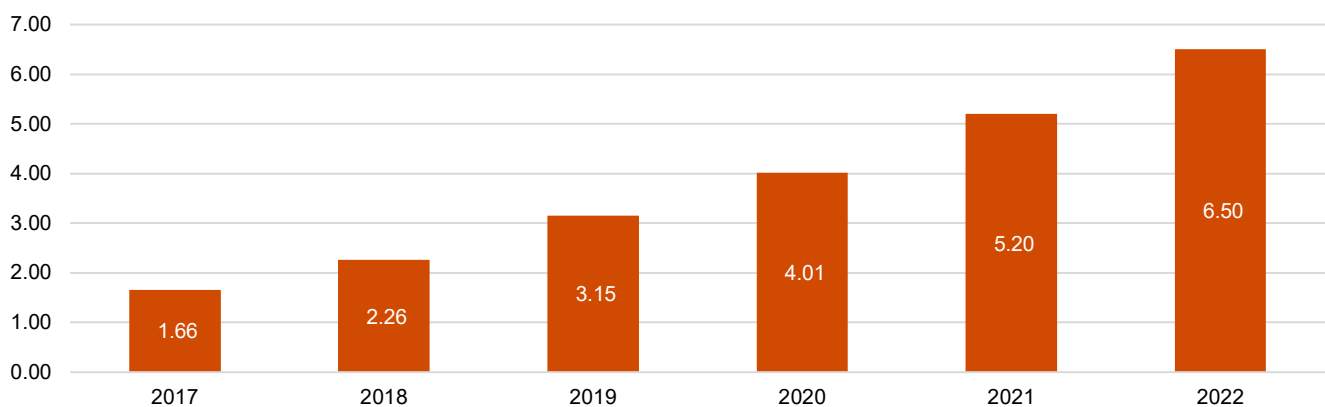
According to the "Digital China Development Report (2022)" published by the Central Cyberspace Administration, the construction of computing power infrastructure in China has entered a comprehensive phase, with the scale of infrastructure growing rapidly. China currently ranks second globally in terms of operational data centre computing power, which amounts to over 180 EFLOPS. Meanwhile, the construction of eight national computing power hubs is in an advanced

implementation phase, with over 60 new data centre projects underway.

China has emerged as one of the most advanced nations worldwide in terms of supercomputing development. In 2022, China was home to 162 of the top 500 supercomputers in the world, maintaining the top spot in total quantity. In 2022, the total scale of data centre racks in China exceeded 6.5 million standard racks, with an average annual growth of over 30% over five years. Data centre racks are

standardised frameworks used to install and arrange computer equipment in data centres, housing IT equipment including servers, storage devices, and network equipment. They are crucial for the operation of modern data centres, as they help in the efficient use of space, easy access to equipment, and effective cable management.

Total number of switchboards in the data centres in China from 2017 to 2022 (Unit: by million racks)



Source: China Academy of Information and Communications Technology

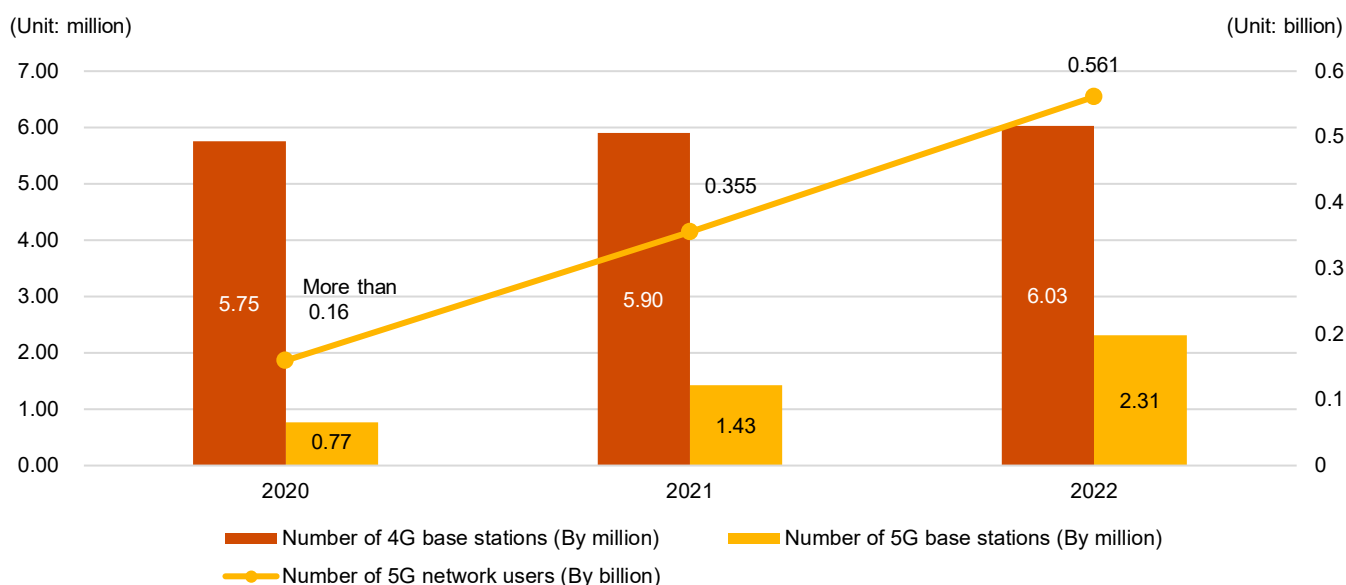


The remarkable development of China's computing power infrastructure has positioned the country as one of the major global leaders in this field. Several factors have attributed to this rapid progress. Firstly, there has been a significant improvement in the scale and capacity of the country's digital infrastructure in recent years. For example, rapid development in mobile communication networks, global leadership in the construction and

promotion of 5G networks, and fast-growing data resources have all contributed to the development of computing power infrastructure. According to statistics from the Central Cyberspace Administration, as of the end of 2022, China had cumulatively built and opened 2.312 million 5G base stations, serving 561 million 5G users and accounting for more than 60% of the global total. Furthermore, the scale of China's data resources has grown at

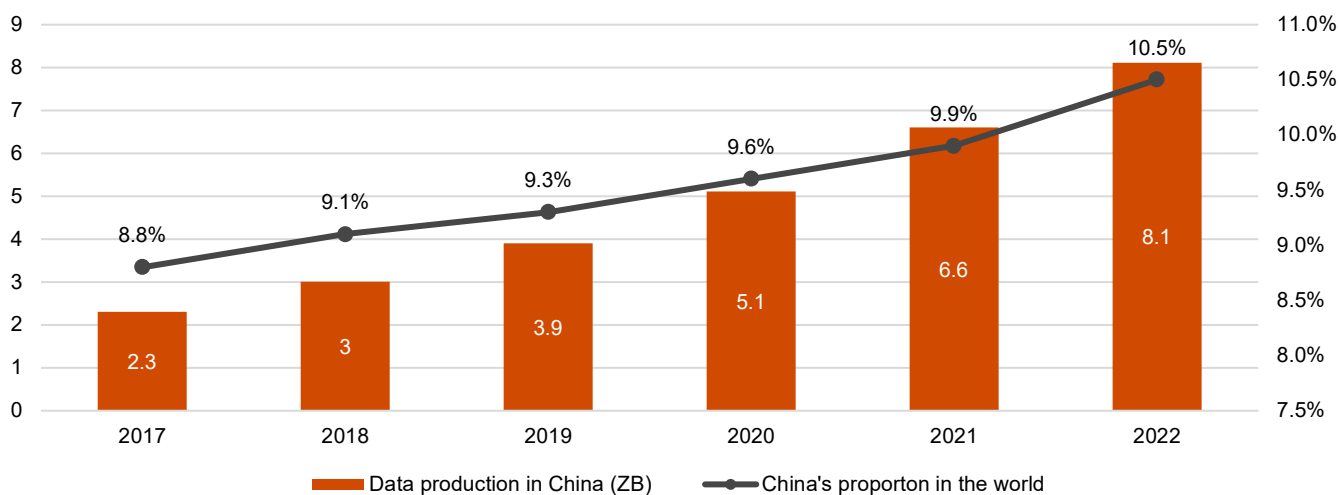
an accelerated pace. In 2022, the data output reached 8.1 ZB (zettabytes), a year-on-year increase of 22.7%, accounting for 10.5% of the worldwide data output and ranking second in the world. As of the end of 2022, data storage volume reached 724.5 EB (exabytes), with a year-on-year increase of 21.1%, accounting for 14.4% of the total global data storage volume.

Scale of mobile communication base stations and 5G users in China from 2020 to 2022



Source: Ministry of Industry and Information Technology of the People's Republic of China

Data production in China and its global proportion from 2017 to 2022



Source: China Academy of Information and Communications Technology, Chinese Academy of Cyberspace Studies

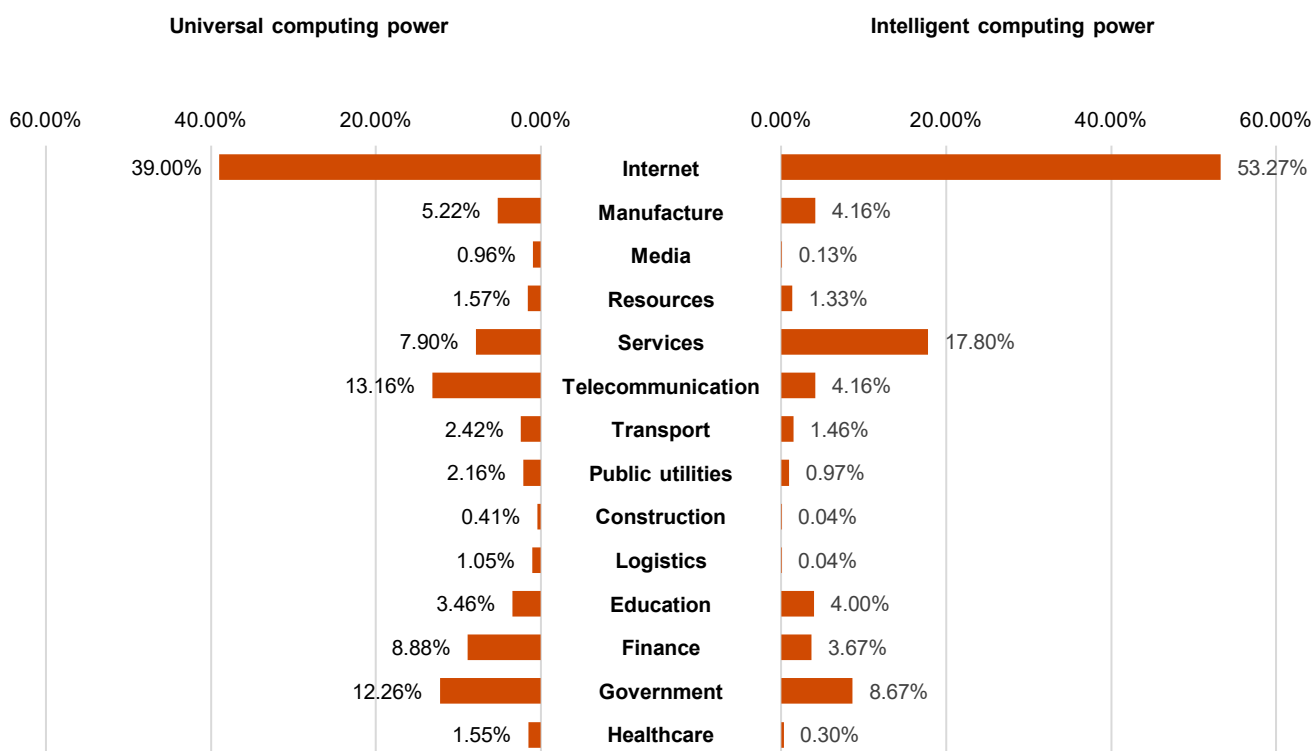
At the same time, Chinese telecommunications and technology companies are rapidly developing their service capabilities by offering cloud services and big data solutions. Additionally, the government places high importance on technological innovation and the development of the digital economy, leading to substantial investments in computing power infrastructure. For example, in October 2023, the Ministry of Industry and Information Technology, along with five other government departments, jointly issued the "High-Quality Development Action Plan for Computing Power Infrastructure" (hereinafter referred to as "the Plan"). The objective of the Plan is to strengthen the collaborative innovation in computing, network, storage, and applications, in order to promote the high-quality development of computing power infrastructure, and fully leverage computing power to drive the digital economy.

The "Plan" sets out the following targets for 2025:

- **In terms of computing power:** The computing power scale in China is expected to exceed 300 EFLOPS in 2025, compared to 180 EFLOPS in 2022; globally, this figure was around 906 EFLOPS in 2022, with a growth rate of 47%.
- **In terms of carrying capacity:** Direct network transmission between national hub node data centre clusters is expected to achieve no more than 1.5 times the theoretical latency. The coverage rate of the Optical Transport Network (OTN) in key application locations should reach 80%. Backbone networks and metropolitan area networks should fully support IPv6, and the use of innovative technologies like SRv6 should account for 40% in 2025.

- **In terms of storage capacity:** The total storage volume is projected to exceed 1800 EB, with advanced storage capacity accounting for more than 30%. The disaster recovery coverage rate for core and critical data in key industries should reach 100% by 2025.
- **In terms of application empowerment:** The scope of applications is on track to expand further in industries such as industrial, finance, health, transportation, energy, and education, significantly increasing the penetration rate of computing power. Currently, the application of computing power in China is mainly observed in the internet sector, while other sectors and industries are still in their early stages of development.

Distribution of computing power applications in various industries in China



Source: China Academy of Information and Communications Technology, IDC

■ The "2522" framework and the future development direction of China's digital economy.

The rapid development of China's digital economy is largely due to the emphasis and support of major national policies, in addition to market demand. The 20th National Congress held in mid-October 2022 proposed establishing a modern industrial system, with a continued focus on the real economy for economic development. It also seeks to promote new industrialisation efforts, and accelerate the building of a strong, quality manufacturing base for the country, including national aerospace industry, transportation, telecom, and "digital infrastructure," etc across the country.

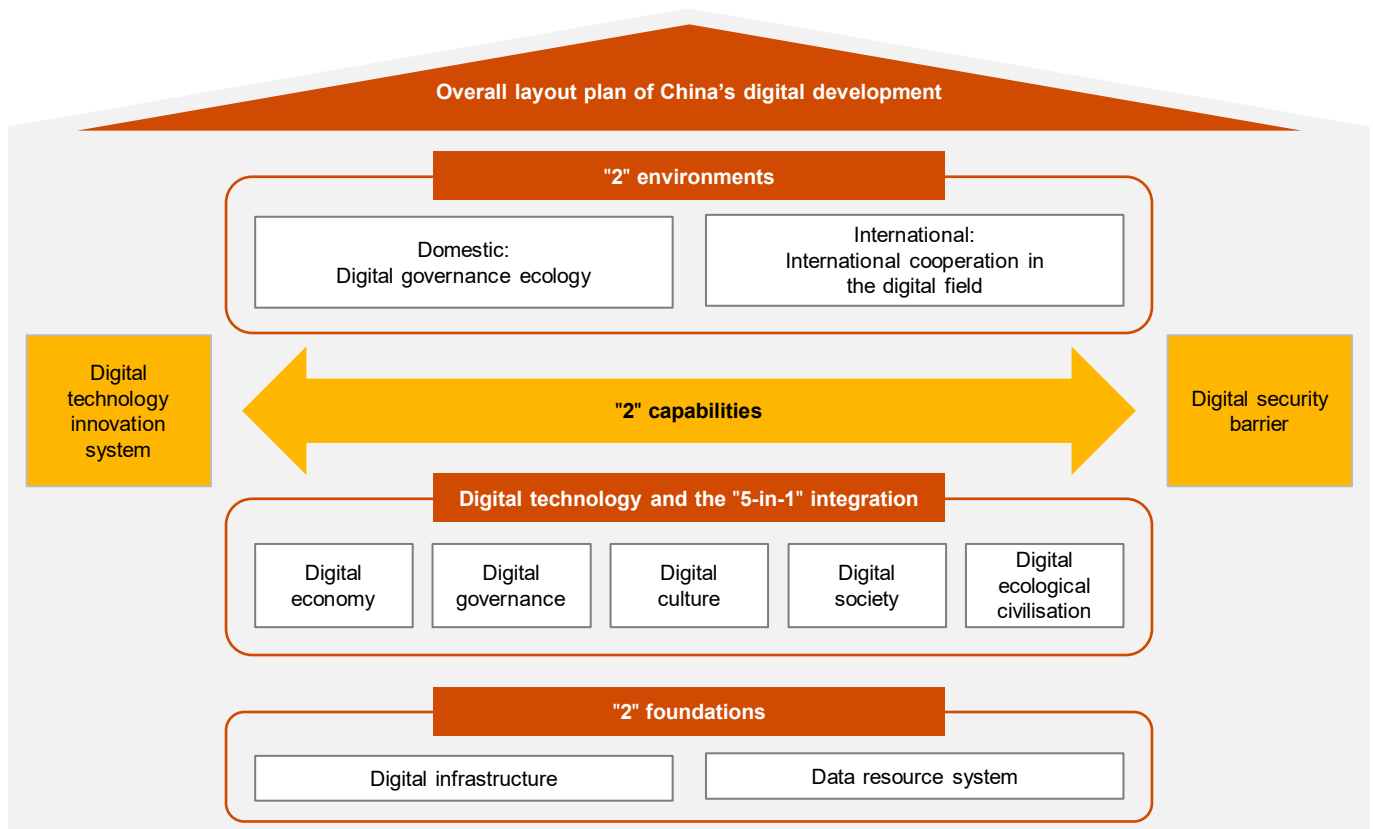
The importance of telecom and digital networks was elevated to the same level as manufacturing, aerospace, and transportation. The proposal also stated its goal to "accelerate the development of the digital economy, promote the deep integration of the digital economy within the real economy, and create internationally competitive digital industry clusters."

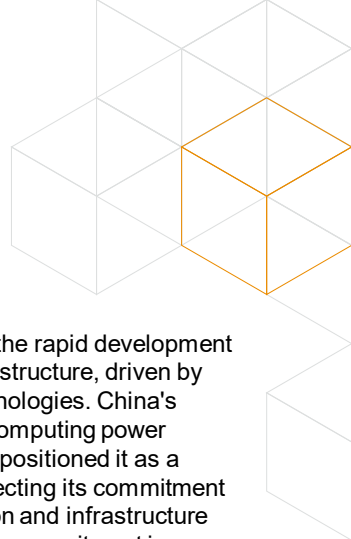
A few months later, in February 2023, the Central Committee and the State Council released the "Overall Layout Plan for the Construction of a Digital China" (hereinafter referred to as "the Plan"). The Plan proposes that by 2025, significant progress should be made in the construction of China's digital economy to attain a global leading position in terms of digital development. It adds that the systematic layout of the construction of China's digital economy should be more scientific and holistic, with more coordinated and comprehensive digital development efforts in the fields of economy, government, culture, society, and sustainability, strongly supporting the comprehensive construction of what the government defines as a modern socialist country. This specifically includes:

- Efficiently interconnecting the digital infrastructure;
- Accelerating the scale and quality of data resources;

- Effectively releasing the value of data elements;
- Significantly improving the level of digitalisation and intelligence of government services;
- Reaching a new level of digital cultural construction;
- Making significant achievements in precision, inclusiveness, and convenience of the digital society;
- Progressing in the construction of a digital ecological civilisation;
- Making major breakthroughs in digital technology innovation and leading in global application innovation;
- Comprehensively enhancing digital security assurance capabilities;
- Perfecting digital governance systems and opening new prospects in international cooperation in the digital field.

Overall layout of China's digital development ("2522")





The Plan outlines that the construction of China's digital economy based on the "2522" overall framework:

- The first "2" refers to the "two foundations" of digital infrastructure and data resource systems.
- The "5" refers to the promotion of deep integration of digital technology with the "five-in-one" approach in economy, politics (governance), culture, society, and the construction of an ecological civilisation.
- The second "2" refers to the strengthening of "two capabilities" of the digital technology innovation system and digital security barriers.
- The last "2" refers to the optimisation of the "two environments" of digital development, both domestically and internationally.

Accelerating the construction of China's data resource system includes establishing national data management systems and mechanisms, and data coordination management institutions at all levels. It involves the aggregation and utilisation of public data in important fields such as public health, science and technology, and education in national data resource repositories. It also encompasses unlocking the potential value of commercial data, establishing a data property rights system, conducting research on data asset valuation, and establishing a mechanism for data elements to participate in distribution based on their value contribution.

Finally, this article provides a comprehensive overview of the substantial progress made in China's digital economy, highlighting its resilience and dynamic growth despite global challenges. In 2022, China's digital economy reached a remarkable scale of 50.2 trillion yuan, accounting for 41.5% of the country's GDP. This growth is underpinned by innovation and a strong patent ecosystem, with 1.273 million valid patents registered in core digital economy industries by the end of 2022.

In addition, the article outlines the significant contributions of various sectors, including the electronic information manufacturing industry, software services, and the industrial internet core industry. However, it also acknowledges the challenges faced by the electronic information manufacturing industry, which saw a decline in 2023 due to reduced global demand and other macroeconomic factors.

A key highlight is the rapid development of computing infrastructure, driven by the rise of AI technologies. China's advancement in computing power infrastructure has positioned it as a global leader, reflecting its commitment to digital innovation and infrastructure development. This commitment is further evident in the government's proactive role in promoting the growth of the digital economy through significant national policies.

The article also delves into the "2522" framework, a strategic plan for the future development of China's digital economy emphasising the integration of digital technology with various sectors of the economy, enhancing the country's digital infrastructure, and optimising domestic and international environments for digital development.

In conclusion, China's digital economy showcases a robust and multifaceted growth trajectory, driven by technological innovation mostly conducted by enterprises, supportive government policies, and a forward-thinking approach to digital integration. China's journey towards a comprehensive and advanced digital economy, as outlined in this article, is a testament to its strategic foresight and adaptability in the face of global economic shifts.



In this context, the accelerated construction of China's **digital infrastructure** includes:

- The development of 5G networks
- Gigabit optical networks
- IPv6 scaling and application
- Mobile IoT
- Beidou scaling and application



Computing power infrastructure encompasses:

- General data centres
- Supercomputing centres
- Intelligent computing centres
- Edge data centres





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