



AN ANALYSIS OF CHINA’S ECONOMIC SITUATION AND THE IMPLICATIONS FOR THE GLOBAL MINERALS AND BASE METALS MARKETS

Introduction

China is the second-largest economy globally in nominal terms and holds the top spot in purchasing power parity (PPP). This remarkable economic stature is reflected in its immense consumption of resources, with the country using more than 50% of the world’s base metals output. As a global manufacturing and production powerhouse, China’s policies and economic trajectory significantly influence global markets. To understand the future dynamics of the minerals and base metals industry, it is crucial to analyze China's economic and industrial policies, demographic trends, and geopolitical environment, and how these factors interplay to shape the country's demand for these essential materials.

This Insight Paper has been developed to assist member countries in understanding the logic behind China’s growth over the past years to become an economic powerhouse, dissecting the current challenges China’s economy is experiencing, assessing the development prospects, and looking at their implications for the global base metals market.

The Paper is organized into 5 sections the introduction, China’s economic growth since 1978, current economic and geopolitical challenges, future prospects for China’s economic development, and conclusions. The impact and implications for the global base metals market will be commented on in all the chapters.

In the Paper, various economic, social, and political factors will be observed. These include monetary and fiscal policies, economic initiatives, export markets and global supply chains, demographic dividends and challenges, real estate crisis, domestic consumption and investment, geopolitical environment and trade relations, renewable energy and electric vehicles, policy outlook, and industry implications.

China's government has historically employed accommodative monetary and fiscal policies to fuel its economic growth. These policies have included lowering interest rates, reducing reserve requirements for banks, and implementing substantial fiscal stimulus measures to boost investment and consumption. The primary goal has been to sustain high levels of economic activity and mitigate the impacts of economic slowdowns. For the minerals and base metals industries, such policies are particularly significant because they often lead to increased infrastructure projects, real estate

development, and industrial production—all of which drive demand for metals such as steel, aluminium, copper, and zinc.

In recent years, China has launched several initiatives such as the Belt and Road Initiative (BRI) and Made in China 2025, which are geared towards enhancing infrastructure and technological capabilities. These initiatives require vast amounts of raw materials, thereby bolstering the demand for base metals. The BRI, for instance, involves the development of ports, railways, highways, and other infrastructure projects across Asia, Europe, and Africa, necessitating substantial quantities of steel and other construction materials.

China's role as a global manufacturing hub means that it has a substantial export market for goods. This position has been a critical factor in its sustained demand for minerals and base metals. Products ranging from electronics to automobiles, machinery, and consumer goods are produced in China and exported worldwide. The production of these goods requires a steady supply of base metals, making China a pivotal player in the global metals market.

Moreover, China's integration into global supply chains and value chains has reinforced its demand for raw materials. The country imports raw materials, adds value through manufacturing, and exports finished products. This interconnectedness means that disruptions to China's economy can have ripple effects throughout the global supply chain. For instance, any slowdown in Chinese manufacturing due to economic policies or external factors such as trade tensions can lead to decreased demand for base metals globally.

China's demographic dividend emerged in the late 20th century, driven by declining fertility rates and increased life expectancy, partly due to the one-child policy. This created a large working-age population with fewer dependents fuelling rapid industrialization and urbanization. A young, educated workforce boosted productivity and economic growth, particularly in manufacturing and export-led industries. The demographic structure enabled high savings and investment rates, facilitating infrastructure development and poverty reduction. This period was crucial for China's transformation into a major global economy, significantly improving living standards and expanding the middle class.

One of the significant challenges facing China is its demographic shift. The population is aging rapidly, and the birth rate is declining. This demographic trend poses several economic challenges, including a shrinking labor force, increased healthcare costs, and a potential decrease in consumer spending. For the minerals and base metals industries, an aging population could result in lower demand in the long term as economic growth slows and construction and manufacturing activities decline.

However, the Chinese government is actively seeking ways to mitigate these effects. Policies to boost birth rates, extend retirement ages, and increase productivity through technological advancements are being considered. The success of these measures will be crucial in determining the future demand for base metals. If China can effectively address its demographic issues, it may sustain its economic growth and, consequently, its demand for minerals and metals.

China's real estate sector has been a significant driver of its economic growth. However, the sector is currently facing a crisis characterized by high levels of debt, overbuilding, and falling property prices. Major property developers like Evergrande have faced financial difficulties, leading to concerns about the stability of the sector and its broader economic implications.

The real estate sector is a major consumer of base metals, particularly steel and aluminium. A slowdown in this sector could reduce the demand for these materials. However, the Chinese government has shown a willingness to intervene and stabilize the sector. Measures such as providing liquidity support to developers, easing mortgage restrictions, and promoting urbanization can help revive the real estate market. The extent and effectiveness of these interventions will significantly influence the future demand for base metals in China.

Despite being a major player in global trade, domestic consumption in China has been relatively anaemic. Factors such as income inequality, high savings rates, and economic uncertainty have contributed to subdued consumer spending. Additionally, scepticism about investment prospects due to regulatory changes, trade tensions, and geopolitical uncertainties has also affected business confidence.

The Chinese government recognizes the need to boost domestic consumption to achieve sustainable economic growth. Policies aimed at increasing household incomes, improving social safety nets, and promoting consumer spending are being implemented. For the minerals and base metals industries, a rise in domestic consumption could drive demand for consumer goods, electronics, and automobiles, all of which require substantial amounts of base metals.

China's geopolitical environment and its trade relations with other countries play a crucial role in shaping its economic policies and demand for base metals. Trade tensions with the United States and other Western countries have led to uncertainties in the global market. Tariffs, trade barriers, and geopolitical conflicts can disrupt supply chains and affect the demand for minerals and metals.

China is actively seeking to diversify its trade relations and reduce its dependency on traditional markets. Efforts to strengthen ties with countries in Africa, Latin America, and Asia are part of this strategy. Additionally, China's focus on developing domestic capabilities in critical industries, such as semiconductors and renewable energy, should influence the demand for specific base metals like lithium, cobalt, and nickel, which are essential for battery production and green technologies.

China is a global leader in renewable energy production and the adoption of electric vehicles (EVs). The country's commitment to reducing carbon emissions and combating climate change has led to significant investments in renewable energy infrastructure, including wind, solar, and hydroelectric power. These initiatives require large quantities of metals such as copper, aluminium and rare earth elements.

The EV market in China is booming, with the government providing substantial incentives for EV production and adoption. China is also a major producer of EV batteries, which require metals like lithium, cobalt, and nickel. The growth of the renewable energy and EV sectors is expected to drive sustained demand for these critical base metals.

China's economic policies will continue to play a pivotal role in shaping the global minerals and base metals market. Policymaking in areas such as infrastructure development, urbanization, technological innovation, and environmental sustainability will directly impact the demand for base metals.

Infrastructure Development: Continued investment in infrastructure projects, both domestically and through initiatives like the BRI, will sustain demand for construction materials and base metals.

Urbanization: Policies promoting urbanization and the development of smart cities will drive demand for metals used in construction, transportation, and energy systems.

Technological Innovation: Investments in advanced manufacturing, robotics, and artificial intelligence can enhance productivity and efficiency, potentially leading to higher demand for high-quality metals and alloys.

Environmental Sustainability: China's commitment to reducing carbon emissions and promoting green technologies will boost demand for metals used in renewable energy systems and EVs.

China's role in the global minerals and base metals industry is irreplaceable, given its economic size, population, and integration into global supply chains. While there are challenges such as an aging population, real estate sector issues, and geopolitical tensions, the fundamentals of China's economy remain robust. The country's policies will continue to drive demand for base metals, with significant implications for global markets.

For stakeholders in the minerals and base metals industries, understanding China's economic policies and trends is crucial. While uncertainties exist, the overall outlook suggests that China will remain a dominant force in the market, and its policies will shape the future landscape of the global base metals industry. The ongoing need for infrastructure, urbanization, technological advancements, and environmental sustainability will ensure that China's appetite for minerals and base metals remains substantial for the foreseeable future.

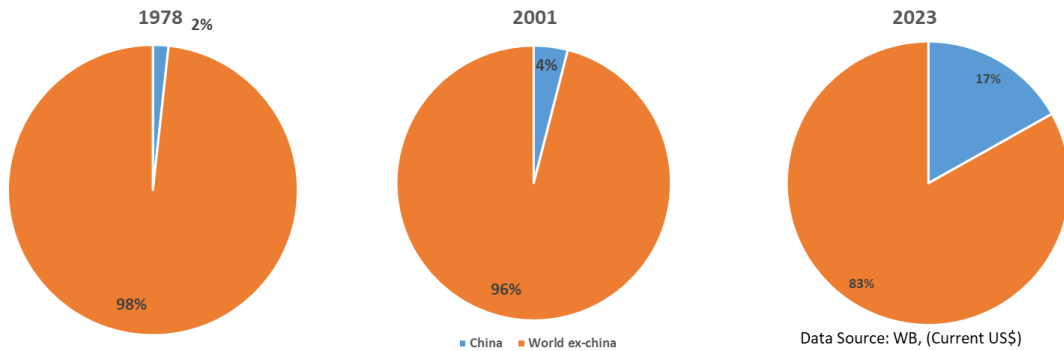
Comments or Questions

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China's Economic Growth Since 1978

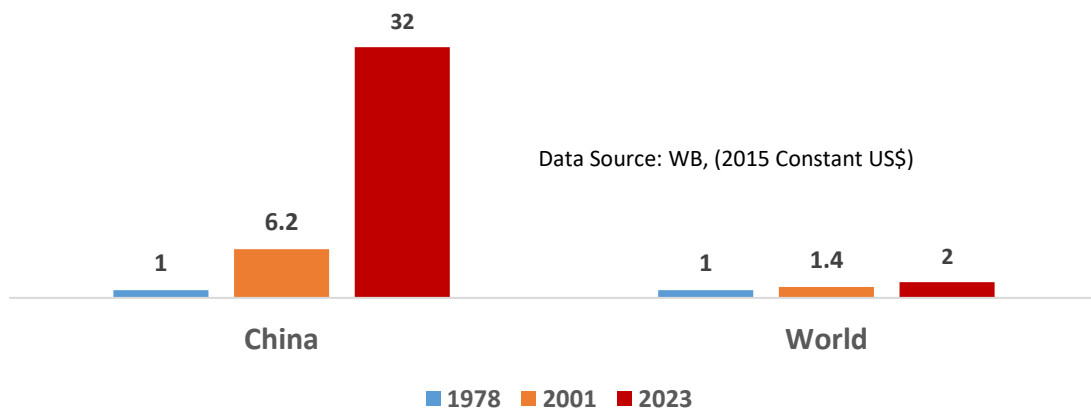
GDP and Income Growth

China's emergence as a world economic power started in 1978 when it opened its door to the outside world marked by the abandonment of the centrally controlled and planned economic development model and the adoption of opening-up and reform policies. China's integration into the world economic system reached its heyday after its access into the World Trade Organization in 2001. These two milestone events laid a solid foundation for China's economic magnitude today as the world's second-largest economy in nominal terms and the largest economy in real terms. Gross Domestic Product (GDP) in China reached US\$19.79 trillion in 2023, which is almost 119 times and 13 times of that in 1978 and 2001 respectively. In contrast, the world economy in 2023 measured by GDP in nominal terms grew by 12 times and 3 times from that in 1978 and 2001. China's share of the world economy increased to 17% in 2023 from 4% and 2% in 2001 and 1978 respectively.

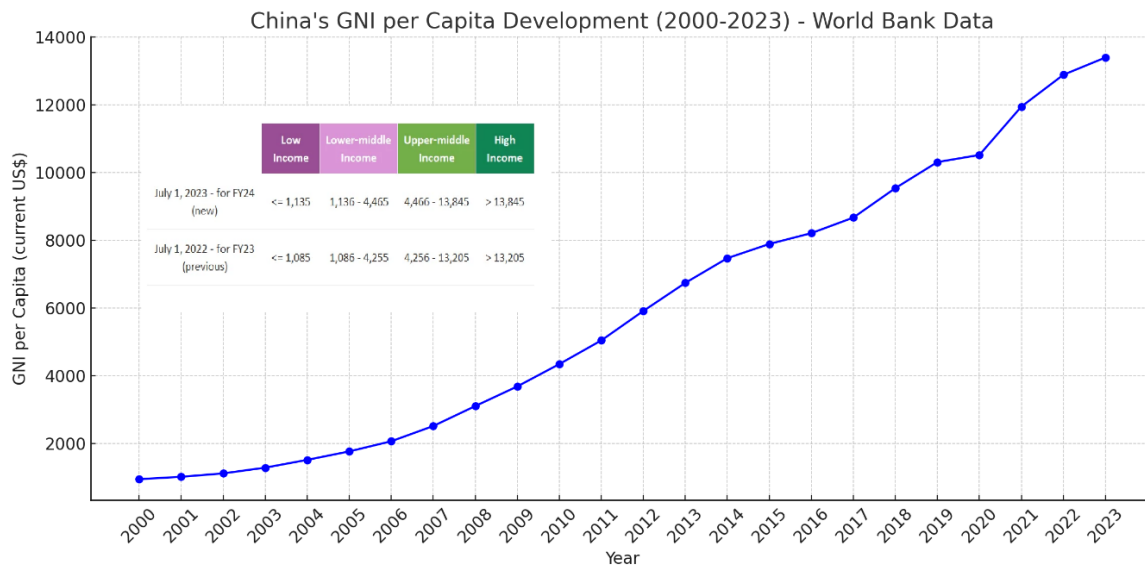


In 1978, China's per capita GDP measured in constant 2015 US\$ was US\$381.1 which was only 6.55% of the then-world average measured using the same parameters. After 20 years or so of opening up and reform, its per capita GDP reached US\$2,359.57, or 29.47% of the 2001 world average. The growth of China's per capita GDP accelerated after it joined the WTO in 2001. Data released by the World Bank show that the same figure for 2023 was US\$12,174 surpassing the world average of US\$11,567. China's per capita GDP is currently 31 times higher than it was 45 years ago, a growth that can only be considered highly impressive.

Per Capita GDP Change / China and World Average



The World Bank Group assigns the world's economies to four income groups: low, lower-middle, upper-middle, and high. China, until 1998, was a low-income country before it jumped to the low-middle group in 1999 and the upper-middle group in 2010.

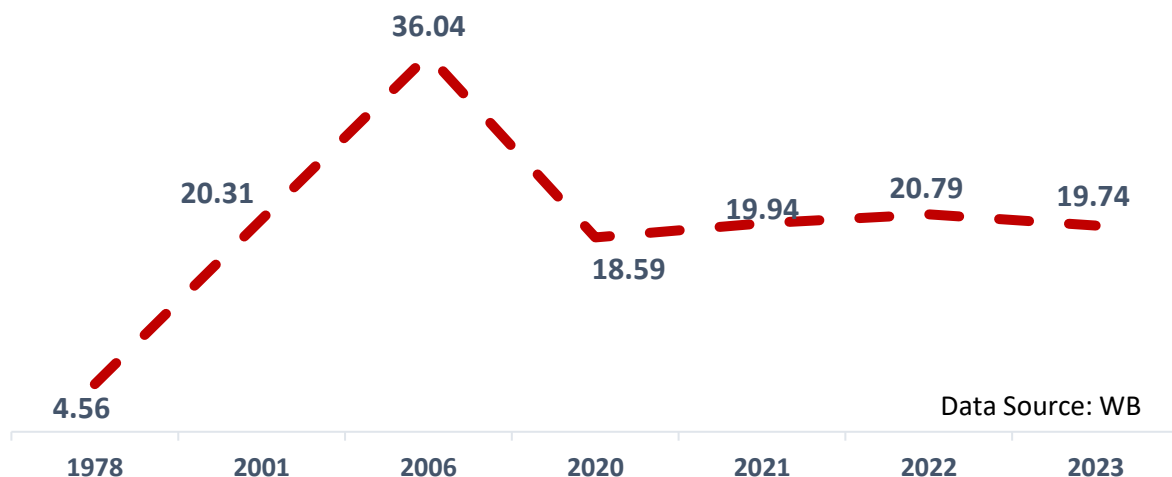


This rapid development has been driven by the three economic wagons of exports, investment, and consumption.

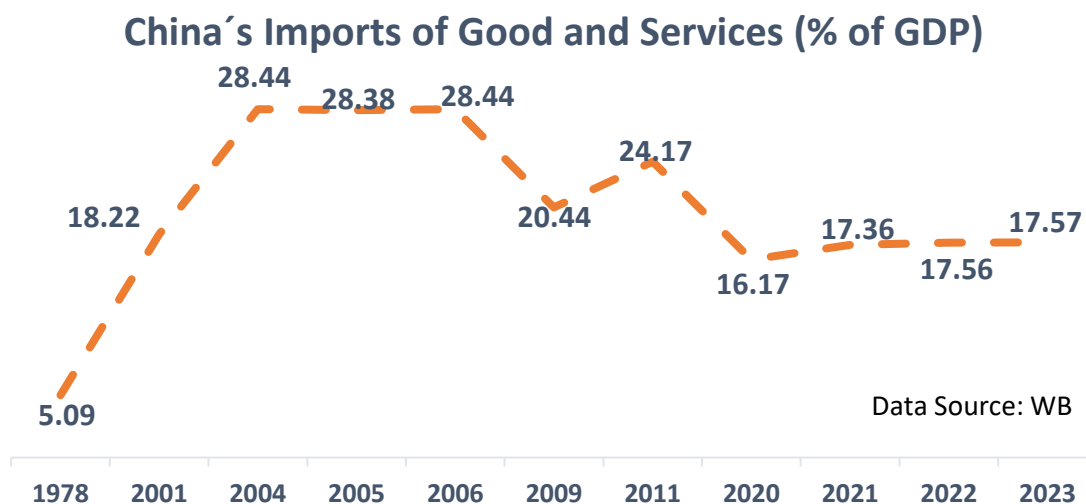
Imports and Exports

According to the World Bank, China's export sales were US\$3.51 trillion (current US\$) in 2023, accounting for 11.4% of the world's total export sales. The corresponding figures were 3.5% and 0.45% in 2001 and 1978 respectively. The international market has been providing strong support for China's economic growth even though its share of GDP has been decreasing following a peak in 2006. The gradual shrinkage and the stagnation of export sales' share of Chinese GDP can be attributed to the rise of emerging markets, increasing labour costs in China, China's efforts to adjust its economic structure, the deteriorating geopolitical environment and trade tensions.

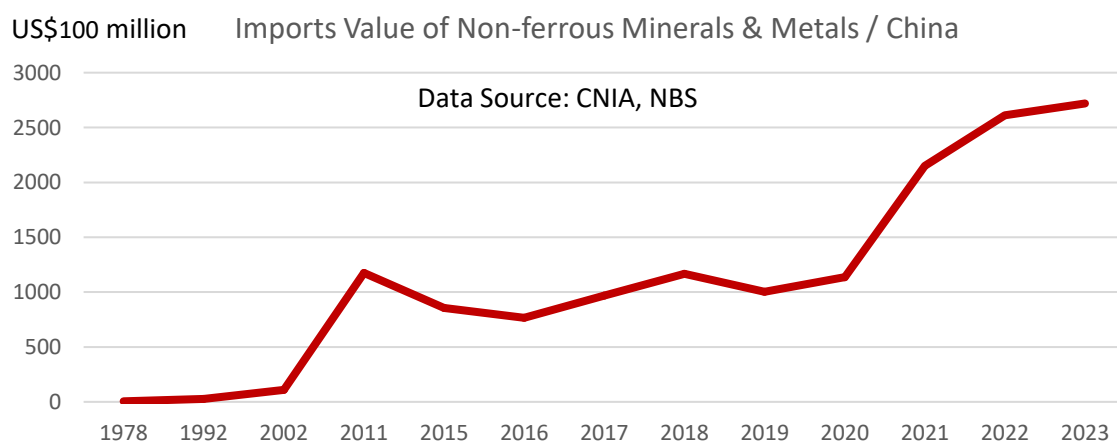
China's Exports of Good and Services (% of GDP)



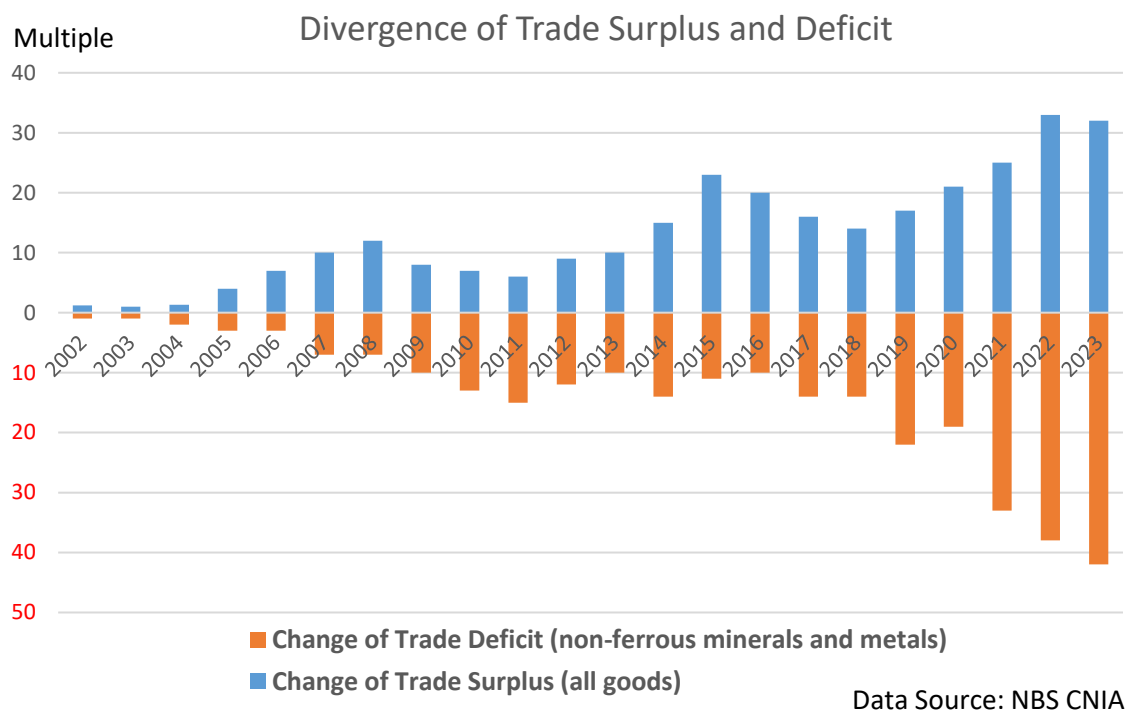
On the other hand, China’s import purchases stood at US\$3.13 trillion in 2023, accounting for 10.4% of the world total. The corresponding figures in 2001 and 1978 were only 3.2% and 0.5% respectively. In 1978, China spent 5.09% of its GDP purchasing goods and services from other countries. After 20 years of opening up and reform, its spending on imports rose to 18.22% of GDP in 2001 when China gained access to the WTO. After plateauing at above 28% in 2004-2006, the share took a deep dive in the lead-up to and during the aftermath of the 2007-2009 financial crisis before recovering to 24.17% in 2011. Thereafter, the import share of GDP continued to decline and dipped to between 16-18% in the 2020-2023 period. The lacklustre recovery from the COVID-19 pandemic, stagnating income growth, a debt-riddled housing market, and anaemic stock market all contributed to the dwindling share of imports in GDP.



In the context of non-ferrous minerals and metals, China is now the largest buyer in the world. When China opened its door to the world in 1978, it only imported US\$756 million worth of non-ferrous minerals and metals. This value fluctuated over the following years and confirmed its upward trend in the early 1990s when China reaffirmed to the world and its people that it was focused on economic development. One year after its accession into the WTO, the value of China’s import of non-ferrous minerals and metals rose sharply to over US\$10 billion. This was followed by a significant and steady increase in import values over time, with particularly sharp rises occurring after 2020. The value passed US\$270 billion in 2023, marking a dramatic escalation over the period shown in the graph below.

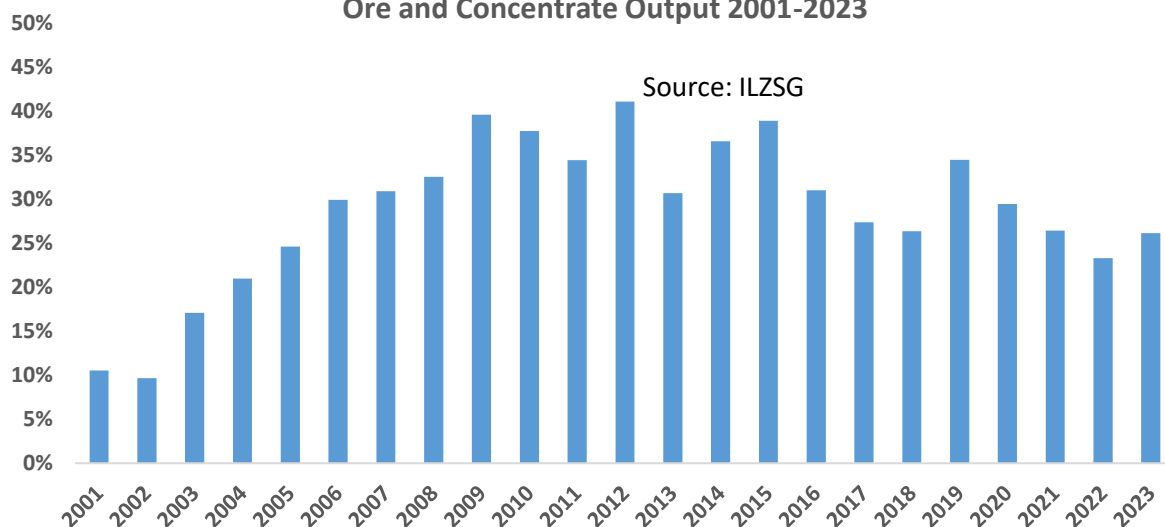


China has registered a trade surplus for goods in most of the past 45 years. Since it joined the WTO its trade surplus has rapidly expanded with only a transitory interruption ensuing from the global financial crisis. In 2015, its trade surplus was 23 times higher than that in 2002-2004. Suppressed by the rising tensions between major trading partners, its trade surplus narrowed in the following years before recovering in 2019. In 2020, China’s exports benefited from its successful control of the COVID-19 outbreak domestically and the disruptions wrought on other economies as a result of lockdowns in containing the spread of the virus. The trade surplus of US\$851 billion in 2022 was the highest figure in history. In contrast, China’s trade in non-ferrous minerals and metals has mainly been one of deficit since 1992. This deficit has expanded significantly with the deficits in 2023, 2022 and 2021 being 42, 38, and 33 times larger respectively than those in 2002-2004.



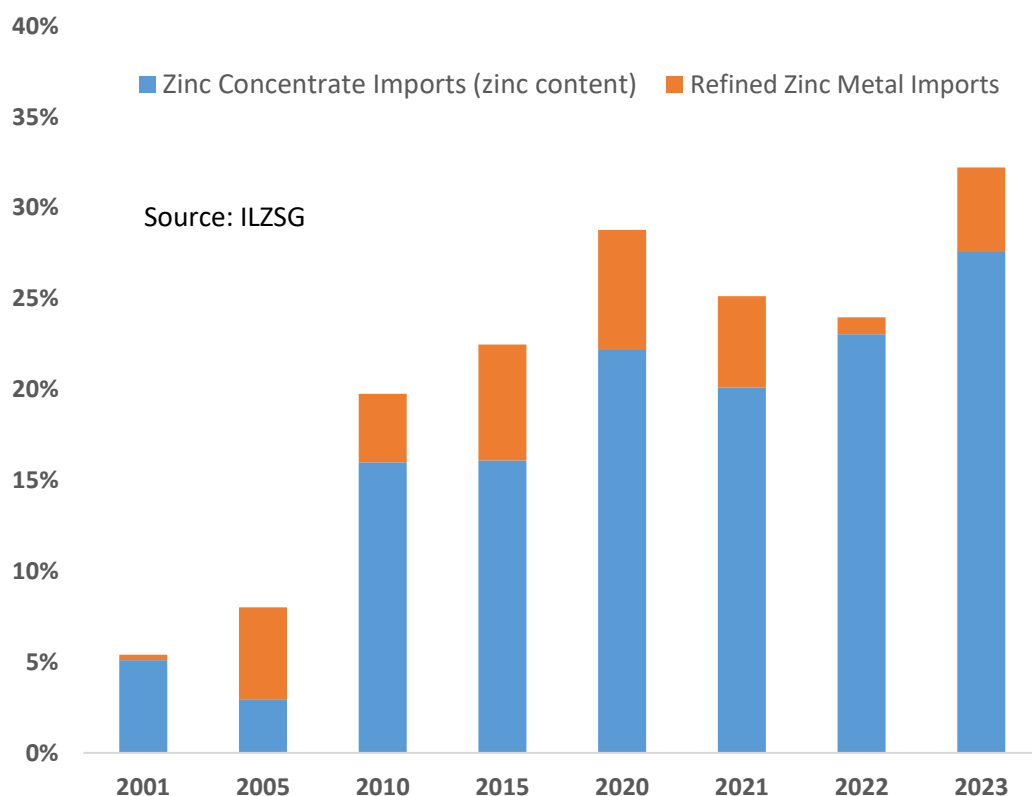
The divergence seen in the trade balances is driven by several factors. China's rapid industrialization and economic expansion have sharply pushed up the demand for non-ferrous minerals and metals in essential for sectors such as electronics, construction, and renewable energy. As domestic resources have become increasingly scarce and subject to stricter environmental regulations, China has had to rely more heavily on imports to meet this growing demand. Additionally, fluctuations in global commodity prices and recent supply chain disruptions, particularly during the COVID-19 pandemic, have escalated the cost of these imports, further widening the trade deficit. China’s strategic decision to secure long-term supplies of critical minerals for its high-tech industries, such as electric vehicles and renewable energy, has also contributed to the growing import reliance. Meanwhile, China’s strong export performance, driven by its dominant manufacturing base, continues to generate a substantial trade surplus, underscoring the country’s role as a global export powerhouse. However, the necessity to import vast quantities of raw materials to support this export-driven growth model has created a contrasting and growing trade deficit in non-ferrous minerals and metals.

China Imported a Significant Proportion of the World's ex-China Lead Ore and Concentrate Output 2001-2023



Over the period 2001 to 2023, China's role in the global lead mining industry became increasingly significant, not only through the exploitation of its domestic resources but also by driving demand for lead ores and concentrates on a global scale. As China's economy expanded rapidly, so did its industrial needs for metals including lead, which is essential in various sectors including batteries, construction, and electronics. This surge in demand led China to look beyond its borders to secure the necessary raw materials, positioning itself as a key player in the global lead market. Between 2004 and 2023, China's imports of lead ores and concentrates accounted for a substantial 20% to 40% of the total production outside of China. This consistent and significant purchasing power meant that a large portion of the global lead mining industry was effectively sustained by Chinese demand. Countries exporting lead ores and concentrates found a reliable and growing market in China, which, in turn, supported the expansion and stability of mining operations worldwide. Without China's demand, many of these mining activities might have struggled to maintain profitability or even viability, especially in regions where lead production is a critical component of the local economy. Moreover, China's influence on the global lead market extends beyond just raw material imports. By being the largest importer of lead ores and concentrates, China has also played a crucial role in shaping global lead prices and mining investments. Mining companies and exporting nations closely monitor China's industrial policies, economic health, and import patterns, as changes in Chinese demand can have immediate and profound impacts on global lead markets. In essence, China's integration into the global lead supply chain has made it indispensable to the world lead mining industry. Its demand has not only provided substantial financial support to mining operations outside its borders but has also driven innovation and efficiency in lead production, influencing both the scale and direction of global mining investments. This dominant position underscores China's broader role in the global economy, where its resource needs significantly affect global markets and industries.

China's Zinc Imports 2001-2023

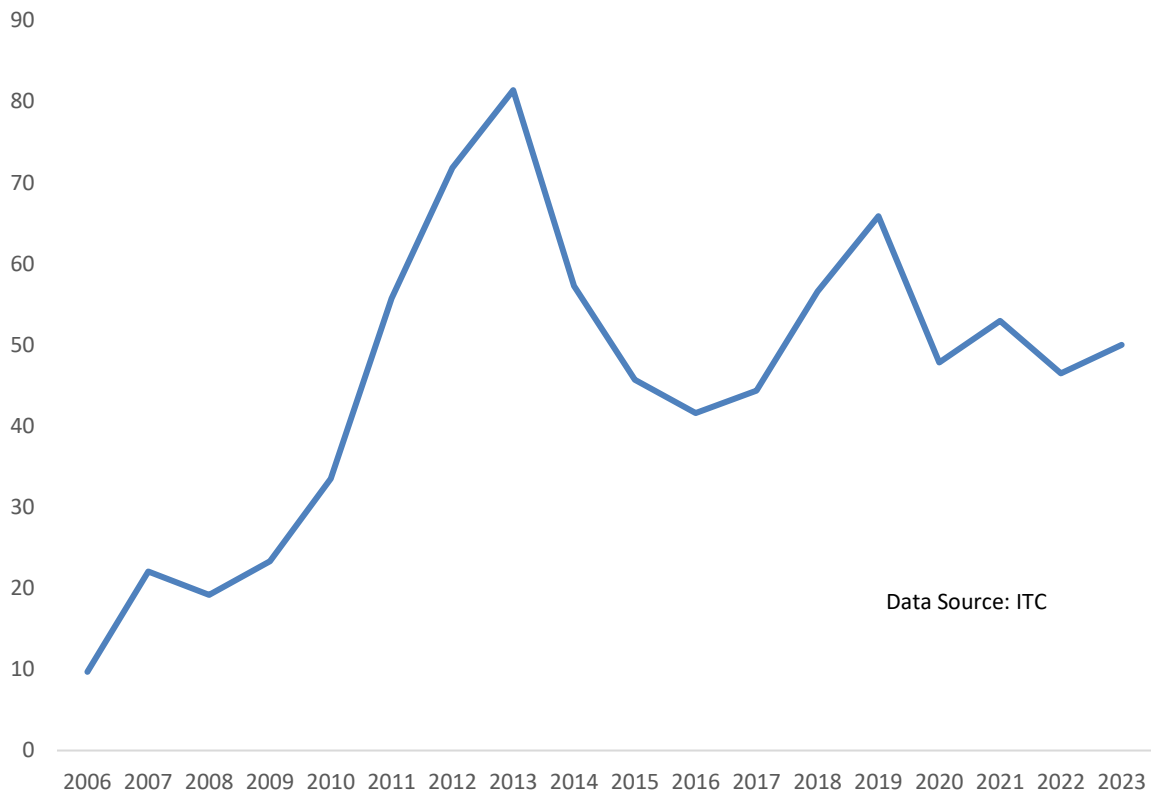


China's dominance in the global zinc market has also become increasingly evident over the years. In 2023, China's imports of zinc concentrate surged to over 2.2 million tonnes, a remarkable increase of 1.8 million tonnes compared to 2001. During the same period, production of zinc concentrates outside China grew by only 823 thousand tonnes, highlighting the stark contrast in both growth rates and absolute quantities.

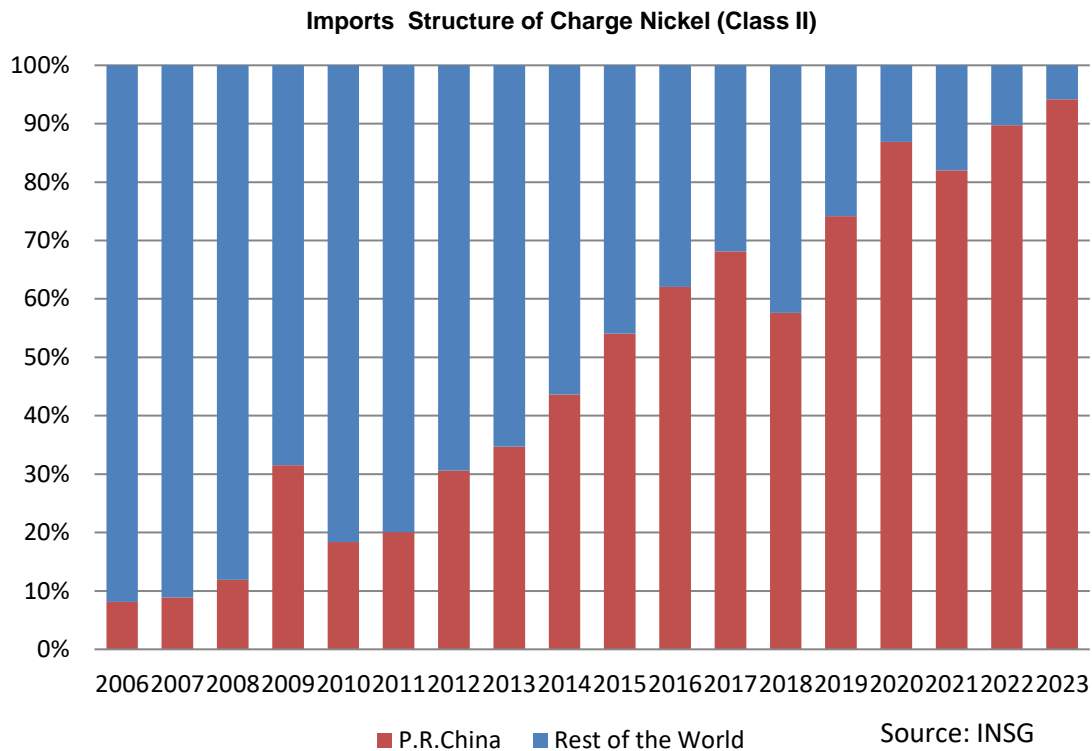
When it comes to refined zinc metal, China's influence is even more pronounced. While total refined zinc metal production outside China declined by 136 thousand tonnes, China experienced an extraordinary increase of over 4.8 million tonnes in production. Concurrently, China's imports of refined zinc metal grew by 358 thousand tonnes.

In terms of zinc units, China imported 32% of the total zinc units produced outside the country in 2023. This underscores China's unparalleled role in both the zinc concentrate and zinc metal markets, with its expanding demand and production capabilities starkly contrasting with the shrinking market outside its borders. China's massive influence now defines the global zinc industry.

million tonnes **Trend in Nickel Ores and Concentrates Trade (Gross Weight)**

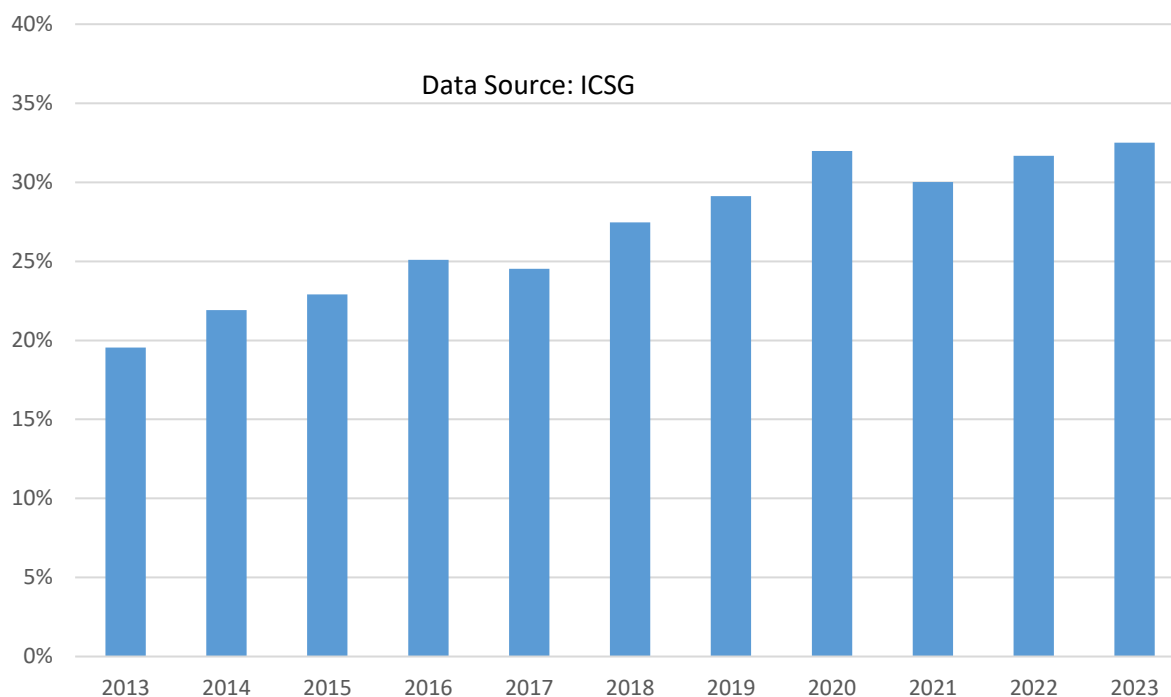


The graph tracks the global trade trend of nickel ores and concentrates from 2006 to 2023, revealing the impact of key policy changes, particularly in Indonesia, on trade volumes. The period from 2006 to 2012 saw a sharp rise in trade, driven primarily by China's increasing reliance on the Nickel Pig Iron (NPI) production route to meet its growing industrial demand for nickel units. However, this upward trajectory was disrupted between 2012 and 2014 when Indonesia, a major supplier, introduced laws restricting the export of nickel ores. These restrictions were part of a broader strategy to encourage domestic processing, resulting in a significant decline in global trade volumes. A recovery phase is evident from 2017 to 2019, during which Indonesia allowed the export of ores with a nickel content below 1.7%. This policy shift temporarily boosted trade volumes as the global market adjusted to the partial resumption of Indonesian exports. However, the recovery was short-lived, as trade volumes began to decline again in 2020 following Indonesia's decision to impose a complete ban on nickel ore exports starting in January that year. This ban, aimed at furthering domestic value addition, significantly curtailed global nickel ore trade, as Indonesia plays a pivotal role in the supply chain. The graph clearly illustrates how Indonesian export policies have had a profound influence on global nickel ore trade, with each policy shift leading to corresponding changes in trade volumes. These fluctuations underscore the critical role of regulatory environments in shaping commodity markets, particularly in sectors where supply is concentrated in a few key regions. Overall, the graph emphasizes the sensitivity of global nickel trade to policy changes in major exporting countries, especially Indonesia.



The chart illustrates the dramatic shift in the global import structure of Charge Nickel (Class II) from 2006 to 2023, with a particular focus on China’s evolving role. Initially, from 2006 to 2009, the majority of charge nickel imports were dominated by the rest of the world, with China holding only a small share, indicating that its demand for this commodity was relatively low at the time. However, starting around 2010, China’s share of global charge nickel imports began to rise significantly, reflecting the country’s rapid industrialization and growing need for nickel, particularly in stainless steel production and other industrial applications. By 2014, China’s imports had increased to the point where they nearly equalled the combined imports of the rest of the world, marking a significant shift in the global nickel market dynamics. This trend continued over the next several years, and by 2015-2019, China had firmly established itself as the dominant importer of charge nickel, with its share surpassing that of the rest of the world. This shift underscores China’s expanding industrial base and its strategic efforts to secure nickel supplies through investments and trade agreements, particularly with key nickel-producing countries like Indonesia. By 2020, China’s dominance in the global charge nickel market had solidified, with its share of imports exceeding 50% and reaching approximately 80-90% by 2023. This overwhelming dominance reflects China’s critical role as the primary driver of global nickel demand, fuelled by its massive production of stainless steel and the increasing importance of nickel in electric vehicle batteries. Consequently, China’s influence over the global nickel market has grown substantially, allowing it to play a decisive role in setting global prices and shaping trade policies. The chart highlights how China’s strategic focus on securing essential raw materials, combined with its industrial growth, has not only made it the largest importer of charge nickel but also a key player whose decisions and policies can have far-reaching impacts on the global market.

China Imported a Large Proportion of Copper Units Contained in Copper Ores/Concentrates/SX-EW and Refined Copper Produced Outside China over the Observed Period



China's significant and growing role in the global copper market can be demonstrated by the proportion of copper units (in ores, concentrates, and refined copper) imported by China compared to total global ex-China production. Over the ten-year period from 2013 to 2023, a steady and substantial increase in China's copper imports as a percentage of global ex-China output can be observed.

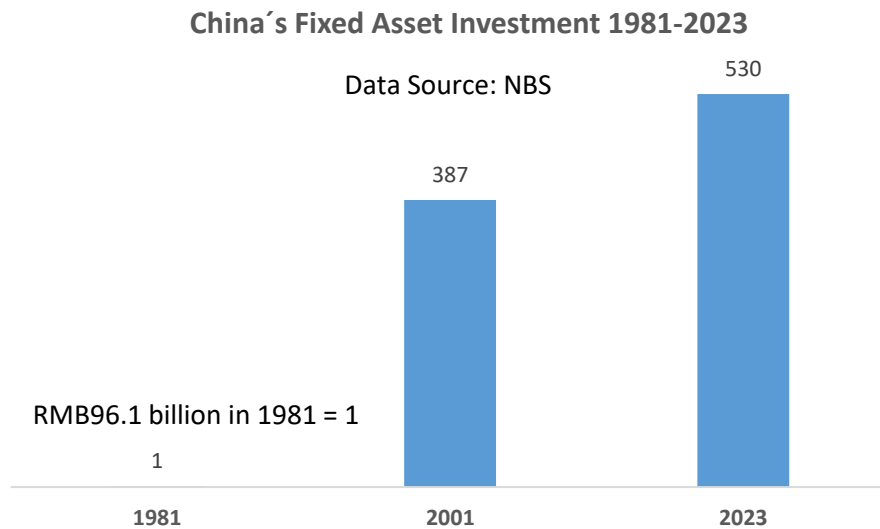
In 2013, China bought roughly 20% of the world ex-China's copper production. By 2020, this share had risen to over 30%, indicating rapid growth in demand for copper to support industrial and economic development, particularly in manufacturing, construction, and electronics. The trend remains consistent through to 2023, stabilizing at approximately 35%.

China's rising copper imports, claiming over a third of the total copper units produced outside its border, underscores its dependency on external sources to meet its domestic demand. This reliance is due to limited domestic production capacity relative to its vast consumption needs. Copper is a critical raw material in numerous sectors, including renewable energy (e.g., wind turbines and solar panels), electric vehicles, and telecommunications, aligning with China's goals for industrial modernization and sustainable energy transitions.

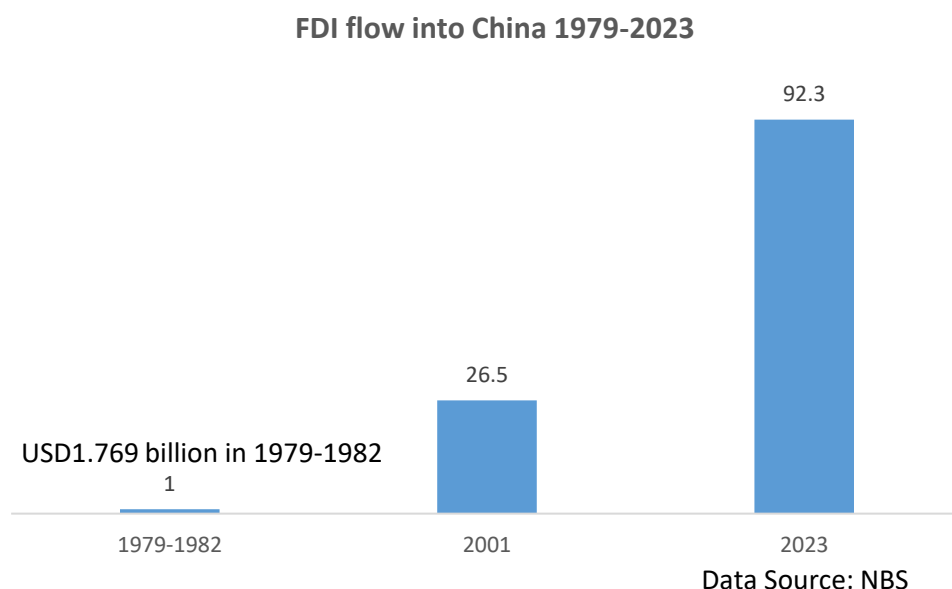
The observed upward trajectory highlights China's increasing influence on global copper trade dynamics. Its demand drives global prices and shapes the production and export strategies of copper-producing nations. This trend underscores its vital role in supporting global copper markets and shaping future demand trajectories for this essential industrial metal.

Investment

Fixed Asset Investment (FAI) in China witnessed exponential growth to more than CNY51 trillion in 2023 from CNY96.1 billion and CNY3.7 trillion in 1981 and 2001 respectively.



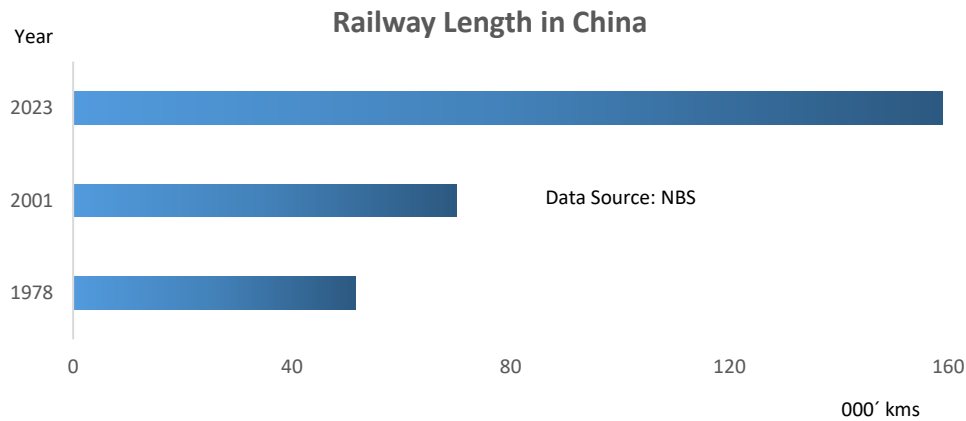
The level of Foreign Direct Investment (FDI) reflects the overall investment environment in a country and is an important supplement to the economic growth of the receiving country. To take the advantage of China's comparatively low labour cost, taxation incentives, and vast market potential, the FDI flow into China reached more than USD163 billion in 2023 from USD46.9 billion and USD1.8 billion in 2001 and 1979-1982 respectively.



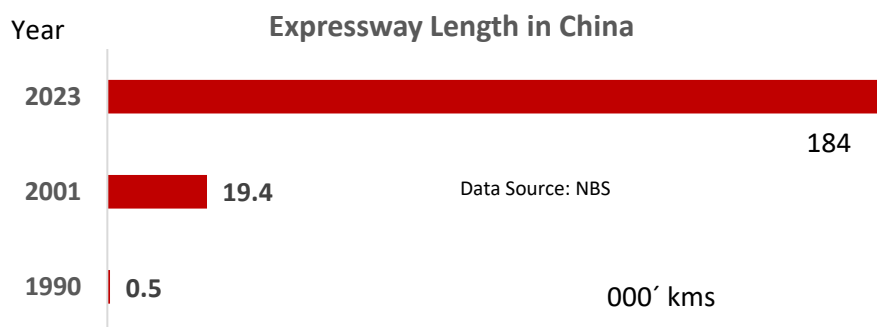
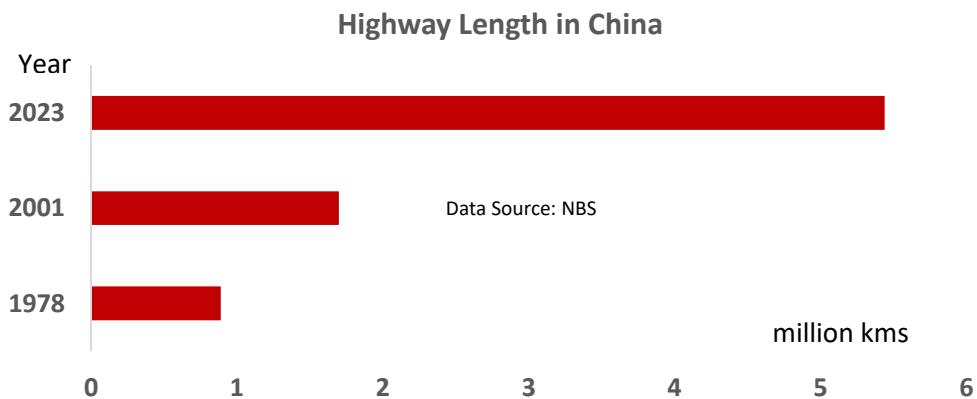
As well as attracting foreign direct investment (FDI), China emerged as a major investor in overseas markets. Based on data published by the National Bureau of Statistics (NBS), China's overseas direct investment (ODI) rose to USD178.8 billion in 2021, the same figure in 2007 was a mere USD26.5 billion and saw a significant growth of 675%.

Investment in infrastructure has played a critical role in sustaining China’s economic growth over the past 45 years, that in railways, highways, ports, airports, oil and petroleum transportation lines, telecommunications, and dams.

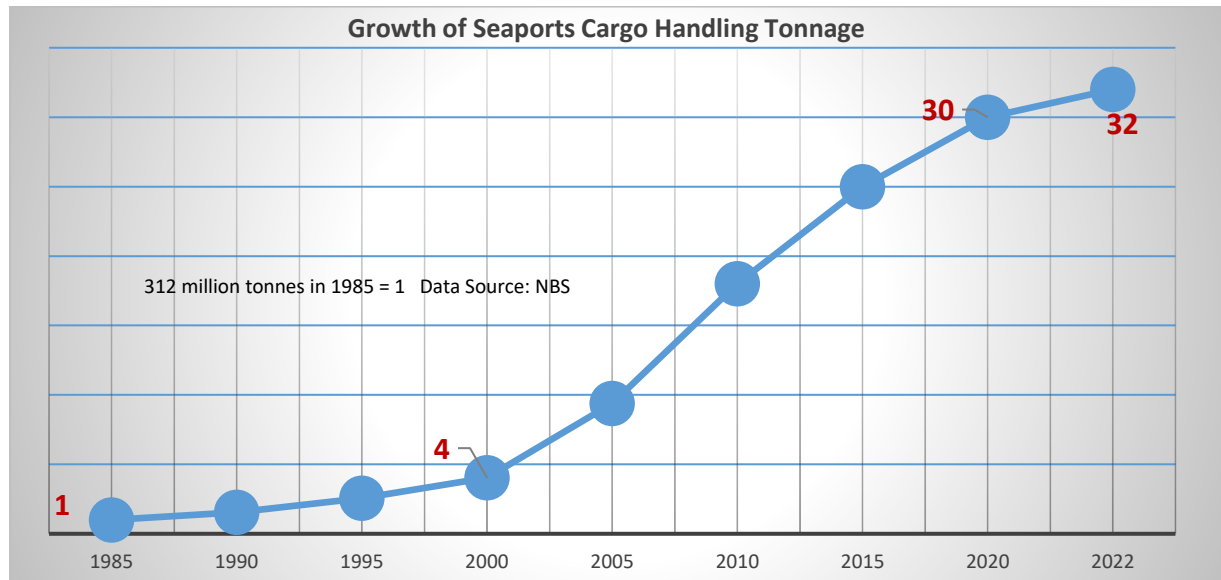
In 1978, the total length of railways in China was only 51.7 thousand kms, this had increased to 70.1 thousand kms by 2001 and 159 thousand kms including 45 thousand kms of high-speed railways by 2023.



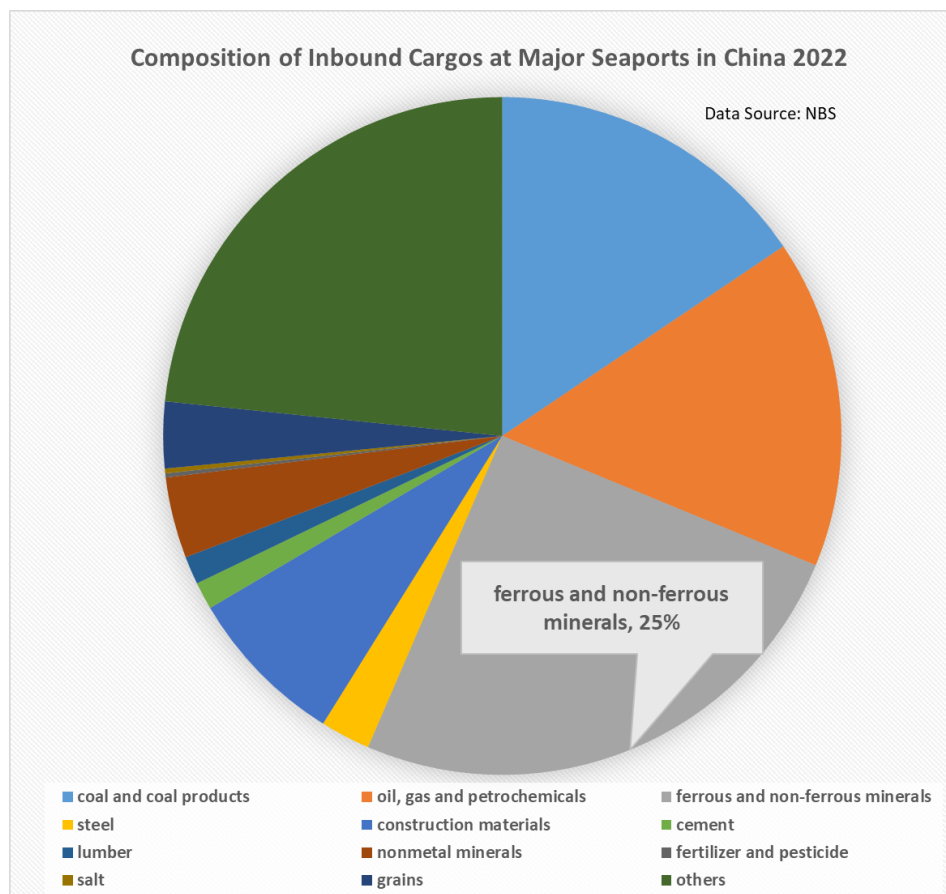
In 2023, the total length of highways in China reached more than 5.44 million kms compared to 1.7 million kms and 0.9 million kms in 2001 and 1978 respectively. Of this, the length of expressways was 184 thousand kms in 2023, the same figure was 19.4 thousand kms and 500 kms in 2001 and 1990.



Besides road transportation, China invested heavily in the cargo handling capacity at its seaports to break the bottlenecks hampering its commodities imports and exports. The cargo handling tonnage of 10.1 billion tonnes in 2022 at its major seaports was nearly 32 times that compared to 312 million tonnes in 1985.

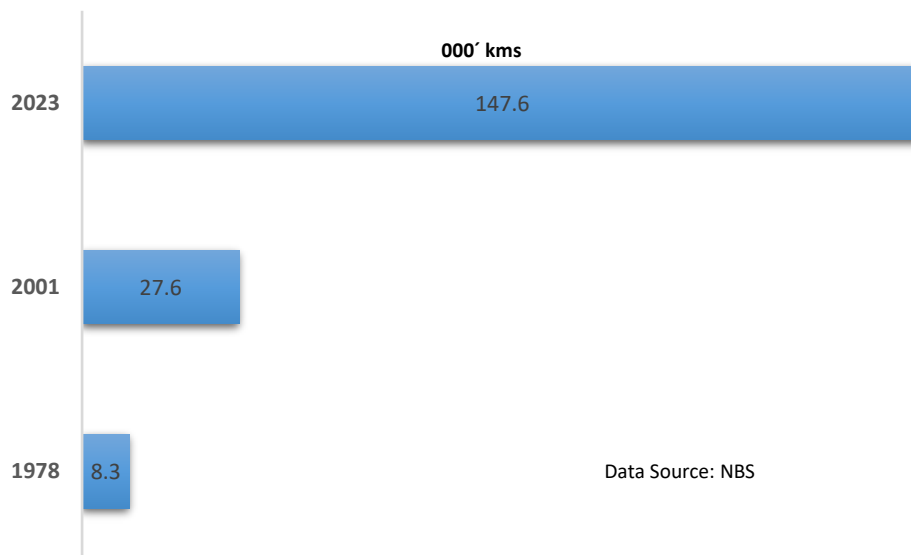


Out of the 10.1 billion tonnes of cargo loaded and unloaded at the major seaports in 2022, 16% or 1.63 billion tonnes were ferrous and nonferrous minerals. Overall, 25% of the inbound cargos unloaded at China’s major seaports were metallurgical minerals in 2022.



In 1978, the total length of oil and gas pipelines in China was only 8.3 thousand kms, that had increased to 27.6 thousand kms and 147.6 thousand kms in 2001 and 2023 respectively. This increase reflected both the accelerating rate of urbanization and the adjustment of the energy mix in China.

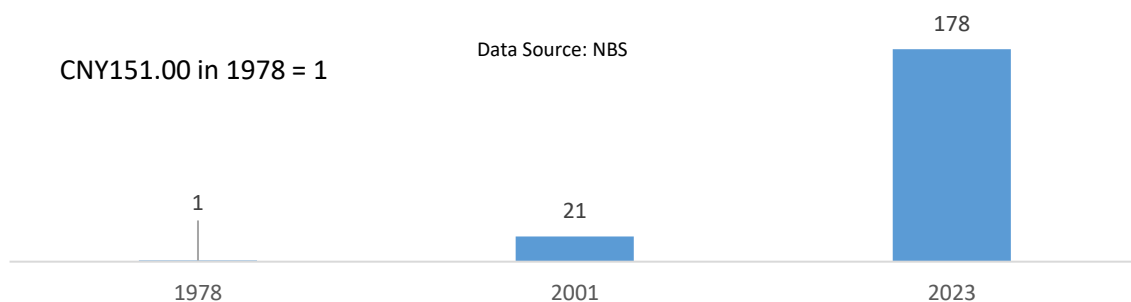
Length of Oil & Gas Pipelines 1978-2023



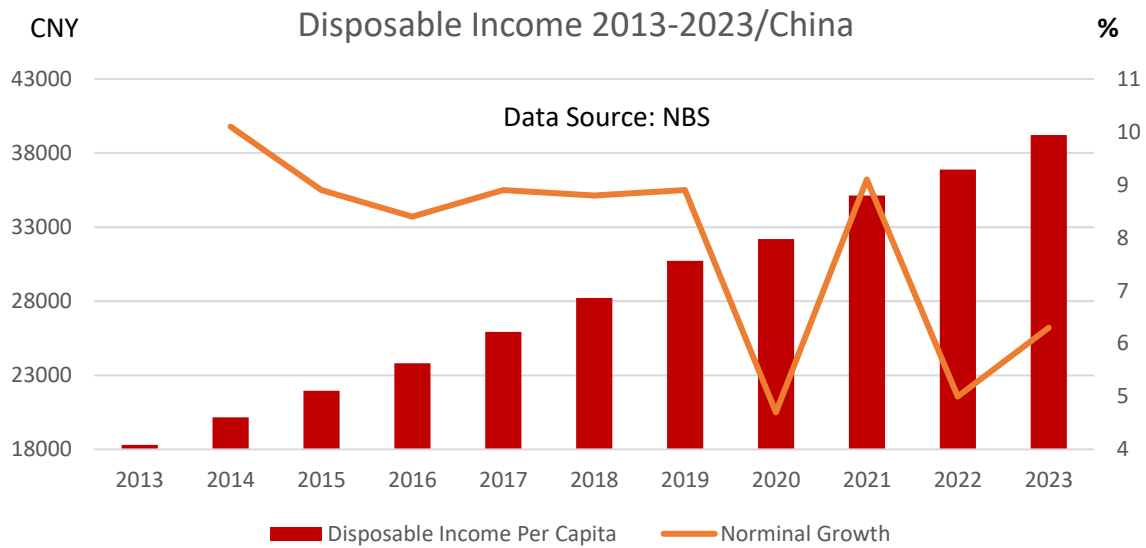
Consumption

Consumption is a critical apparatus in propelling economic growth. In 1978, China's household consumption expenditure per capita was only CNY151.00. With around 20 years of productivity liberalization, the figure climbed to CNY3139.00 in 2001 when China started to get involved in the global value chains. By 2023, the same figure had risen to CNY26796.00 representing a 178-fold increase.

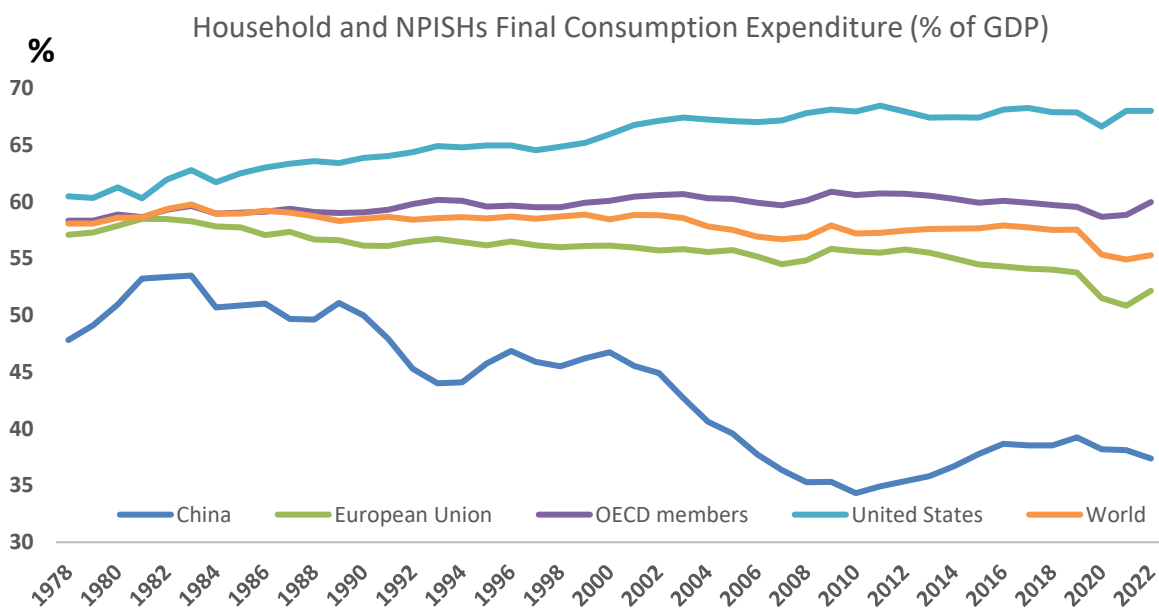
Growth of Per Capita Household Consumption Expenditure 1978-2023 China



Disposable income is an essential economic indicator in analysing the state of an economy. China started to survey household disposable income in 2013 to assess how much money was being saved, invested, and spent by its citizens. Statistics published by the National Bureau of Statistics (NBS) showed a healthy and incremental growth of the disposable income per capita in China which supports its strategic structural adjustment of the economy: shifting from export and investment to consumption-driven growth.



Although China’s household consumption has kept increasing and contributed more and more to its growth, compared to other major economies the consumption potential in China is still huge. According to World Development Indicators compiled by the World Bank, the Household and NPISHs (Non-Profit Institutions Serving Households) Final Consumption Expenditure in China was only 37.4% of its GDP in 2022 far below the world average of 55.3%, the same figure for the United States was 68%, for OECD members 60%, and for the EU 52.2%.



Data Source: World Development Indicators

The achievements made in China over the past 45 years exhibit the importance of combining the right domestic policies and global integration in changing the economic landscape of a country. Without the revolutionary recalibration of policies in 1978, China could not have liberalized the strangled and suppressed domestic resources and productivity. Without the successful, all-round, and comprehensive participation in and integration into the global value chains marked by its access to the WTO in 2001, China could not have amassed the economic magnitude it has today.

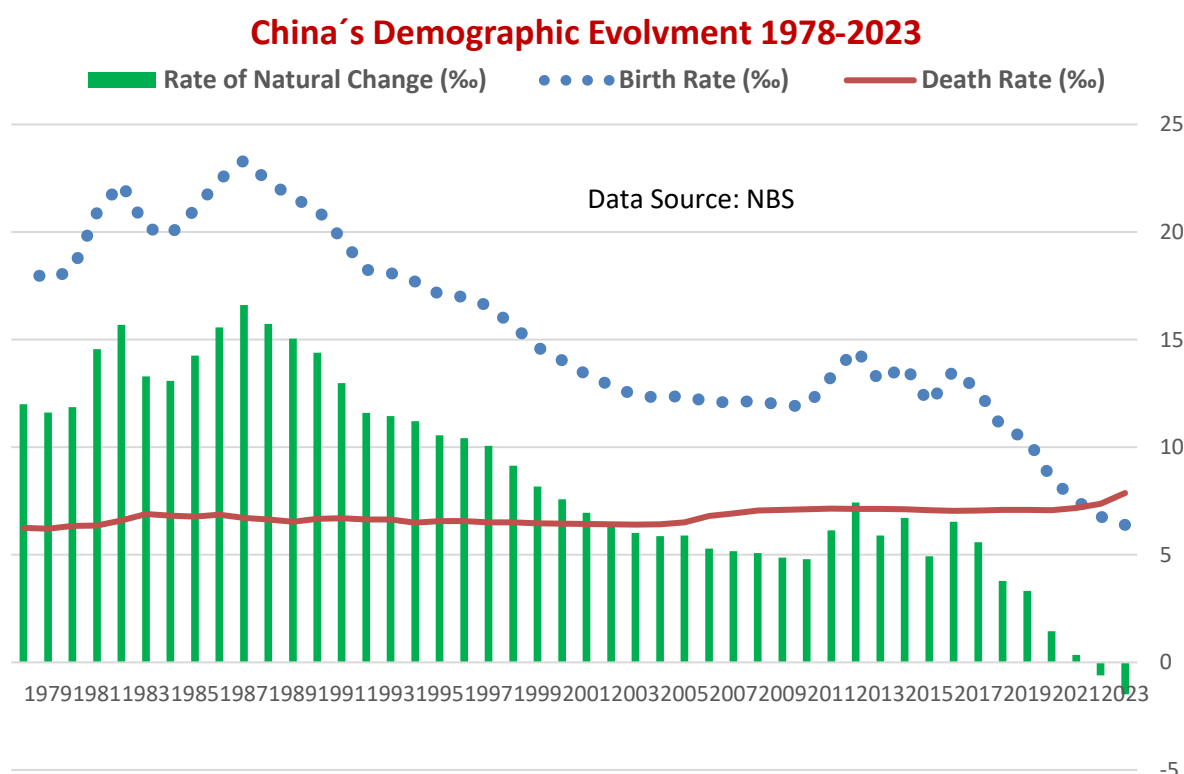
Current Economic and Geopolitical Challenges

China is currently facing a complex set of challenges across multiple fronts, which are shaping its economic and geopolitical landscape.

Demographics

China's demographic dividend emerged in the late 20th century, driven by declining fertility rates and increased life expectancy, partly due to the one-child policy. This created a large working-age population with fewer dependents, fuelling rapid industrialization and urbanization. A young, educated workforce boosted productivity and economic growth, particularly in manufacturing and export-led industries. The demographic structure enabled high savings and investment rates, facilitating infrastructure development and poverty reduction. This period was crucial for China's transformation into a major global economy, significantly improving living standards and expanding the middle class.

One of the significant challenges facing China is its demographic shift. The population is aging rapidly, and the birth rate is declining. This demographic trend poses several economic challenges, including a shrinking labour force, increased healthcare costs, and a potential decrease in consumer spending. For the minerals and base metals industries, an aging population could translate to lower demand in the long term as economic growth slows and construction and manufacturing activities decline.

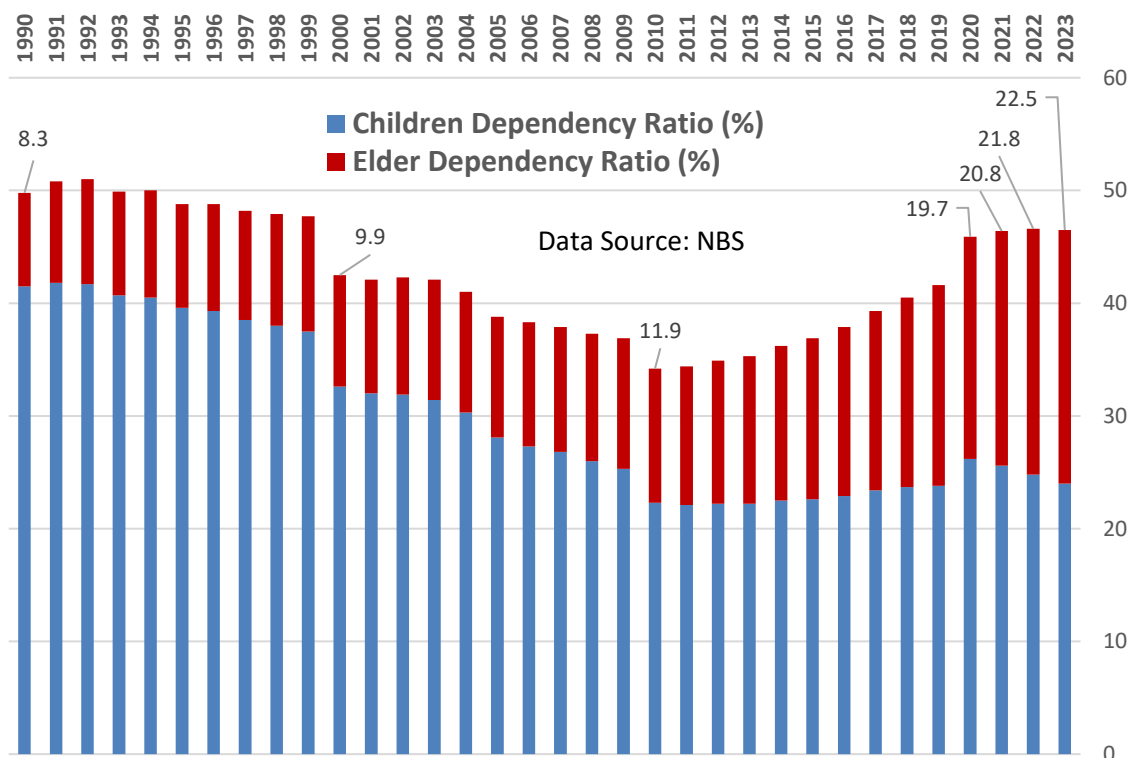


Since surpassing the 800 million threshold in 1970, China's population continued to grow at an accelerated rate until 1987, ten years after the central government implemented a strict one-child per couple policy. Starting in 1987, both the birth rate and the natural growth rate took a downward trend to a point in 2003 when the death rate was higher than the natural growth rate. At this inflection point,

China failed to adjust its birth policy promptly, instead, it implemented even harsher regulations to curb population growth including laws allowing local government to impose fines and penalties for additional children, which led to the continued drop in the natural growth rate. The birth rate bounced back during the 2013-2016 thanks to the late-arrived policy adjustment to allow two children per couple. That didn't change the downward trend due to the low base exacerbated by a reluctance to have children and the prohibitive costs incurred when raising them. The situation kept deteriorating showing a net population decrease beginning in 2022. This marks a significant demographic challenge for China, with long-term implications for its economy and society. From a high point in the early 1980s, where it fluctuated between 15‰ and 20‰, the birth rate has steadily decreased, particularly from the mid-1990s onwards. By 2023, the birth rate had dropped to less than 10‰, indicating a sharp reduction in the number of births per thousand people in the population.

These trends suggest significant demographic challenges for China. The declining birth rate, coupled with an increasing death rate, points to an aging population that is growing faster than the rate of natural increase. The negative rate of natural change observed in recent years indicates that China has entered a period of population decline, which could have profound implications for the country's economy, labor force, and social services. The shrinking population could strain the working-age population and pose challenges for supporting an increasingly elderly population, necessitating policy adjustments to manage the economic and social impacts.

China is Entering an Aging Age



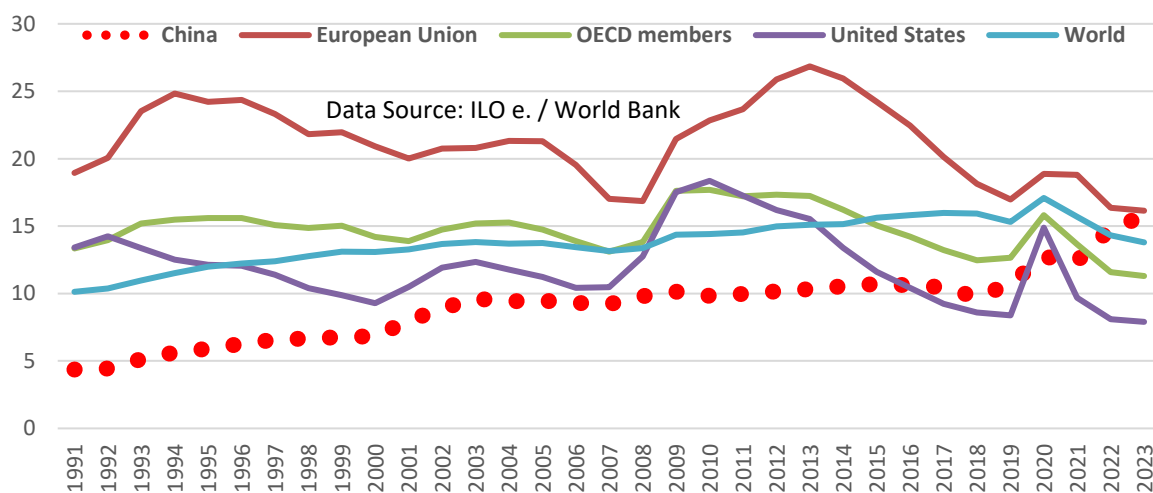
This chart highlights the significant demographic shift in China's population structure over the period 1990 to 2023. It illustrates two key dependency ratios: the Children Dependency Ratio (blue) and the Elder Dependency Ratio (red), which represent the proportion of dependents (children and elderly, respectively) to the working-age population.

The Children Dependency Ratio has shown a gradual decline since 1990. Starting at around 40% in 1990, it steadily decreased throughout the years, reflecting the impact of China's one-child policy and the subsequent decline in birth rates. By 2023, this ratio appears to have stabilized at a lower level compared to the early 1990s, indicating a sustained reduction in the proportion of children in the population.

The Elder Dependency Ratio, which represents the proportion of elderly dependents to the working-age population, has seen a dramatic increase, particularly since 2000. From a low point of 8.3% in 1990, this ratio began to rise gradually but steadily, reflecting the aging of China's population. The increase became more pronounced after 2010, with the ratio jumping from 11.9% in 2010 to 22.5% in 2023. This indicates a growing burden on the working-age population to support an increasing elderly population.

The combined effect of a declining Children Dependency Ratio and a rapidly rising Elder Dependency Ratio signifies a significant shift in China's demographic structure. The growing proportion of elderly dependents relative to children suggests that China is facing the challenges of an aging society, where the working-age population is increasingly pressured to support a larger elderly population. This demographic shift has profound implications for China's economic and social policies, particularly in areas like healthcare, pensions, and the labour markets.

Youth Unemployment Rate (% of Total Labor Force Ages 15-24)

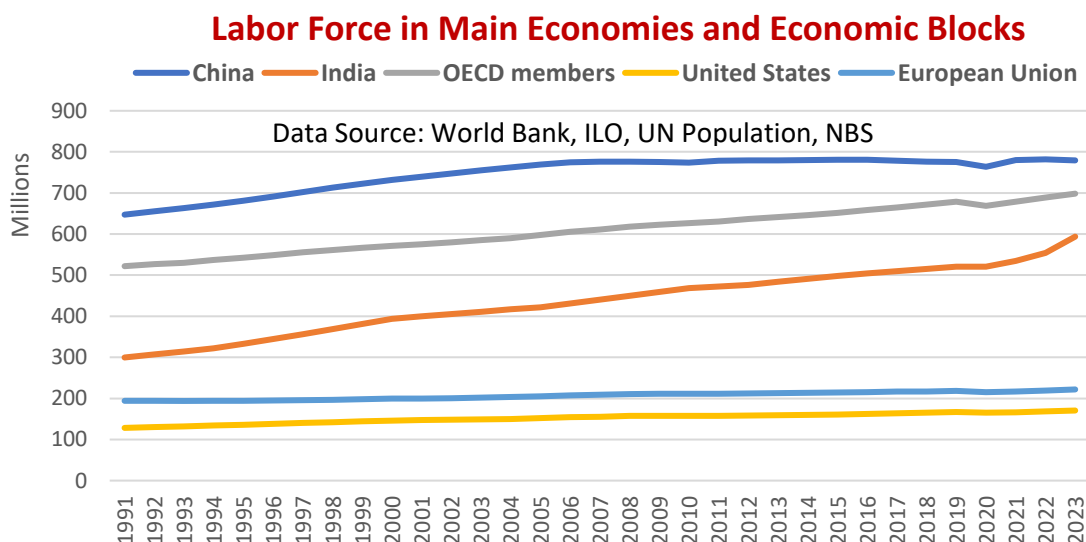


High youth unemployment has significant economic, social, and political repercussions. Economically, it stifles growth by wasting potential productivity, increases public spending on welfare, and erodes skills, leading to long-term labor market mismatches. The reduction in disposable income among young people also weakens consumer spending. Socially, youth unemployment can harm mental health, leading to frustration, depression, and increased social unrest, including higher crime rates. It can delay life milestones, such as starting a family, and exacerbate intergenerational inequality, trapping young people from disadvantaged backgrounds in poverty. Politically, widespread youth joblessness can erode trust in institutions, fuel populism, and extremism, and push governments toward policy shifts focused on job creation and labour market reforms. These trends can also spark generational tensions as older workers are perceived as blocking opportunities for the younger generation. Globally, the issue transcends national borders, with widespread youth unemployment

potentially leading to both international cooperation and competition as countries address the integration of young people into their economies. Consequently, high youth unemployment presents a profound challenge that affects not just economic growth but also the social fabric and political stability of societies worldwide.

The youth unemployment rate in China started at 4% in 1991 and gradually increased, reaching 10% by 2001. It fluctuated between 9% and 11% until 2020, after which it spiked to 15% in 2022 and 16% in 2023.

China's rising youth unemployment stems from several factors. Economic recovery from the COVID-19 pandemic has been slow, impacting industries like manufacturing and services that typically hire young workers. The real estate sector's downturn has also led to job losses. Education expansion has created a mismatch between graduates' skills and job market demands, especially as the economy shifts from manufacturing to services. Technological advancements, such as automation, have reduced the demand for low-skilled labor. Stricter government regulations in key industries have led to hiring slowdowns, while urban job markets have become more competitive and costly, reducing rural-to-urban migration. Additionally, many young people have high job expectations, seeking roles with prestige and work-life balance, which are limited for the currently around 10 million university graduates per year. Addressing these challenges will require coordinated efforts to align education, policy, and industry needs.



The labor forces of China, India, OECD members, the United States, and the European Union exhibit different trends from 1991 to 2023.

Starting with approximately 647 million workers in 1991, China's labor force grew steadily, peaking around 780 million in the 2010s. It has since stabilized but shows signs of a slight decline in recent years. India's labor force has grown rapidly, from about 300 million in 1991 to nearly 594 million in 2023, reflecting its youthful and expanding population. The OECD labor force increased gradually, from around 522 million in 1991 to about 698 million in 2023, indicating stable growth in developed economies. The U.S. labor force grew from around 128 million in 1991 to about 171 million in 2023,

with consistent, steady increases. The EU's labor force remained relatively stable, growing from about 194 million in 1991 to approximately 222 million in 2023, showing moderate fluctuations.

China's large labor force has been a cornerstone of its economic rise, supporting its transformation into the "world's factory." The abundant and relatively low-cost labor has enabled China to dominate global manufacturing and export markets, driving rapid GDP growth for decades. However, as the labor force growth slows and the population ages, China faces challenges in sustaining its economic momentum. The transition to a more service-oriented and high-tech economy requires significant upskilling of the workforce.

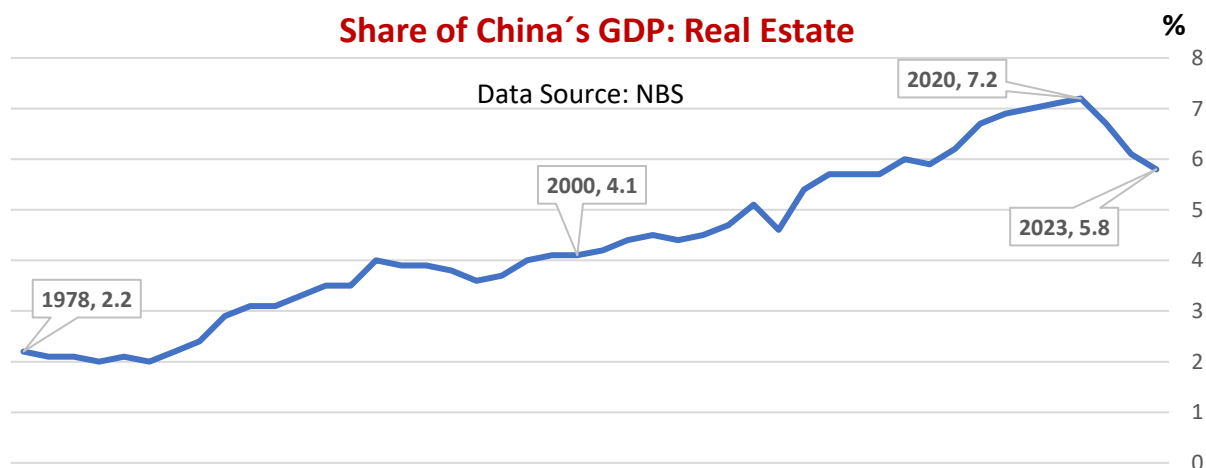
The vast labor force has fueled urbanization, with millions migrating from rural areas to cities in search of better opportunities. This shift has improved living standards for many but also created social challenges, including income inequality, housing shortages, and strain on urban infrastructure. The aging population and shrinking workforce could exacerbate these issues, leading to increased demand for social services, pensions, and healthcare.

The government's focus on maintaining economic stability and job creation is crucial to ensuring social harmony. High employment rates have traditionally supported that effort. However, as the labor force shrinks and the population ages, the government may face pressure to implement reforms in pensions, healthcare, and labor policies to address the changing demographics. Additionally, managing the expectations of a more educated and urbanized workforce could be politically sensitive, particularly if economic growth slows.

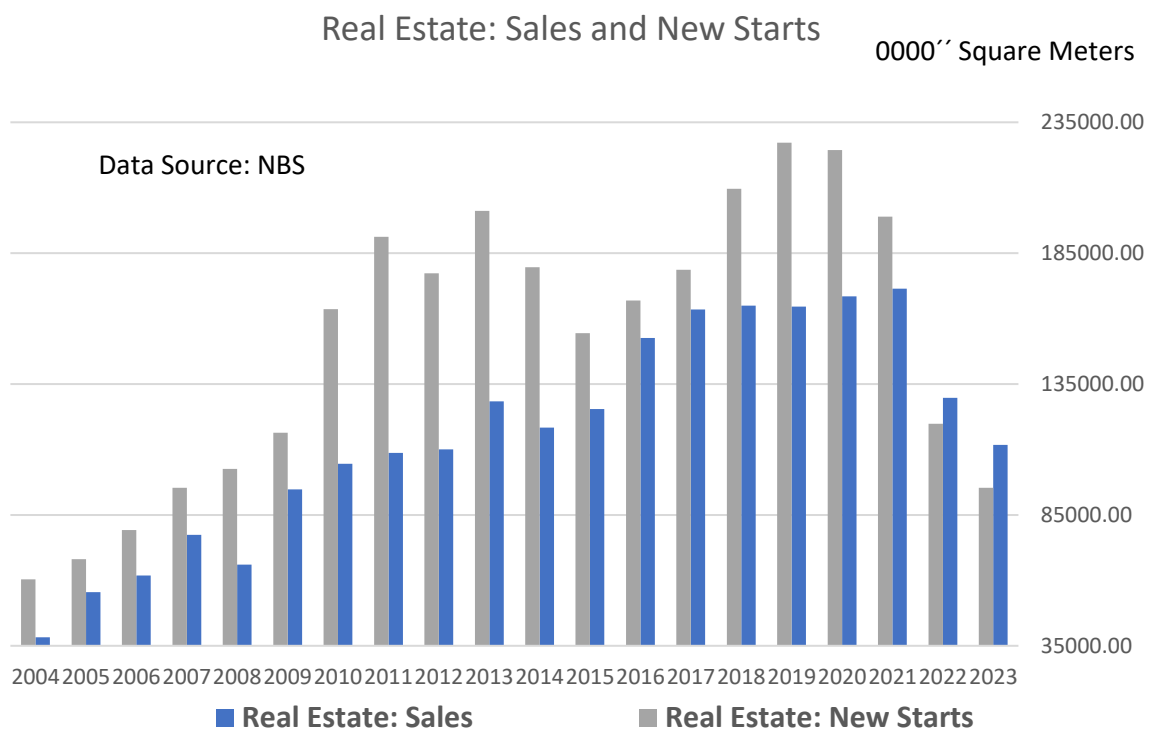
China's Real Estate Crunches

China's real estate market is a cornerstone of its economy, playing a vital role in economic, social, and political spheres.

Economically, the real estate sector contributes significantly to China's GDP, encompassing not only property sales but also related industries like construction and manufacturing. It's a primary investment avenue for Chinese households, with property ownership representing a major portion of personal wealth. Additionally, local governments heavily rely on land sales for revenue, which funds public services and infrastructure projects.



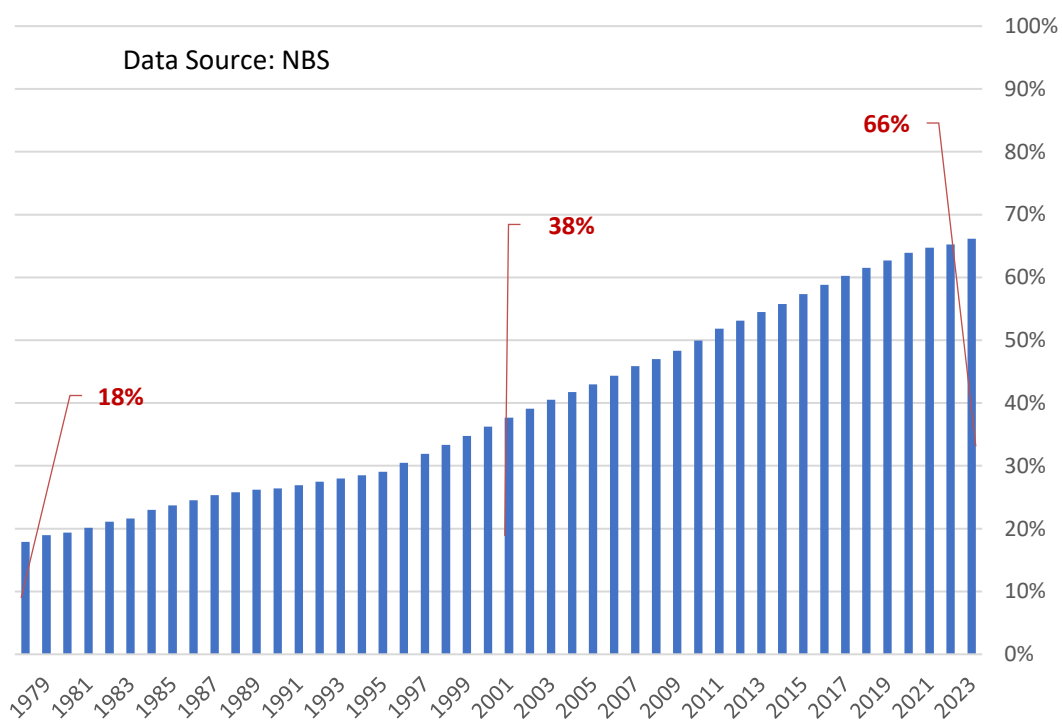
The real estate sector has been a crucial driver of China's economic growth, expanding from a minor share of GDP in 1978 to a peak around 2020, largely due to its role in urbanization and infrastructure development. This growth significantly boosted demand for minerals and metals, as the construction boom required vast amounts of steel, cement, copper, and other materials. The sector's expansion during the early 2000s, aligned with China's rapid urbanization, created a surge in demand across these industries, impacting global markets for raw materials. Local governments also benefited from land sales, which funded further development. However, since 2020, the real estate sector's contribution to GDP has declined, influenced by government policies to curb speculation, economic diversification efforts, and challenges like market saturation and affordability issues. This downturn in the real estate market has had a ripple effect on the minerals and metals market, reducing demand for construction-related materials and potentially impacting global prices. Despite the decline, real estate remains vital to China's economy, but its reduced GDP share suggests emerging vulnerabilities.



A cooling real estate market could slow economic growth, decrease demand for key minerals and metals, and reduce local government revenues. Given the sector's deep integration with the broader economy and its significant impact on raw material markets, a substantial downturn could pose risks to economic stability and global commodity markets. The decline in real estate new starts and sales in China in recent years stems from a confluence of regulatory, financial, and demographic factors. The Chinese government's "Three Red Lines" policy, introduced in 2020 to curb excessive debt among property developers, significantly constrained their ability to launch new projects, contributing to a sharp decline in new starts. This regulatory tightening, coupled with broader measures to cool the overheated property market, such as stricter mortgage rules and limits on land purchases, has also dampened buyer enthusiasm. The economic slowdown, exacerbated by the COVID-19 pandemic, has further reduced consumer confidence and spending power, leading to a decline in property sales. Additionally, China's real estate sector has been grappling with the consequences of overbuilding

during the previous decade, resulting in market saturation in many cities. This oversupply has led to stagnating or even falling property prices, discouraging both developers and buyers from entering the market. The situation has been further complicated by high-profile defaults among major developers like Evergrande, which have shaken investor and consumer confidence, leading to tighter bank lending and reduced access to credit. Demographic shifts, including an aging population and slowing urbanization, have also contributed to weakening demand for new housing. As fewer young people enter the housing market and household sizes shrink, the demand for new residential properties has diminished. Altogether, these factors have created a challenging environment for China's real estate sector, leading to the observed decline in both new starts and sales as developers and buyers adopt a more cautious approach amidst increasing uncertainties.

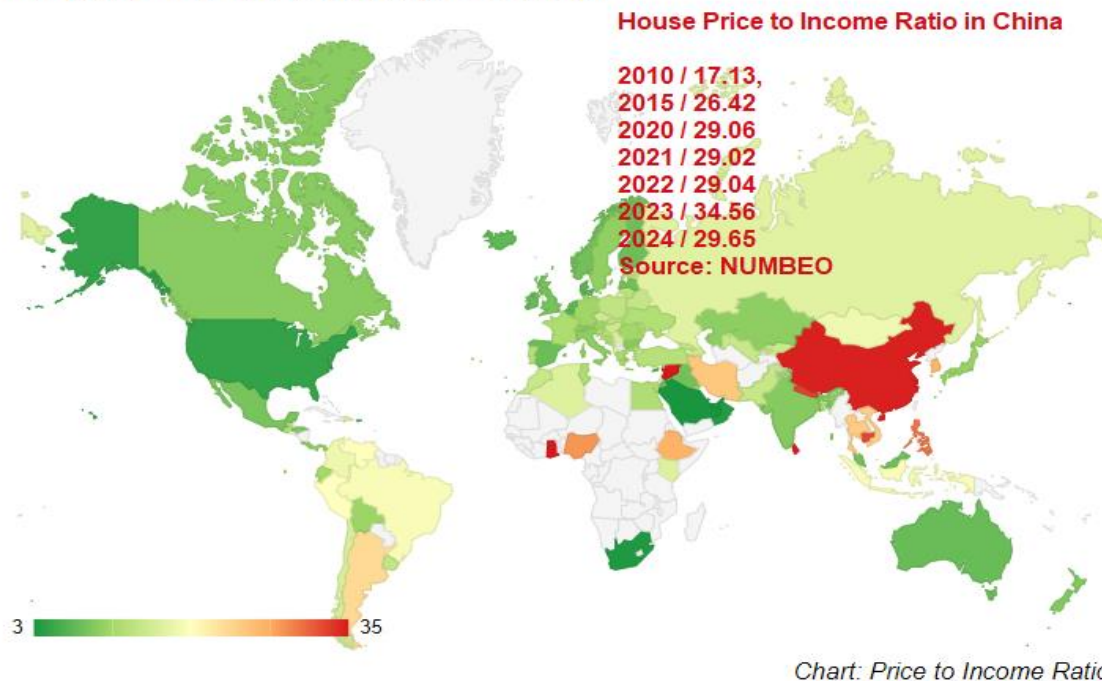
Development in China's Urbanization Rate



The development of China's urbanization rate from 1978 to 2023 shows a significant increase, with key milestones at 18%, 38%, and 66%, reflecting the country's rapid transformation. Initially, in the late 1970s and early 1980s, urbanization was modest as economic reforms were just beginning, but it gained momentum by the 2000s, with 38% of the population living in urban areas. This growth paralleled China's economic expansion, industrialization, and the massive migration from rural regions to cities, leading to a surge in housing demand. By 2019, the urbanization rate reached 66%, signalling an advanced stage of urban migration and city development. This dramatic increase in urban population had a profound impact on the housing market. The rising demand for housing in urban centres, especially in major cities, has driven up real estate prices and spurred extensive property development. However, this rapid growth has also raised concerns about the sustainability of the housing market, with fears of speculative investments leading to housing bubbles. The government has responded by implementing various policies to regulate the housing market, aiming to control prices and curb speculation to ensure housing affordability. In essence, China's urbanization has been a critical factor in shaping its housing market, with the two closely intertwined. The influx of people

into cities has fuelled economic growth and altered population dynamics, directly influencing real estate demand and development. The correlation between urbanization and the housing market is evident, as the shift towards urban living has transformed China's economic landscape and posed new challenges and opportunities in managing the housing sector.

Property Prices Index by Country

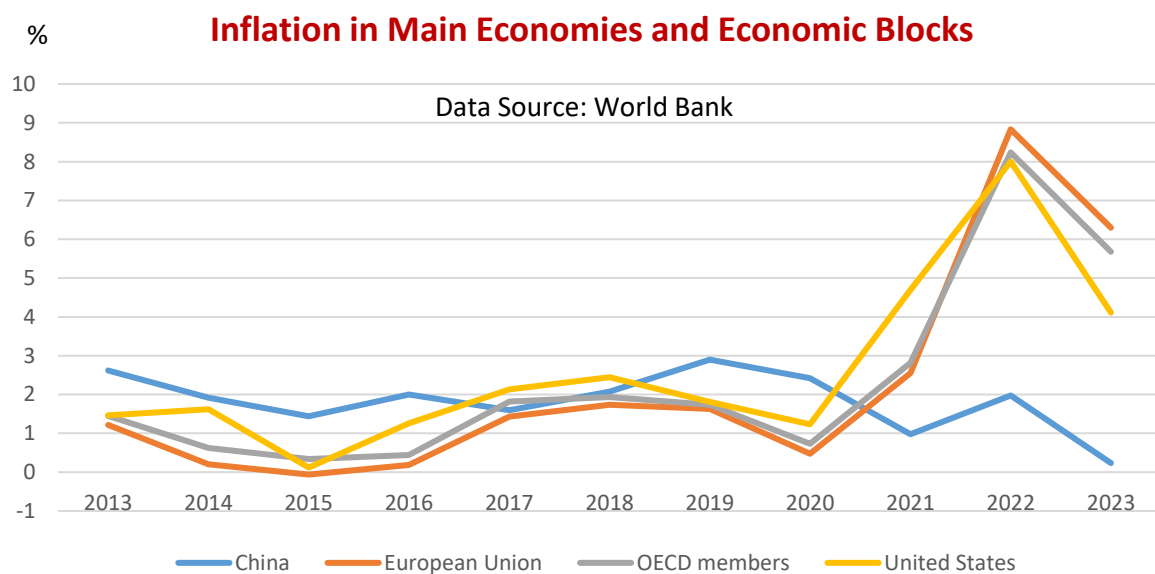


Politically, the Chinese government views the real estate sector as essential for maintaining stability. In China, the value of housing plays a crucial role in family wealth, with real estate often constituting the largest share of a family's assets. As property prices have soared in recent decades, homeownership has become a key symbol of financial stability and social status. This deep reliance on property value has made housing a highly sensitive issue. In recent years, social protests related to the housing market have intensified. These protests often arise due to issues like declining property values, unfinished or delayed housing projects, and restrictive government policies. Homebuyers and investors, who have poured significant portions of their savings into real estate, express frustration when market conditions or developer failures threaten their investments. For instance, widespread protests erupted over delayed construction in various regions as buyers feared losing their homes and financial security. The criticality of housing in family wealth, combined with these market challenges, has fuelled growing discontent and unrest among Chinese citizens. Homebuyers across China initiated widespread mortgage boycotts in 2022 due to delayed or halted construction projects by financially troubled developers. This movement saw thousands refusing to pay mortgages for unfinished properties.

In summary, China's real estate market is integral to its broader economic performance, social stability, and political governance. Its influence extends beyond property transactions, making it a critical element in China's development strategy. The government's focus on maintaining a stable real estate market reflects its importance in ensuring continued prosperity and social harmony.

Deflationary Pressure and Anaemic Consumption in China

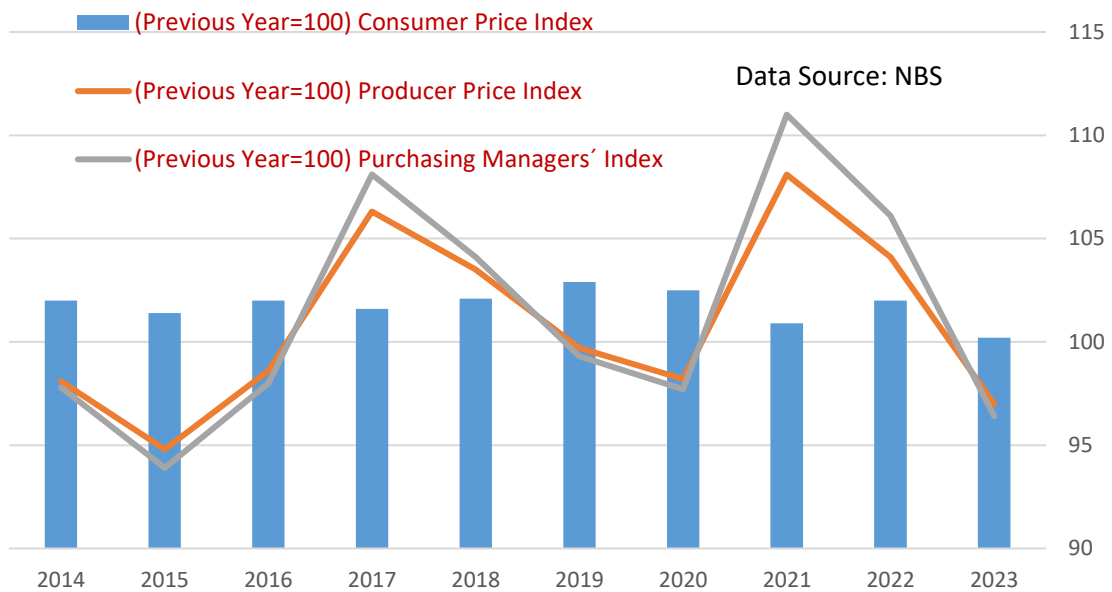
While the West is battling inflation pressures, China is grappling with deflation due to contrasting economic conditions. In the West, inflation is driven by supply chain disruptions, massive pandemic-related stimulus spending, labor shortages, and rising energy costs. These factors have boosted demand while straining supply, leading to higher prices. Conversely, China faces deflation due to weak domestic demand, a struggling property market, industrial overcapacity, and demographic challenges like an aging population. These issues have dampened consumer and business sentiment, exerting downward pressure on prices.



From 2013 to 2019, inflation rates in China, the European Union (EU), OECD members, and the United States (U.S.) remained relatively low and stable, reflecting cautious monetary policies and subdued economic growth, especially in the EU, which was still recovering from the Eurozone debt crisis. In 2020, the COVID-19 pandemic disrupted global economies, leading to reduced demand and temporarily subdued inflation. However, by 2021-2022, inflation surged across these regions due to supply chain disruptions, spikes in energy prices, and significant fiscal and monetary stimulus efforts to revive economies. The U.S. experienced particularly high inflation during this period, driven by supply chain bottlenecks, labor shortages, and increased consumer demand. China, while facing similar global pressures, managed to maintain relatively lower inflation due to effective supply chain management and more measured stimulus responses. In 2023, inflation rates began to decline as central banks, including the Federal Reserve and the European Central Bank, implemented tighter monetary policies, raising interest rates to curb inflation. Supply chain issues started to resolve, and energy prices stabilized, contributing to this downward trend.

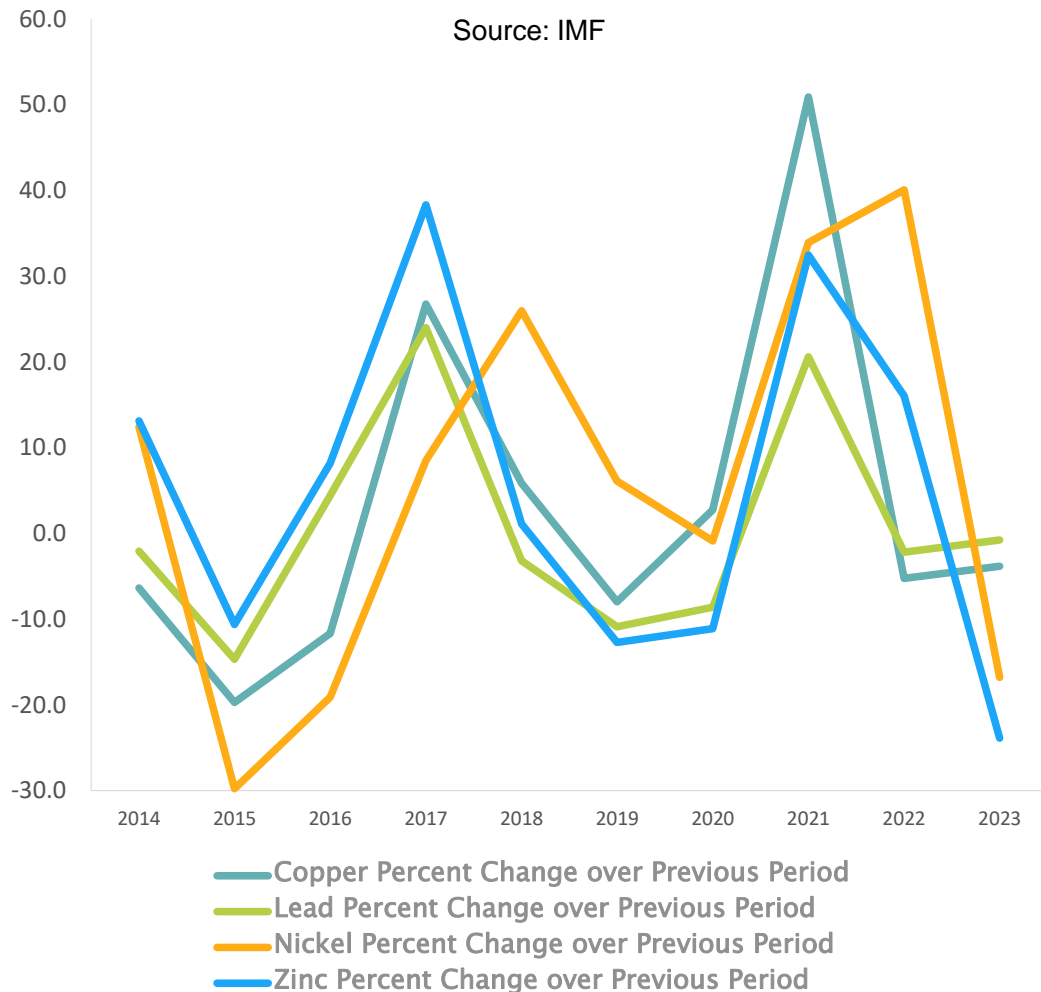
Deflation in China, particularly in recent years, is a complex phenomenon influenced by several key factors including growth deceleration, property market slump, demographic changes, supply chain management, excessive capacity, global economic conditions, tight monetary policies, price controls of essential goods to prevent inflation from harming consumers, and lower-than-anticipated post-pandemic recovery. Deflation can be problematic as it may lead to decreased consumer spending, reduced business investment, and increased real debt burdens, which can slow down economic growth even further. China's deflation also has global implications, as lower prices for Chinese exports can affect global inflation rates and economic conditions in other countries.

Main Price Indexes in Recent Years



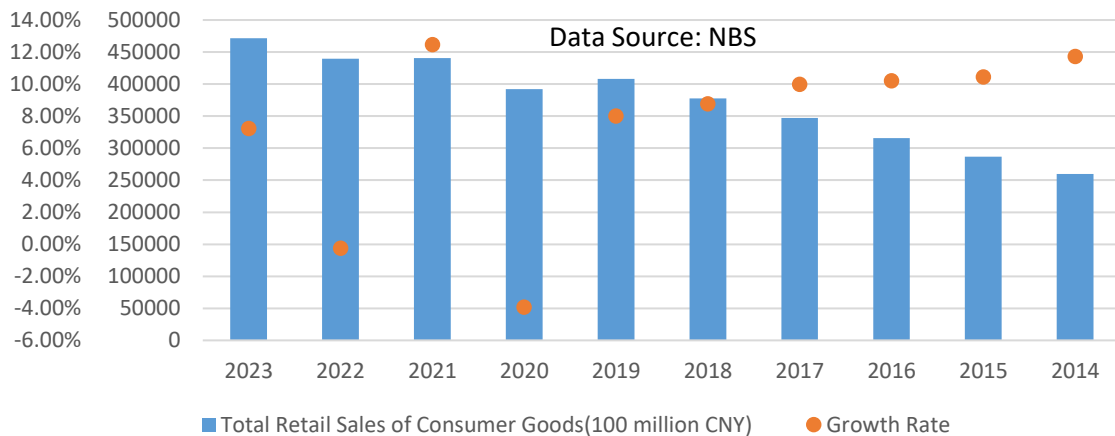
The trends in China's Consumer Price Index (CPI), Producer Price Index (PPI), and Purchasing Managers' Index (PMI) from 2014 to 2023 reflect a complex interplay of domestic policies, global economic conditions, and significant events such as the COVID-19 pandemic and trade tensions. The CPI's relative stability suggests effective inflation control, likely due to government measures like price controls and subsidies and balanced supply and demand in the domestic market. In contrast, the PPI shows marked volatility, driven by fluctuations in global commodity prices, supply chain disruptions, and the economic impact of the pandemic. The sharp rise in PPI around 2017-2018 aligns with the global recovery in commodity prices, while the subsequent decline mirrors the challenges posed by the pandemic, including reduced demand and production disruptions. The PMI's fluctuations reflect changing business sentiment, initially optimistic due to government stimulus measures post-pandemic, but later cautious as ongoing challenges like supply chain issues, labor shortages, and trade tensions emerged. The decline in PMI in recent years highlights the uncertainties within the manufacturing sector, influenced by global market conditions and domestic shifts towards a more consumption-driven economy. Overall, while the CPI indicates steady consumer prices, the PPI and PMI reveal the broader economic uncertainties and challenges producers and businesses face in navigating an evolving and often turbulent economic landscape in China.

Primary Commodity Price System (PCPS)



The comparison between global commodity prices and China's economic indicators, particularly the Producer Price Index (PPI) and Purchasing Managers' Index (PMI), reveals a strong positive correlation from 2014 to 2023. During 2016-2018, a significant rise in global commodity prices, especially for nickel and zinc, corresponded with a sharp increase in China's PPI, indicating higher production costs driven by more expensive raw materials. This positive correlation is evident again in the 2019-2020 period, where a decline in global commodity prices, particularly in nickel and zinc, aligned with a decrease in China's PPI, reflecting reduced input costs for producers. The impact of the COVID-19 pandemic in 2020-2021 further underscores this relationship. The initial surge in China's PMI, reflecting recovery efforts and stimulus measures, was followed by a delayed but notable increase in the PPI in 2021, driven by a spike in global commodity prices due to supply chain disruptions and fluctuating demand. As global commodity prices fell sharply in 2022-2023, particularly for zinc, China's PPI similarly declined, mirroring the reduction in production costs amid a cooling global economy. Throughout this period, the PMI also displayed sensitivity to these global price fluctuations, particularly during economic uncertainties, such as the pandemic, where both commodity prices and manufacturing activity experienced significant volatility. Overall, the trends in global commodity prices are closely linked with China's PPI, showing that as global input costs rise or fall, China's producer prices follow suit, highlighting the significant influence of global commodity markets on China's industrial pricing and economic health.

Consumers Goods Sales and Growth Rate in China

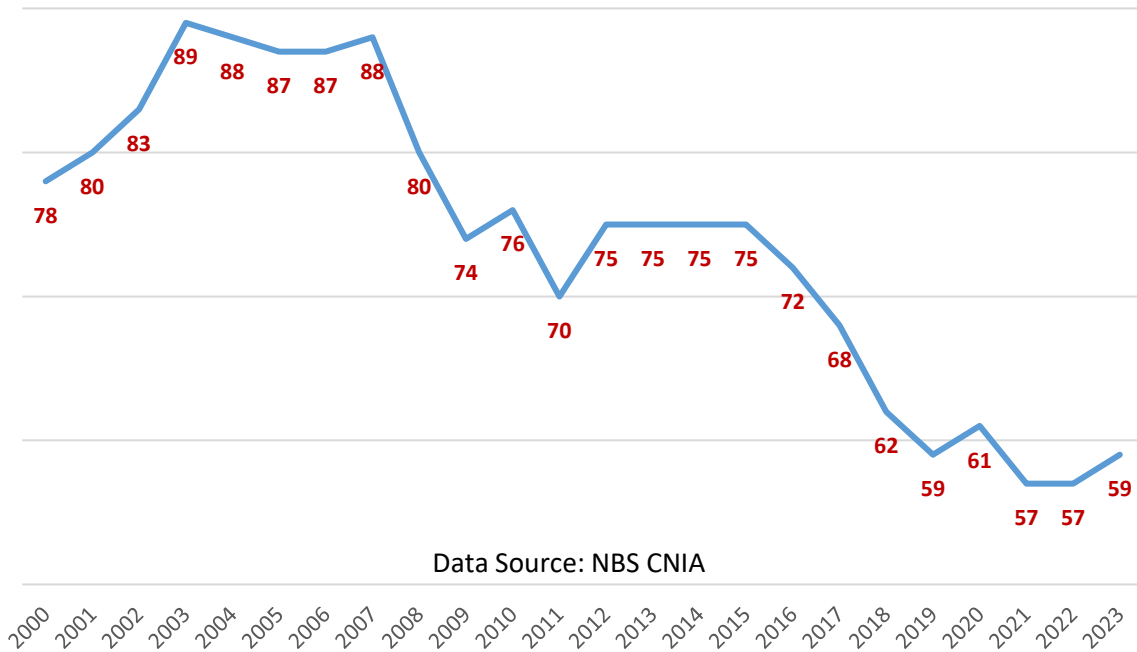


The chart shows a steady increase in total retail sales of consumer goods in China from 2014 to 2023, indicating strong domestic demand. However, the growth rate of these sales has generally declined over time, starting from above 10% in 2014-2015 and dropping in later years. Notably, there was a significant dip in 2020, likely due to the economic impact of COVID-19, followed by a brief recovery in 2021, and then a further slowdown.

This trend correlates with global commodity prices. During periods of rising commodity prices, such as 2016-2018 and 2021, the growth rate of consumer goods sales fluctuated, as higher production costs led to increased consumer prices, potentially dampening sales growth. The sharp decline in 2020 aligns with both the pandemic-induced economic slowdown and disruptions in the commodity market, which affected consumer spending and confidence.

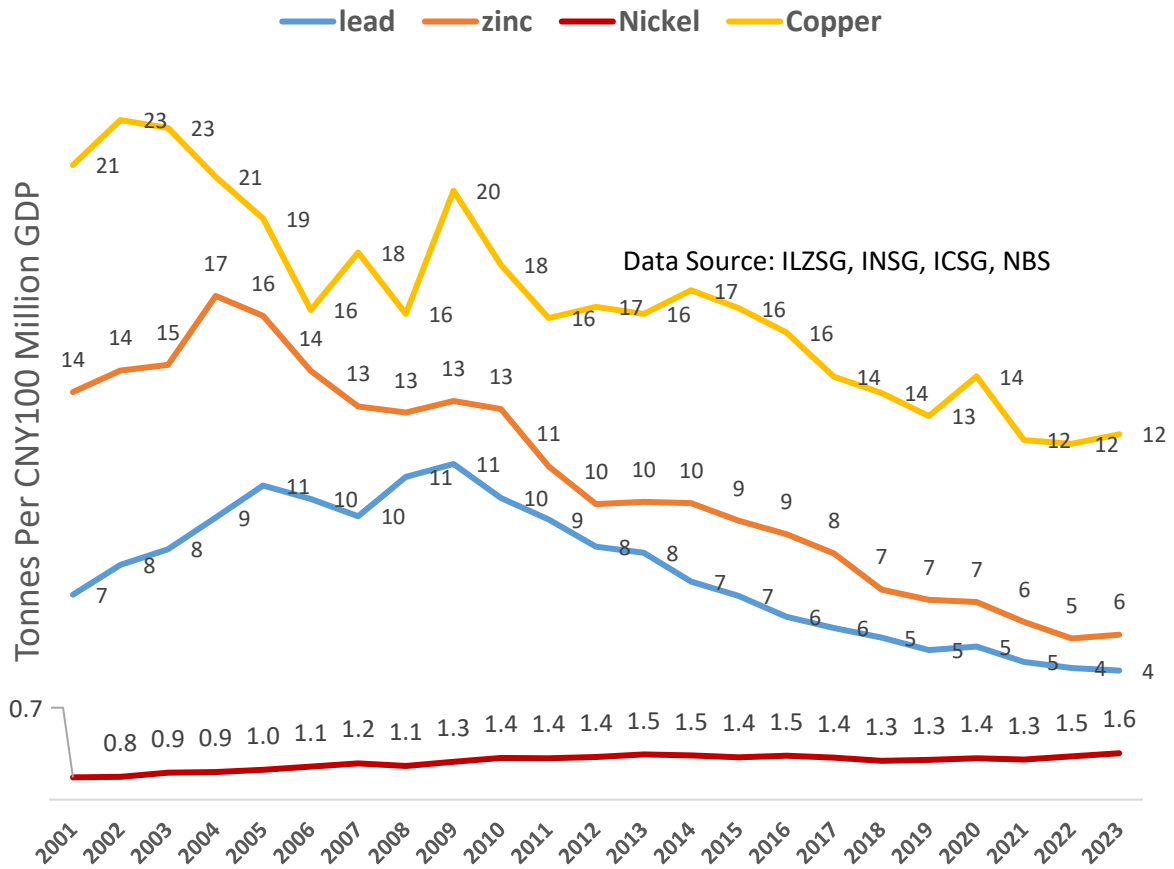
Overall, the growth rate of consumer goods sales in China reflects the economy's response to both domestic factors and global market conditions, with fluctuations in the commodity market playing a significant role in influencing consumer demand and sales performance.

Consumption Intensity of Non-ferrous Metals Per Unit GDP China (Tonnes Per CNY100 million GDP)



The declining consumption intensity of non-ferrous metals per unit of GDP in China from 2000 to 2023 has significant implications for the non-ferrous metals industry and China's broader economy. The steady decrease suggests a shift in China's economic structure, moving away from heavy industry and construction-led growth towards more service-oriented and high-tech sectors, which are less metal-intensive. This trend indicates a need to adapt to reduced domestic demand growth for the non-ferrous metals industry. As China uses fewer non-ferrous metals per unit of GDP, it indicates a move towards resource efficiency and reducing the environmental impact of its economic activities. However, this transition could pose challenges for regions within China that are heavily reliant on the metals industry, potentially requiring government intervention to mitigate economic disparities and support diversification efforts. On a global scale, the reduction in China's metal consumption intensity might affect international supply chains, particularly for countries that export non-ferrous metals to China. These countries could face diminished demand, prompting them to seek alternative markets or adjust their production strategies. Conversely, China's increasing focus on advanced industries could drive demand for specific high-tech metals, altering global market dynamics in different ways.

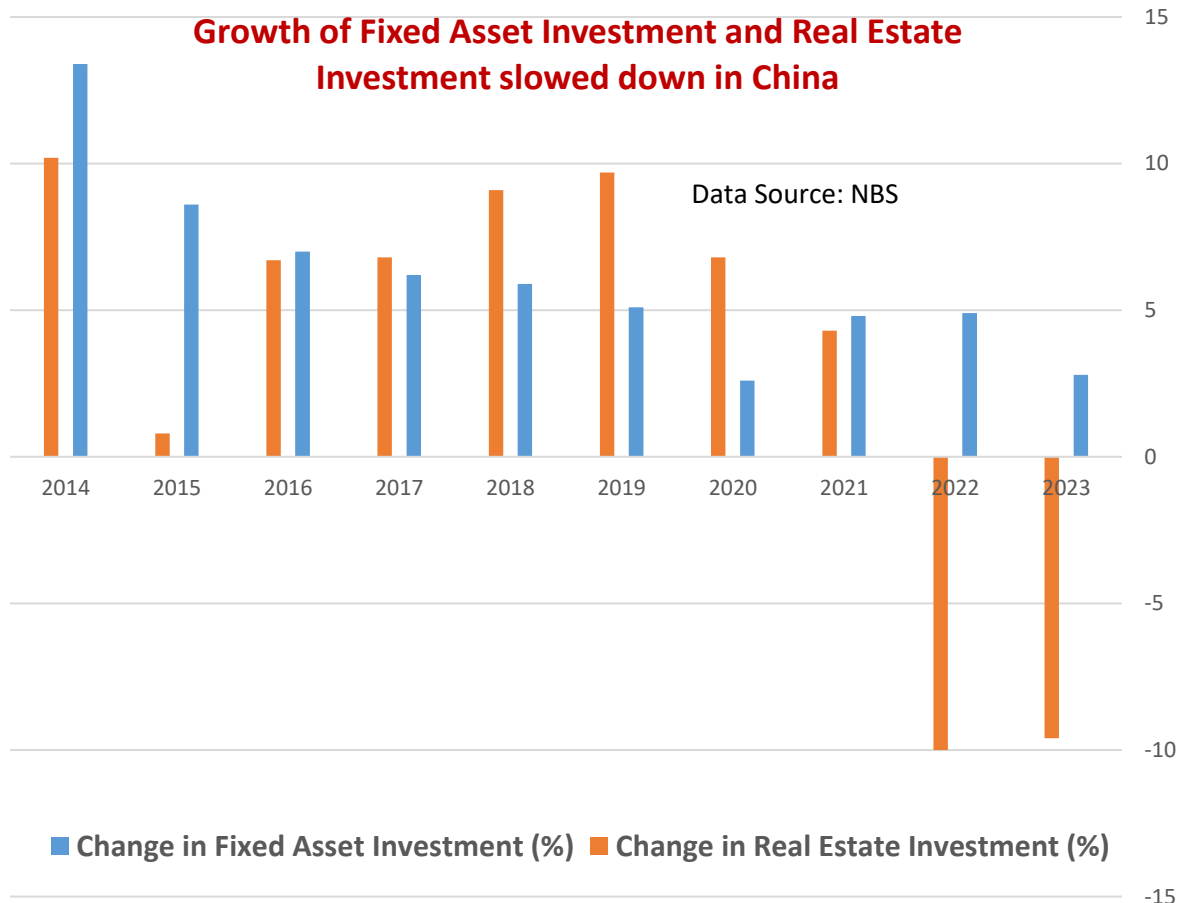
Usage Intensity of Zinc, Lead, and Nickel Metals Per Unit GDP / China



The chart illustrates the usage intensity of zinc, lead, nickel, and copper per unit of GDP in China from 2001 to 2023, reflecting significant shifts in the country's economic structure. Over this period, zinc, lead, and copper saw notable decreases in intensity, particularly after 2010, indicating a transition from heavy industry and construction to more advanced manufacturing and service sectors. This trend aligns with China's broader economic evolution from an investment-driven growth model to one increasingly focused on consumption, innovation, and efficiency. The declining metal intensity suggests improvements in industrial efficiency and the adoption of more resource-efficient technologies, reflecting China's efforts to upgrade its industrial base. The drop in metals like lead and zinc also correlates with a reduction in traditional manufacturing activities, such as LAB battery production, as the country shifts towards less resource-intensive and more sustainable technologies. Furthermore, the decline in the intensity of copper and zinc usage likely mirrors the plateauing of major infrastructure projects as China's urbanization process matured, reducing the need for large-scale construction. Notably, the slight rise in nickel usage towards 2023 could be linked to growing demand in stainless steel production and emerging sectors like electric vehicle batteries, indicating a shift in the types of metals being used rather than a simple reduction in overall metal consumption. In essence, this chart encapsulates China's economic transformation towards a more sustainable and technologically advanced industrial structure, with decreasing reliance on traditional metals as the country adapts to new economic realities and environmental imperatives.

Lacklustre Investment Growth

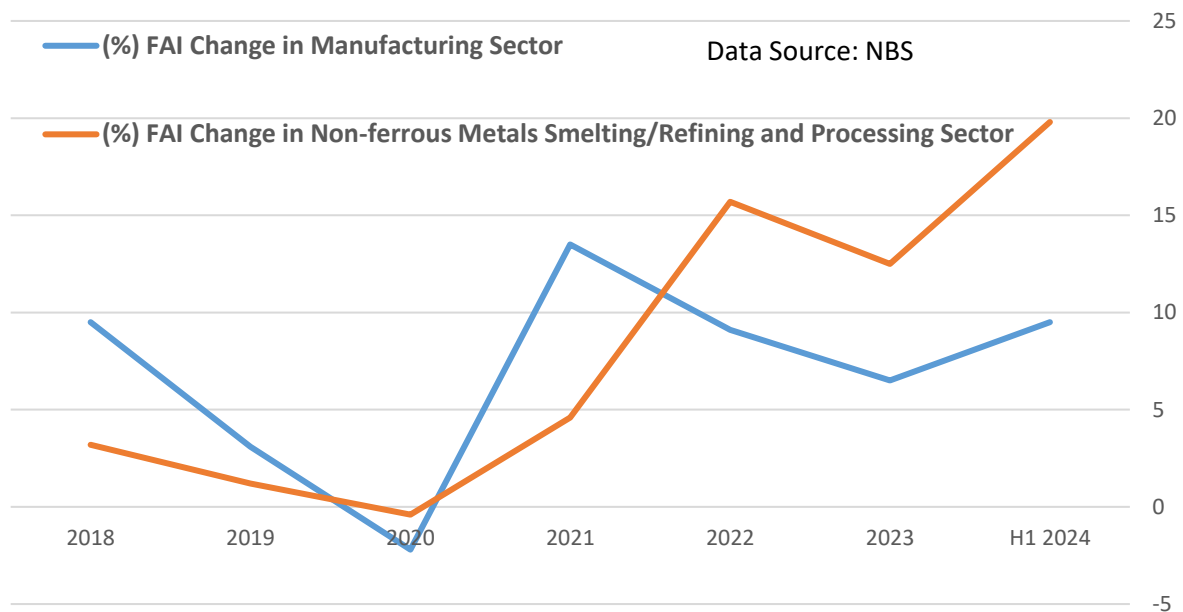
Investment in China has shown signs of slowing, particularly in sectors like real estate and infrastructure. The government has been encouraging investment in high-tech industries and green technologies, but overall investment growth is not as robust as in previous years. This slowdown is partly due to tighter regulations, the need to reduce financial risk, and a cautious approach by both domestic and foreign investors.



Significant declines in both Fixed Asset Investment (FAI) and Real Estate Investment growth rates in China from 2014 to 2023, with particularly sharp contractions in recent years, especially in 2022 and 2023, can be observed in the chart. This downturn suggests a weakening of key sectors in China, which has substantial implications for the global minerals and metals market. As construction and real estate sectors are major consumers of raw materials like steel, cement, iron ore, copper, and aluminium, the reduced investment points to a potential oversupply and subsequent price declines for these commodities. The slowdown in infrastructure spending, as indicated by the declining FAI, further exacerbates this trend, potentially reducing the demand for a wide range of metals. This could negatively impact countries that export these materials to China, leading to lower export revenues and forcing adjustments in global supply chains. Additionally, the reduced demand from China, the world's largest consumer of many minerals and metals, is likely to introduce increased price volatility in global markets, affecting the financial stability of mining companies and related industries. If this trend of reduced investment continues, it may signal a broader structural shift in China's economic model away from investment-led growth, with long-term consequences for global commodity markets, particularly

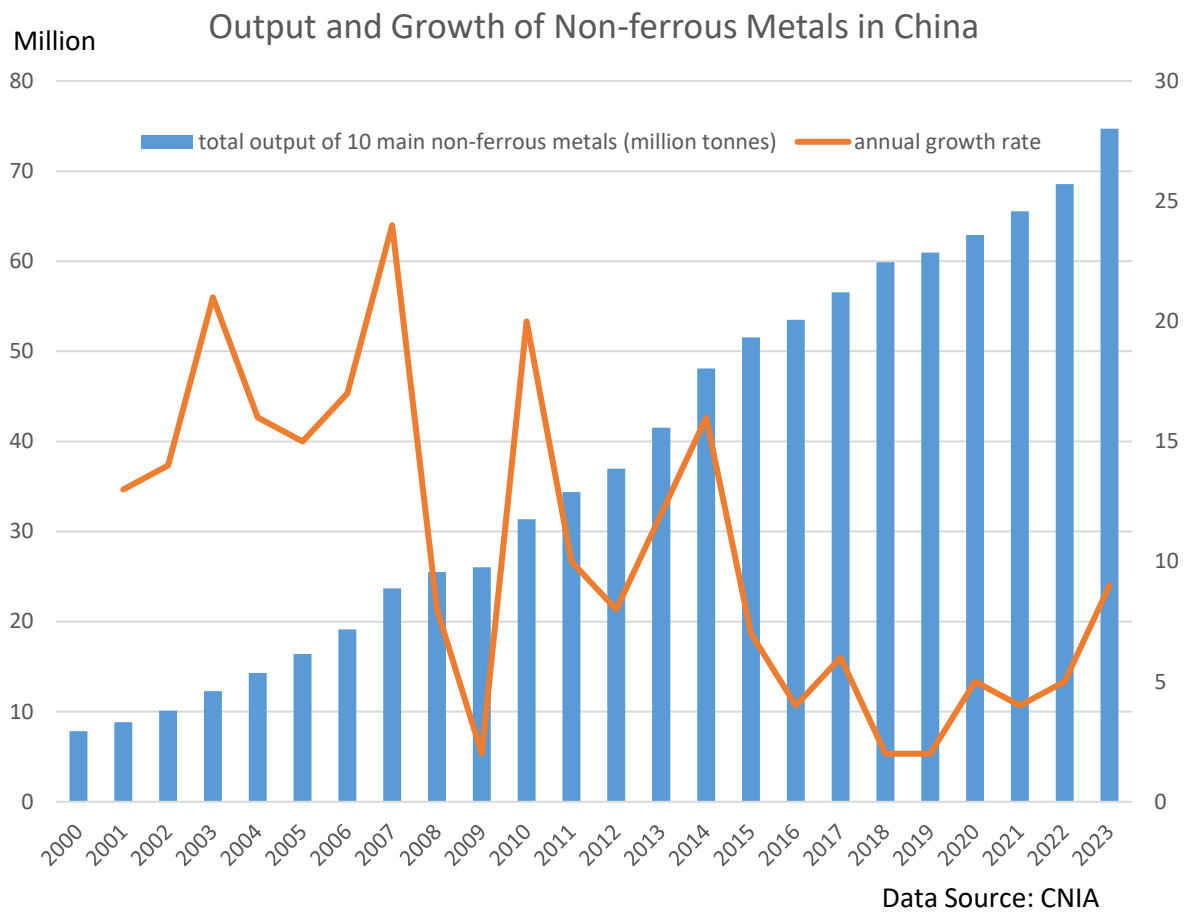
those linked to construction and infrastructure. The overall impact on the minerals and metals market could be significant, leading to lower prices, production cuts, and shifts in global trade patterns as the industry adapts to the changing demand landscape in China.

FAI Growth in Non-ferrous Sector vs FAI Growth in Manufacturing Sector



The chart indicates a divergence in investment trends between China's manufacturing and non-ferrous metals smelting, refining, and processing sectors from 2018 to the first half of 2024. The manufacturing sector saw a decline in Fixed Asset Investment (FAI) from 2018 to 2020, followed by a sharp recovery in 2021, before trending downward again through 2023, with a modest uptick in early 2024. In contrast, the non-ferrous metals sector also experienced a decline in FAI until 2020 but showed a robust and sustained recovery beginning in 2021, consistently outpacing the broader manufacturing sector through 2024. This strong investment growth in the non-ferrous sector suggests increased activity in smelting, refining, and processing operations, likely driven by rising demand for key non-ferrous metals such as aluminium, copper, and nickel. These metals are essential for various high-growth industries, including electronics, electric vehicles (EVs), batteries, and renewable energy technologies, which are crucial in the global shift toward decarbonization. The sustained high levels of investment in the non-ferrous metals sector could lead to significant capacity expansion, enhancing the supply of these critical materials to meet global demand. However, this expansion could also result in downward pressure on prices if supply growth outpaces demand. The stronger investment in non-ferrous metals relative to the overall manufacturing sector may indicate a strategic focus on industries essential for future technological advancements and environmental sustainability. This aligns with global trends prioritizing the development of green technologies and the increasing importance of non-ferrous metals in supporting the global energy transition. Overall, the chart underscores the growing significance of the non-ferrous metals sector within China's economy and its critical role in the broader global market, highlighting how investment patterns are shifting in response to evolving industrial priorities and global market demands.

The significant investment in the non-ferrous metals smelting, refining, and processing sectors suggests that China is expanding its production capacity. As domestic mining output may not be sufficient to meet the growing demand for raw materials, this expansion could necessitate increased imports of non-ferrous raw materials such as bauxite (for aluminium), copper, zinc and lead concentrates, nickel intermediate products, and other critical ores. This ensures a steady supply of inputs for the expanded capacity. This will further China's growing role in global non-ferrous metals production and its influence on global trade dynamics in these critical raw materials.



The chart illustrates the total output of the 10 main non-ferrous metals in China from 2000 to 2023, alongside the annual growth rate of this output. The overall trend shows a significant increase in the total output, which has steadily grown from around 10 million tonnes in 2000 to over 70 million tonnes by 2023. However, the annual growth rate exhibits substantial volatility, with periods of rapid growth followed by sharp declines, particularly noticeable around the 2007-2009 and 2014-2016 periods. In recent years, although output has continued to increase, the growth rate has generally declined, stabilizing at a lower level.

The rise in FAI in the non-ferrous metals sector from 2021 onwards correlates with the increased output of non-ferrous metals observed for the corresponding period. As investment in this sector increased, it likely led to enhanced production capacity, modernization of facilities, and improved efficiencies, which in turn supported higher output levels.

Increasing Trade and Geopolitical Tensions

China remains a global trade powerhouse, but it faces challenges from a more protectionist global environment and ongoing trade tensions. At the same time, China is navigating a complex geopolitical environment marked by rising tensions with the United States, Europe, and neighbouring countries.

China's trade conflicts and geopolitical tensions with its trade partners, particularly with major economies like the United States, the European Union, Japan, and India, have significantly shaped its economic landscape. These conflicts often arise from issues related to trade imbalances, intellectual property rights, market access, and strategic control over critical supply chains, particularly in high-tech and essential industries.

1. U.S.

U.S.-China trade tensions, which accelerated in 2018, profoundly impacted China's business sector by disrupting trade patterns, straining economic growth, and accelerating shifts in industrial strategy. The conflict, initiated when the U.S. imposed substantial tariffs on a wide array of Chinese goods, was driven by concerns over unfair trade practices, intellectual property theft, and forced technology transfers. This aggressive tariff regime not only curtailed Chinese exports but also heightened uncertainty for businesses operating in both domestic and international markets. As a direct consequence, many Chinese companies faced increased costs for raw materials and components, leading to squeezed profit margins and a recalibration of their business strategies. In response to these pressures, China undertook a multifaceted approach to mitigate the adverse effects. The Chinese government implemented a series of fiscal stimulus measures and monetary easing policies to bolster domestic demand and cushion the economy from the external shocks of the trade war. These measures included tax cuts, increased infrastructure spending, and support for small and medium-sized enterprises (SMEs) affected by the trade disruptions. Despite these efforts, the trade issues revealed vulnerabilities within China's supply chains, particularly in high-tech sectors such as semiconductors and advanced manufacturing. The U.S. tariffs and export restrictions underscored the risks of over-reliance on U.S. technology and components, prompting Chinese businesses to intensify efforts to diversify their supply chains and enhance self-sufficiency. This push for greater technological independence led to accelerated investments in domestic R&D and innovation, with a focus on developing homegrown alternatives to imported technologies. Additionally, the trade tensions catalysed a broader strategic shift towards economic decoupling, where both the U.S. and China began to actively seek to reduce their interdependence in critical areas such as technology and rare materials. For Chinese companies, this decoupling meant recalibrating their global supply chains and exploring new markets to mitigate the impact of reduced access to U.S. technology and markets. This shift also involved reassessing global partnerships and forging new alliances to ensure continued growth and stability in an increasingly fragmented global trade environment. Overall, the trade issues underscored the need for Chinese businesses to adapt swiftly to changing geopolitical dynamics, enhancing their resilience and strategic agility in a rapidly evolving global landscape.

2. European Union

The European Union's scrutiny of China's trade practices has had significant repercussions for China's business sector, exacerbating tensions over issues like state subsidies and market access. The EU's response to these concerns has included imposing tariffs and anti-dumping duties on Chinese goods

such as steel and solar panels, which has directly impacted China's export market access. These protective measures have raised the cost of Chinese products in the European market, compelling Chinese manufacturers to either seek alternative markets or enhance their competitiveness through innovation and efficiency. This shift has required Chinese companies to pivot towards emerging markets in Asia, Africa, and Latin America, where competition is less intense and growth opportunities are more promising, but also presents its own set of challenges and uncertainties.

Moreover, increased scrutiny of Chinese investments in Europe has placed additional constraints on China's global investment strategy. The EU has implemented more rigorous investment screening processes, particularly targeting Chinese investments in sensitive sectors such as technology and critical infrastructure. This heightened scrutiny has impeded China's efforts to secure strategic assets and expand its footprint in Europe, slowing the pace of Chinese investment in a region that has traditionally been a key destination for capital inflows. This has forced Chinese firms to navigate a more complex regulatory environment and reconsider their investment strategies to mitigate the risk of regulatory barriers and potential political backlash.

Additionally, the EU's stance has affected technology transfer and collaboration between Chinese and European companies. Restrictions on technology transfers and collaborative projects have hampered China's access to advanced European technologies, which are crucial for sectors like renewable energy and automotive. This has slowed China's technological advancements and innovation in these fields, where European expertise is highly sought after. Chinese firms have had to accelerate their domestic R&D efforts and seek alternative sources of technology and partnerships outside of Europe, which can be both resource-intensive and time-consuming.

In summary, the EU's trade policies and regulatory measures have presented significant challenges for China's business sector. They have forced Chinese companies to adapt by diversifying their markets, navigating a more restrictive investment landscape, and ramping up domestic innovation efforts to counteract the limitations imposed by European trade and investment policies. This dynamic illustrates the broader geopolitical and economic complexities that China faces as it seeks to maintain its global economic influence amidst evolving international trade regulations.

3. Japan and South Korea

Tensions between China, Japan, and South Korea are shaped by historical grievances, territorial disputes, and trade imbalances, which have periodically escalated into trade conflicts. Key issues include disputes over the South China Sea and the Senkaku/Diaoyu Islands, alongside economic frictions that have strained relations. Both Japan and South Korea have increasingly aligned with the U.S. to counter China's regional influence, exacerbating the trade tensions. These geopolitical and economic strains have significant implications for China's business sector, particularly in the realm of supply chains. Japan and South Korea are pivotal in the global supply chains for electronics and automotive sectors, and disruptions in trade relations with these countries can impact Chinese manufacturing and exports. Moreover, the strengthening of regional alliances between Japan, South Korea, and the U.S. has posed a strategic challenge to China's influence in the Asia-Pacific region. This alignment has contributed to a more fragmented and competitive trade environment, compelling China to navigate complex regional dynamics and seek alternative trade and investment opportunities. The evolving regional alliances and trade restrictions have forced Chinese businesses to adapt by

diversifying their supply chains, seeking new markets, and enhancing their competitive edge in a shifting geopolitical landscape.

4. India

The longstanding border disputes between India and China, particularly in the Himalayan region, have influenced their trade relations and economic cooperation. These geopolitical tensions have been heightened by recent border clashes, notably in 2020, which have affected bilateral trade dynamics. In response to these disputes, India has introduced restrictions on Chinese investments and imports, impacting China's export opportunities in the Indian market. India's vast consumer base has traditionally been an important market for Chinese products, including electronics and machinery. However, the new regulatory measures and scrutiny have somewhat constrained market access for Chinese companies, affecting their growth prospects in the region.

Chinese investments in India, especially in the technology sector, have also faced increased challenges. The Indian government has implemented stricter regulations and greater scrutiny of Chinese investments, particularly in critical sectors such as tech startups and infrastructure. These changes have led to a slowdown in new investments and have made it more difficult for Chinese enterprises to operate in India. This is particularly notable given China's interest in India's rapidly growing tech industry, where opportunities for collaboration were once seen as promising.

As a result, the evolving trade and investment environment has impacted the depth of economic cooperation between China and India. While both countries have sought to maintain their economic engagements, the geopolitical tensions have prompted them to explore other trade partners and investment opportunities. For China, the adjustments in the Indian market and investment landscape represent a challenge but also an opportunity to diversify and adapt its strategies. Both nations continue to navigate their complex relationship while looking for ways to foster mutual economic interests and cooperation in a changing global environment.

5. China's Countermeasures

In response to various trade conflicts and geopolitical tensions, China has implemented several countermeasures to address the challenges and mitigate the impact on its economy. These measures have been designed to adapt to changing dynamics and leverage the interdependence between economies.

One of China's primary countermeasures has been the diversification of its trade partnerships. Faced with increased tariffs and trade restrictions from key markets like the United States and the European Union, China has actively sought to expand its economic relationships with other regions. Initiatives such as the Belt and Road Initiative (BRI) have played a central role in this strategy, allowing China to forge new trade routes and investment opportunities across Asia, Africa, and Latin America. By establishing and strengthening trade ties with a broader range of countries, China aims to reduce its reliance on any single market and mitigate the effects of trade tensions with major economies.

China has also focused on building more resilient and self-sufficient domestic supply chains. The disruptions caused by trade conflicts, particularly with countries like Japan, South Korea, and the U.S., highlighted vulnerabilities in China's reliance on foreign technology and components. In response, China has increased investment in domestic industries such as semiconductors, advanced

manufacturing, and renewable energy. By fostering innovation and reducing dependency on external sources, China aims to enhance its economic resilience and maintain its competitive edge in crucial sectors.

China has been actively working to expand regional economic integration as a countermeasure to geopolitical tensions. For example, China has played a leading role in regional trade agreements such as the Regional Comprehensive Economic Partnership (RCEP), which includes several key Asian economies. This agreement aims to lower trade barriers and increase economic cooperation among member countries, thereby creating new opportunities for Chinese businesses and fostering a more integrated regional market. By enhancing regional trade relationships, China seeks to bolster its economic influence and create a counterbalance to the impact of trade restrictions imposed by Western countries.

China's countermeasures also reflect an understanding of the economic interdependence between China and its trade partners. Despite the challenges posed by trade conflicts, many economies around the world, including those of the U.S., EU, and neighbouring Asian countries, remain deeply interconnected with China's economy. For example, China is a major trading partner and manufacturing hub for many countries, and its role as a global supply chain linchpin underscores the mutual dependence between economies. By emphasizing these interdependencies, China has sought to negotiate and manage trade tensions in a way that acknowledges the reciprocal nature of global economic relationships.

To offset the impact of reduced exports and external trade pressures, China has also focused on boosting domestic consumption. Policies aimed at increasing consumer spending, enhancing social welfare, and stimulating domestic demand are designed to create a more robust and resilient internal market. By shifting some emphasis from export-driven growth to domestic consumption, China aims to reduce its vulnerability to external trade shocks and build a more balanced and sustainable economic model.

China's countermeasures in response to trade conflicts and geopolitical tensions illustrate a multifaceted approach to navigating the complexities of global economic interdependence. By diversifying trade partnerships, strengthening domestic supply chains, expanding regional integration, and enhancing domestic consumption, China seeks to mitigate the impact of external pressures while capitalizing on the interconnected nature of the global economy. These strategies not only address immediate challenges but also position China for long-term economic resilience and growth in an increasingly interconnected world.

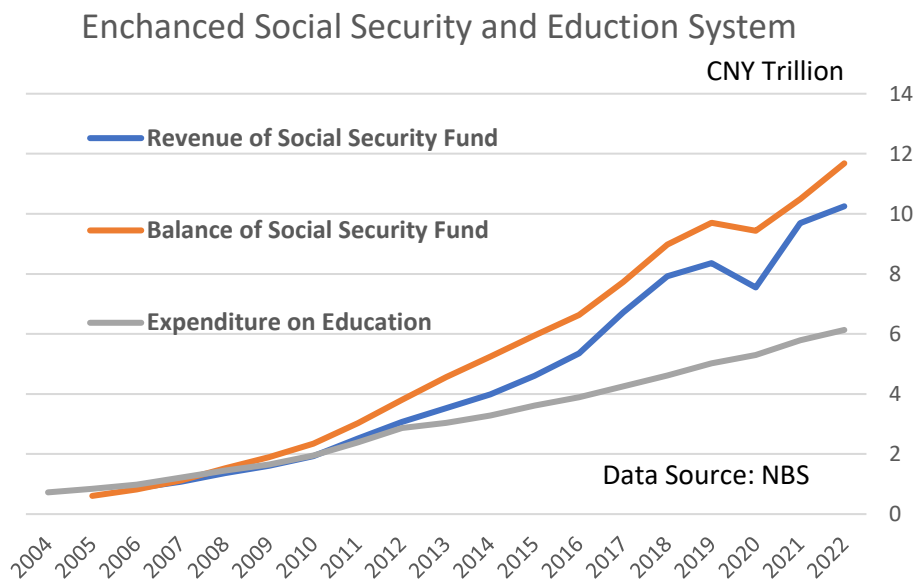
Future Prospects for China's Economy

In recent years, China has implemented a range of policy measures and economic reforms aimed at revitalizing its economy amidst various domestic and international challenges. These measures reflect a strategic shift towards sustainable growth, innovation, and greater economic resilience.

China's shift from an export-driven economy to one focused on boosting domestic consumption represents a strategic realignment aimed at fostering a more balanced and resilient economic model. This transition is supported by several key policies designed to enhance consumer spending and improve living standards. The government has significantly invested in social welfare programs,

including healthcare, pensions, and education, which has bolstered consumer confidence and reduced financial uncertainties, thereby encouraging greater spending. Enhanced social welfare and targeted spending incentives have not only improved quality of life but also supported economic resilience by diversifying economic activity away from heavy dependence on exports.

Social Security Net

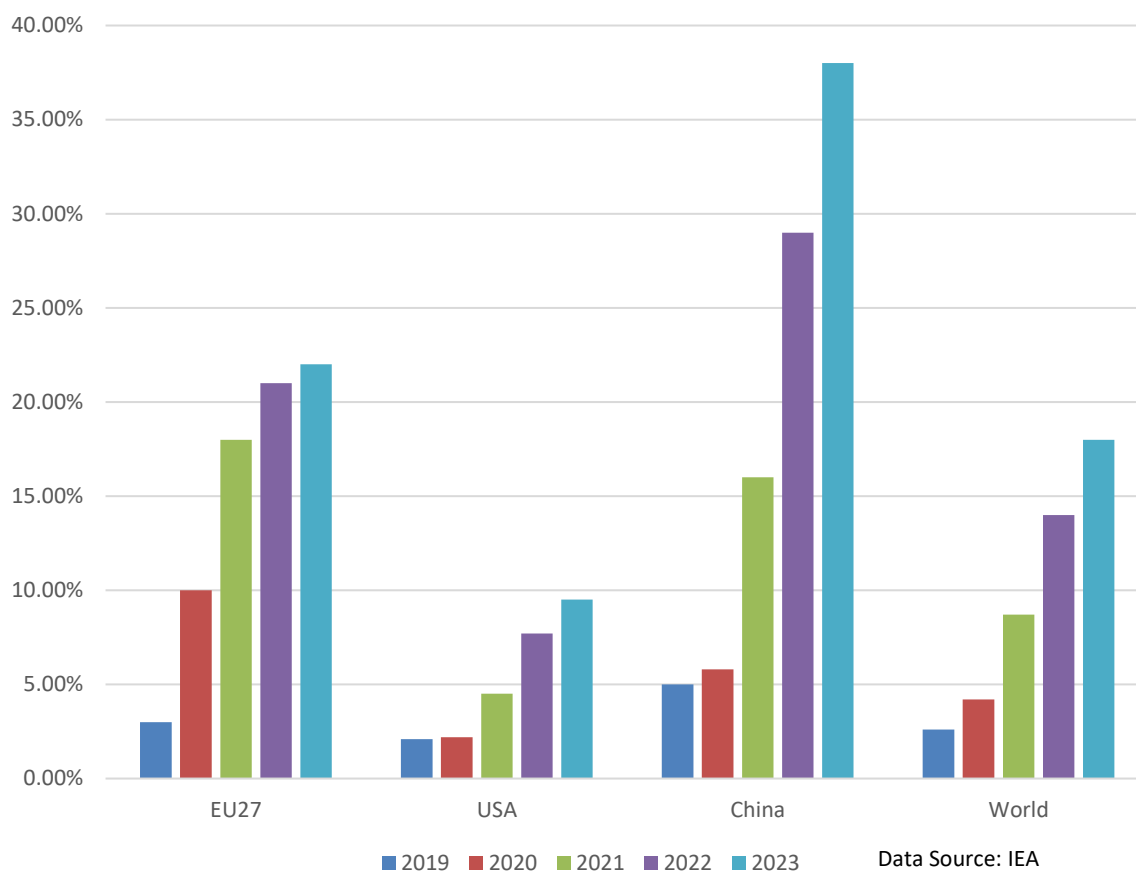


The steady growth in China’s social security fund and education expenditure highlights the critical role these investments play in the country’s long-term stability and development. A robust social security system is essential as China faces a rapidly aging population, ensuring financial support for the elderly and vulnerable, which in turn fosters social stability and economic security. Simultaneously, significant investment in education is key to developing a skilled workforce, crucial for China’s transition to a knowledge-based economy. By enhancing access to quality education, the government is not only cultivating human capital but also working to reduce social inequality, providing more opportunities for upward mobility. These combined efforts in social security and education are fundamental to China’s broader goals of sustainable development, economic resilience, and social cohesion, positioning the country to better manage demographic challenges and promote a more inclusive society.

Incentives for EV Adoption and Home Purchase

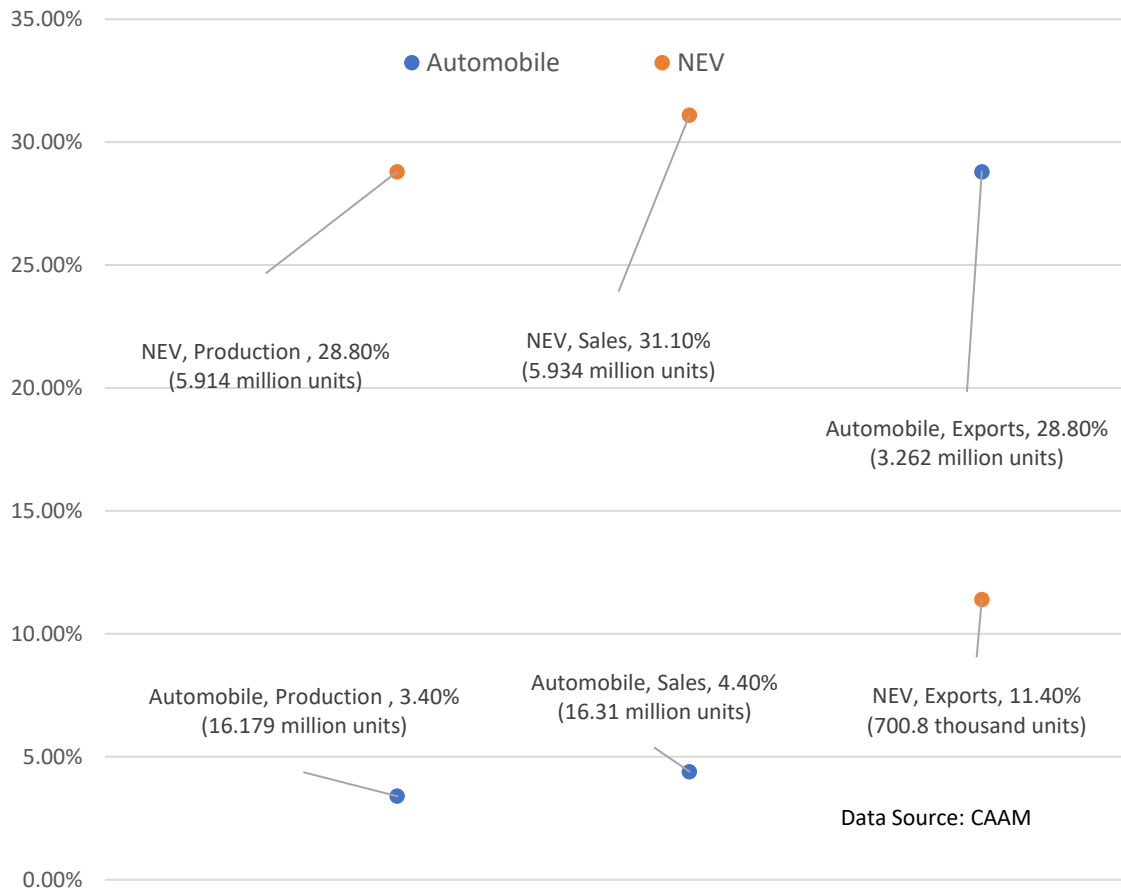
To stimulate consumption further, China has introduced subsidies for electric vehicles and tax incentives for home purchases. These measures have led to growth in specific sectors contributing to overall economic stability and reducing reliance on external trade.

EV Sales Share in Major Markets 2019-2023 (Cars: BEV/PHEV)



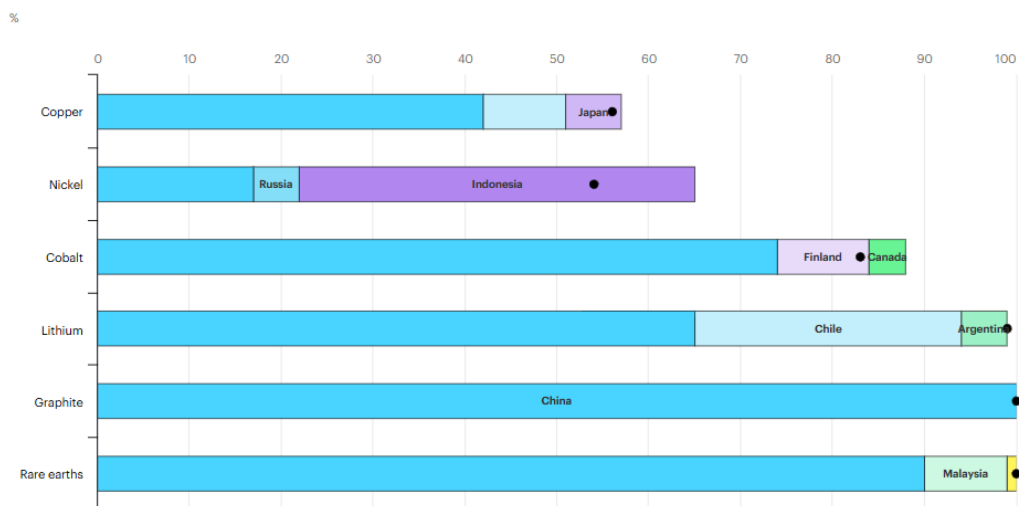
In 2022, China implemented substantial subsidies and incentives to promote the adoption of new energy vehicles (NEVs), reflecting its commitment to green technology and reducing carbon emissions. The central government allocated approximately ¥14 billion (\$2 billion) in direct subsidies, with amounts ranging from ¥10,000 to ¥18,000 (\$1,500 to \$2,600) per vehicle, depending on battery range. Additionally, the 10% purchase tax exemption on NEVs provided significant financial relief, saving consumers an estimated ¥45 billion (\$6.5 billion) that year. In major cities like Beijing and Shanghai, where license plates can cost over ¥100,000 (\$14,000), NEV owners benefited from exemptions, effectively reducing the overall cost of car ownership. To further support the NEV market, the government committed billions of yuan to expand charging infrastructure, with plans to build 36,000 new charging stations by 2025. Individual subsidies for home charging stations ranged from ¥2,000 to ¥5,000 (\$290 to \$720), making it more convenient and cost-effective for consumers to own electric vehicles. These measures have played a critical role in accelerating the adoption of NEVs, bolstering China's position as a global leader in the electric vehicle industry. The scale of subsidies, particularly for NEVs and property, has significantly boosted domestic consumption. The automotive sector, buoyed by EV incentives, saw BEV and PHEV sales surpass 8.1 million units in 2023, accounting for nearly 38% of all sales in China. This surge not only supported GDP growth but also helped stabilize the economy during periods of global uncertainty. The chart highlighting the rapid increase in EV market share in China from 2019 to 2023 underscores the country's significant impact on global metal demand, particularly for lithium, cobalt, nickel, and copper.

Automobile Industry Jan.- Jul. 2024 China



In 2024, the significance of NEV continues to shine with both production and sales far outpacing the overall automobile industry. China is at the forefront of the global electric vehicle (EV) revolution, not only as the largest market for EVs but also as a critical player in the supply of the essential metals required for their production.

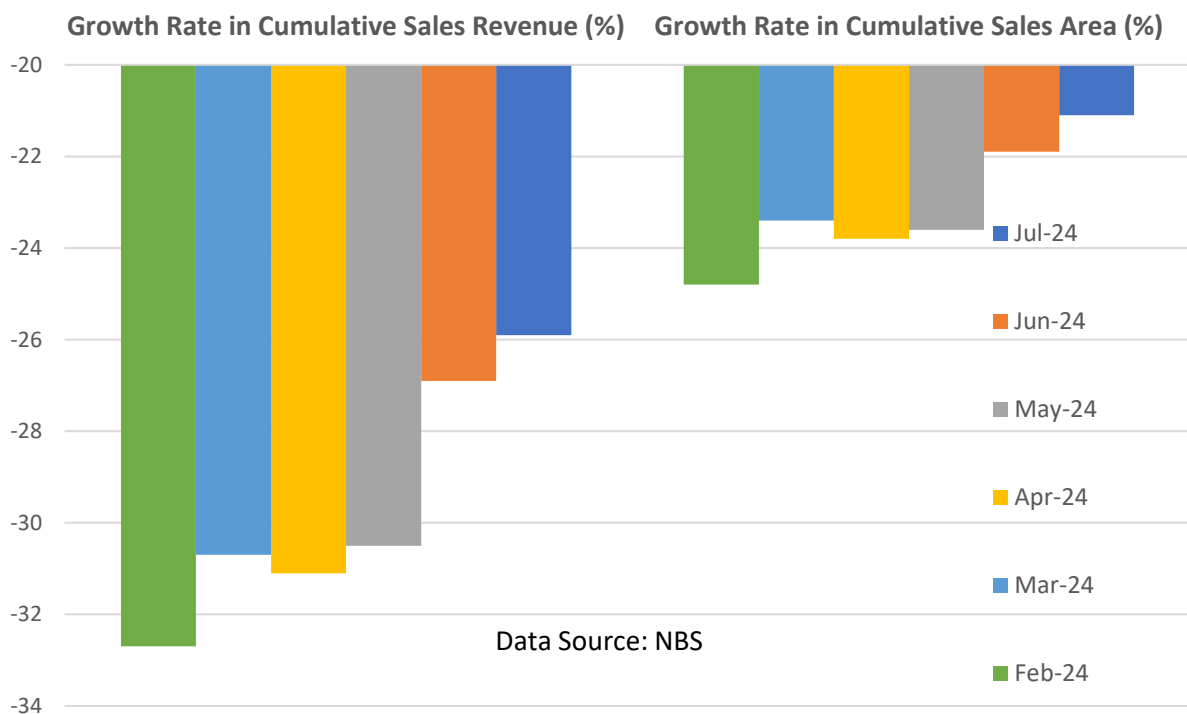
China has strategically positioned itself within the global supply chain for these key materials. It is a dominant force in lithium refining and battery production, with control over a substantial portion of the world’s lithium processing capacity. Through strategic investments in lithium mines, particularly in Australia and Chile, China has secured a consistent supply of this crucial metal to fuel its growing EV industry. In the realm of cobalt and nickel, China’s influence is equally pronounced. The country plays a pivotal role in cobalt mining, particularly in the Democratic Republic of Congo, which supplies the majority of the world's cobalt. Additionally, China has been expanding its nickel refining capabilities, crucial for manufacturing high-energy-density batteries that are increasingly in demand as EV technology advances. Copper, another essential metal for EV production and the necessary charging infrastructure, is also significantly influenced by China. As both a major producer and consumer of copper, China’s growing EV industry drives global copper demand, reinforcing its influence on global supply chains. The Chart below from IEA shows the shares of the top three producing countries in processing of selected minerals in 2022 with China taking an obvious lead.



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● China ● Russia ● Chile ● Indonesia ● Japan ● Finland ● Canada ● Argentina ● Malaysia ● Estonia ● 2019 top 3 share

In the housing market, key incentives include lowering the down payment requirements to lighten the initial financial burden by tens of thousands of yuan per buyer, offering mortgage interest rate discounts to save buyers tens of thousands of Yuan over 30 years, and reducing the deed tax from 3% to 1% for first-time homebuyers. All told, these incentives have helped to stabilize prices in major cities and support demand in smaller cities. It also prevented a meltdown in the real estate market, which is crucial given that property and related industries account for a significant portion of China’s GDP.



Data Source: NBS

The chart reflects a period of declining growth in both cumulative sales revenue and sales area within China's real estate sector across several months in 2024. While these trends indicate a slowdown, they

also present an opportunity for the economy to adjust and evolve. The real estate sector has long been a key driver of China's growth, and a moderation in this area might signal a shift towards a more balanced economic model. Though the decline could suggest a cautious consumer sentiment and pose challenges for developers, it also encourages diversification and innovation within the economy. This phase prompted the government to introduce supportive measures to stabilize the market, potentially leading to more sustainable growth patterns. As the real estate market recalibrates, there may be short-term impacts on related industries and employment, but it also opens the door for new growth opportunities in other sectors. The interconnected nature of real estate with various facets of the economy underscores the importance of careful management and responsive policy-making to ensure that any adjustments contribute positively to the overall economic landscape. While the data highlights current challenges, it also suggests the potential for positive change, encouraging a more measured and thoughtful approach to economic development that could benefit both the real estate sector and the wider economy in the long run.

The decline in China's real estate sector is likely to reduce demand for key metals like steel, copper, and aluminium. These metals are essential for construction, and a slowdown in building activity directly impacts their consumption. With less demand from the real estate sector, production levels in China's metal industries may decrease, leading to potential oversupply and downward pressure on prices. This demand reduction could also ripple through global commodity markets, affecting prices and export revenues for countries that supply metals to China.

Significant Growth in Renewable Energy

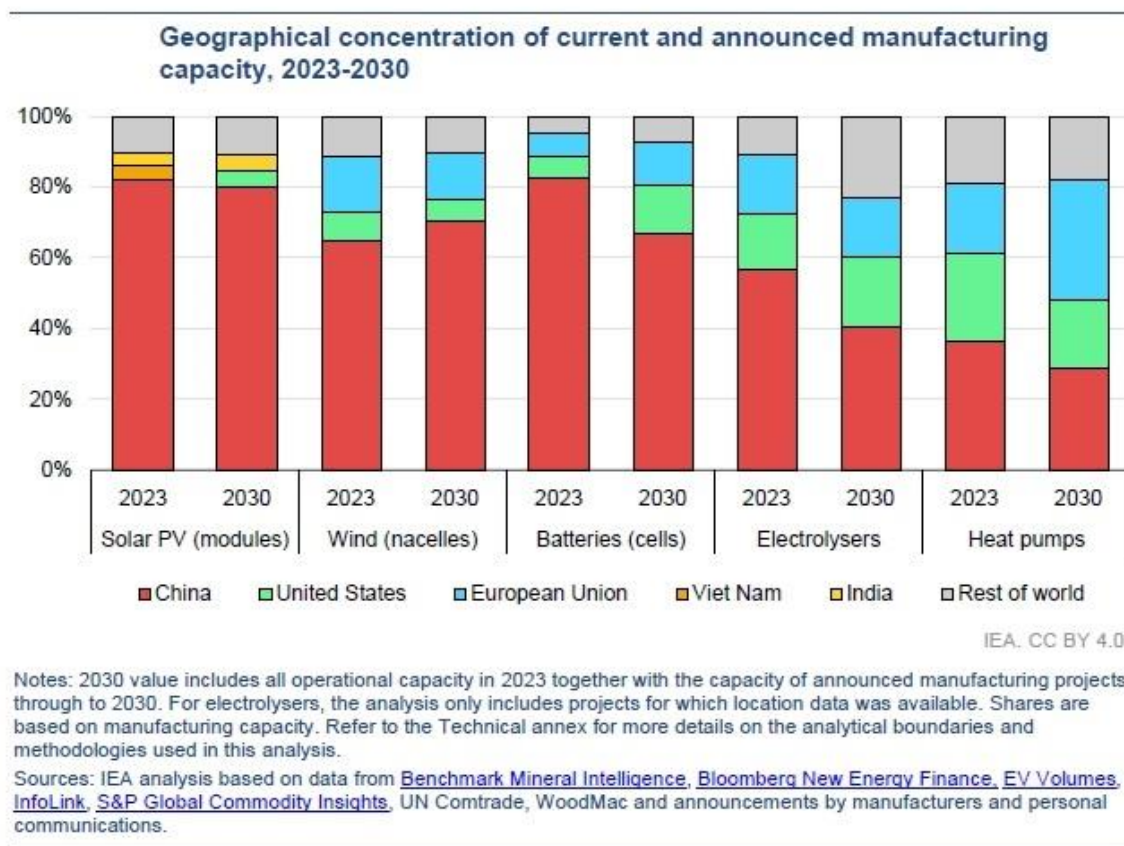
According to data released by the China National Energy Administration, as of the end of June 2024, China's installed renewable energy capacity reached 1.653 billion kilowatts, reflecting a 25% year-on-year growth and accounting for 53.8% of the country's total power generation capacity. This milestone underscores the continuous breakthroughs China is making in renewable energy capacity.

In the first half of 2024, the country added 134 million kilowatts of renewable energy capacity, a 24% increase compared to the same period in the previous year. Remarkably, renewable energy constituted 88% of China's total new power generation capacity. Solar energy led the expansion, with an impressive addition of 102 million kilowatts, followed by wind energy at 25.84 million kilowatts, hydropower at 4.99 million kilowatts, and biomass power at 1.16 million kilowatts.

By the end of June, China's installed capacities in hydropower, wind power, solar power, and biomass power had reached 427 million kilowatts, 467 million kilowatts, 714 million kilowatts, and 45.3 million kilowatts, respectively. For the first time, the combined installed capacity of wind and solar power surpassed that of coal-fired power. This achievement is a significant milestone in China's energy transition, further underscoring its commitment to reducing reliance on fossil fuels.

China plays a dominant role in the world's renewable energy manufacturing capacity, particularly in the production of solar panels, wind turbines, and energy storage systems. As of 2023, China produced around 80% of the global supply of solar photovoltaic (PV) panels, making it the largest manufacturer by far. It is also a leading producer of wind turbines, supplying both onshore and offshore markets. Chinese companies, such as CATL, lead in the production of batteries, especially lithium-ion batteries critical for energy storage and electric vehicles (EVs).

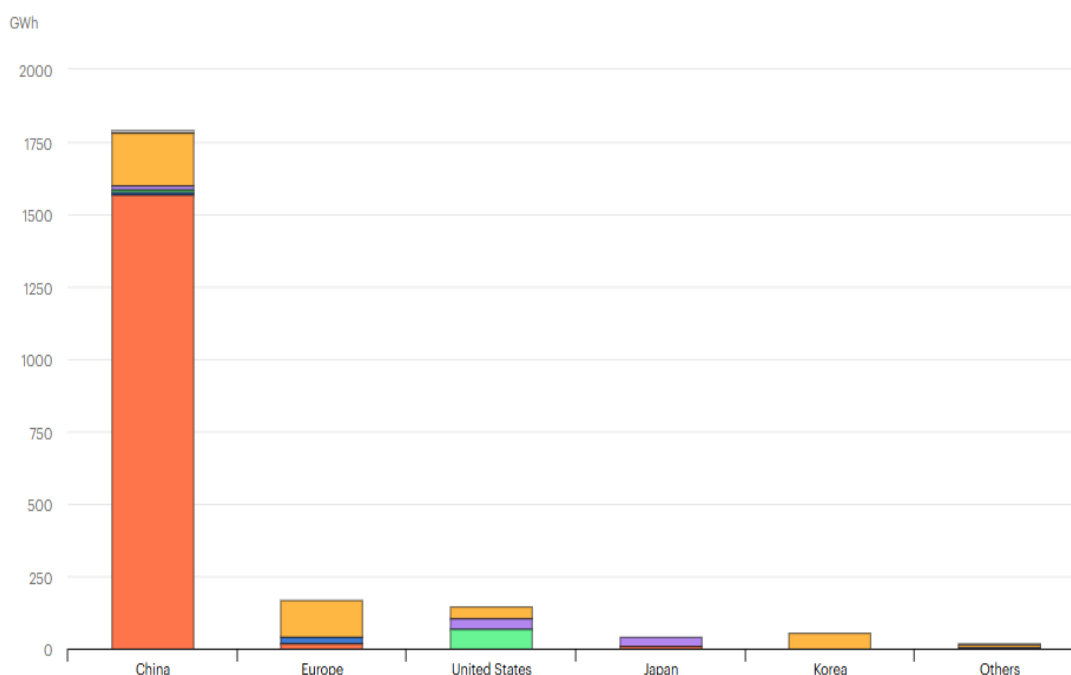
China’s manufacturing dominance enables it to supply renewable energy technologies worldwide, contributing to the global clean energy transition. Through initiatives like the Belt and Road, China exports renewable energy technologies and builds infrastructure in developing countries, further expanding its global influence in renewable energy manufacturing. This role ensures China remains a critical player in advancing global renewable energy capacity.



EV Battery and Energy Storage

As the world's largest producer of EV batteries, China accounts for approximately 80% of global production capacity, equating to over 600 gigawatt-hours (GWh). Major Chinese companies, including CATL and BYD, play a pivotal role in this sector, with CATL alone holding around 41% of the global market share currently. The country’s annual EV battery production exceeds 200 GWh, and its manufacturers export about 30% of their output, underscoring their strong international presence. China’s leadership is further reinforced by substantial investments in research and development, amounting to billions of dollars, which drive advancements in battery technology such as improvements in energy density, battery life, and performance. Additionally, China’s strategic control over critical raw materials—processing over 60% of the world’s lithium and holding significant shares in cobalt and nickel supplies—enhances its competitive edge in the market.

Regional EV Lithium-ion Battery Manufacturing Capacity by Manufacturer Headquarters, 2023



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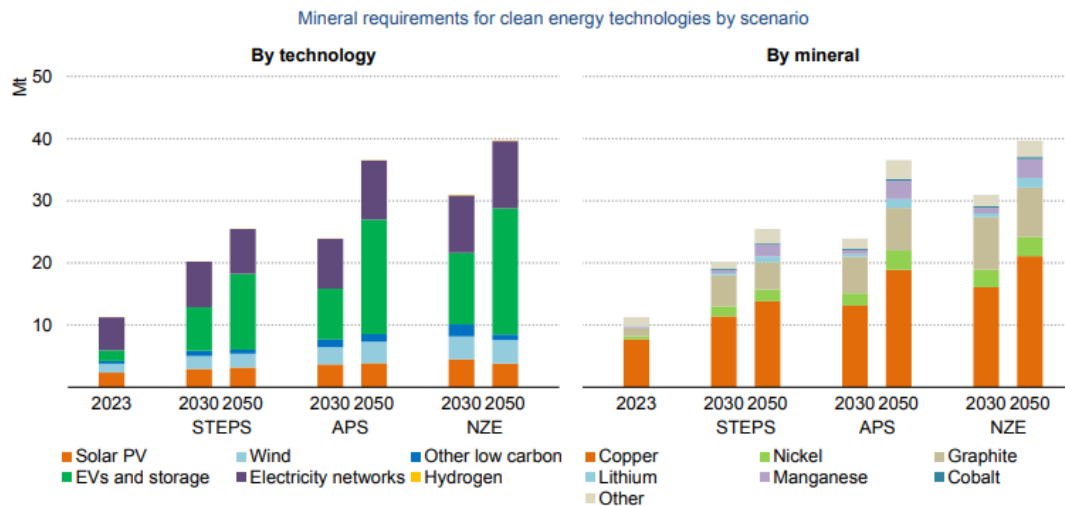
● Chinese headquarters ● European headquarters ● United States headquarters ● Japanese headquarters ● Korean headquarters ● Other headquarters locations

In the realm of Battery Energy Storage, China has also made remarkable strides. By the end of 2023, the country’s total installed BES capacity had surpassed 500 GWh, reflecting a rapid expansion in both domestic and international markets. China adds over 100 GWh of new BES capacity annually and is projected to reach 1,000 GWh by 2030. This growth is driven by the integration of battery storage with renewable energy sources, government policies supporting clean energy, and the expansion of large-scale storage solutions. China’s dominance in BES mirrors its broader leadership in energy storage technologies and its commitment to advancing renewable energy integration. Overall, China’s commanding presence in both the EV battery and BES markets highlights its pivotal role in shaping the future of clean energy and transportation, driven by technological innovation, strategic resource control, and substantial investments in industry growth.

The growing demand for renewable energy leads to exponential demand for non-ferrous metals due to their essential roles in modern energy technologies. Copper, for instance, is vital for electrical wiring in solar panels, wind turbines, and energy storage systems, driven by the surge in solar installations and electric vehicle infrastructure. Aluminium, valued for its lightweight and corrosion-resistant properties, is used in solar panel frames and wind turbine towers. Nickel’s importance lies in its role in high-capacity batteries for energy storage and electric vehicles, with the rise in battery technology fuelling its demand. Lithium, crucial for rechargeable batteries in both energy storage systems and electric vehicles, is experiencing increased demand due to the expansion of these technologies. Rare Earth Elements (REEs) like neodymium and dysprosium are integral to the magnets used in wind turbine generators and other advanced renewable technologies, spurred by the growth in wind energy.

Zinc, used for galvanizing steel components to prevent corrosion, supports the construction of renewable energy infrastructure such as wind turbines and solar panel mounts. Collectively, the shift towards renewable energy and the electrification of various sectors is driving up the demand for these non-ferrous metals, significantly impacting global markets and supply chains as renewable technologies continue to advance and expand.

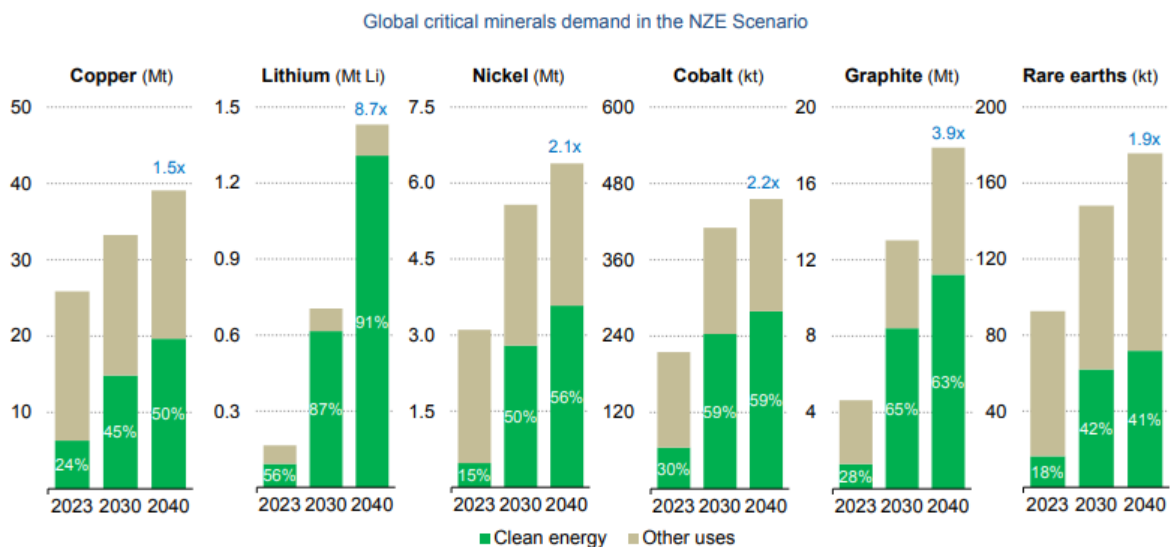
Mineral demand for clean energy technologies doubles between today and 2030 in the STEPS and APS and grows by almost three times in the NZE Scenario



Note: Includes most of the minerals used in various clean energy technologies but does not include steel and aluminium.

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Limiting global warming to 1.5 °C, as in the NZE Scenario, means very rapid growth in demand for key minerals



Notes: The figures for copper are based on refined copper. Those for rare earth elements are for magnet rare earth elements only. Growth rates (in blue) are between 2023 and 2040.

IEA. CC BY 4.0.

New quality productive forces

New quality productive forces represent the next stage in advanced productivity, driven by technological breakthroughs, innovative allocation of production factors, and deep industrial transformation. These forces focus on enhancing the quality of workers, production tools, and labor objects. Workers with higher education and skills, including top scientific and technological talents, are key to driving innovation. Advanced production tools, characterized by technologies such as artificial intelligence, big data, and industrial internet, increase efficiency, reduce carbon emissions, and support smarter manufacturing. Labor objects are also evolving, with new materials and data becoming critical elements in production. The integration of these factors helps expand production capabilities beyond traditional limitations, enabling greater productivity. Strategic industries like new energy vehicles, lithium batteries, and artificial intelligence are pivotal in driving this shift, with China advancing in these areas through technological and industrial upgrades. Efficient coordination among these factors is essential for maximizing resource allocation, improving productivity, and driving economic growth. China's focus on high-tech industries, digital transformation, and the integration of real and digital economies lays the foundation for leading the next generation of productivity. This new form of productivity will transform industrial practices, fostering innovation and expanding markets while enhancing supply chains and manufacturing processes through smarter, more sustainable approaches.

Conclusions

China's remarkable economic growth over the past several decades has cemented its position as a dominant force in global markets, particularly in the base metals industry. As one of the world's largest consumers of resources, China's demand for base metals such as copper, lead, zinc, aluminium and nickel has driven global production and trade flows.

China's economic rise since its 1978 reforms has been unprecedented. With policies encouraging openness, investment, and industrialization, China became the world's second-largest economy in nominal terms and the largest by purchasing power parity (PPP). The country's urbanization and infrastructure boom required vast quantities of base metals, fuelling global demand for materials essential to construction, manufacturing, and energy production.

By 2023, China consumed more than 50% of the world's base metals output, a figure that underscores its reliance on metals-intensive sectors. Infrastructure projects, such as the Belt and Road Initiative (BRI), have further amplified this demand by necessitating large volumes of steel, copper, and aluminium. Additionally, China's role as a global manufacturing hub, producing goods ranging from electronics to automobiles, has reinforced its need for a steady supply of metals. The country's integration into global supply chains means that fluctuations in China's economy have far-reaching effects on the global base metals market.

However, China's economic model, historically driven by exports, investment, and resource consumption, is beginning to face challenges. The country's demographic profile is shifting, with an aging population and declining birth rates threatening future labor force growth. At the same time, a real estate crisis and mounting debt in the property sector are affecting construction activity, which has been a major driver of base metals consumption. These factors indicate that China may be approaching a turning point in its economic trajectory, with implications for its demand for raw materials.

The real estate and construction sectors have historically been the cornerstone of China's demand for base metals. Rapid urbanization over the past few decades has led to an unprecedented construction boom, with skyscrapers, highways, and railways requiring massive quantities of steel, aluminium, and copper. However, the real estate sector is now facing significant headwinds. Major developers, like Evergrande, have been burdened with debt, and there is concern about overbuilding, particularly in smaller cities where demand for new housing is dwindling. This slowdown in construction activity directly impacts the consumption of base metals.

At the same time, China's government has been proactive in addressing the real estate crisis. Measures such as liquidity support for developers, easing of mortgage restrictions, and policies aimed at promoting urbanization have been implemented to stabilize the market. The extent to which these interventions succeed will determine the future demand for metals in the construction sector.

Infrastructure development, a key driver of China's economic growth, continues to support metal consumption. Large-scale projects such as the BRI, which focuses on building infrastructure across Asia, Europe, and Africa, require significant amounts of base metals. The push for urbanization, particularly the development of smart cities, is expected to sustain demand for steel, aluminium, and other materials. However, as China transitions to a more mature stage of urbanization, the intensity of metal usage per unit of economic growth may decline, signalling a shift in the metals market.

As China seeks to reduce its reliance on traditional, heavy industries and shift towards a more sustainable economic model, the renewable energy and electric vehicle (EV) sectors have emerged as critical drivers of base metals demand. China is already a global leader in renewable energy capacity, with its installed solar and wind power capacity reaching record levels. The production and installation of these renewable energy systems require large amounts of copper, aluminium, and rare earth elements.

The EV industry in China is another rapidly growing sector, driven by government incentives and global demand for cleaner transportation. As the world's largest producer of EV batteries, China controls more than 80% of global production capacity. The production of lithium-ion batteries, essential for EVs and energy storage systems, requires significant quantities of lithium, cobalt, nickel, and other critical metals. This surge in battery production is expected to sustain strong demand for these metals, particularly as EV adoption continues to grow both domestically and globally.

Moreover, China's dominance in the processing of critical raw materials, such as lithium and rare earth elements, enhances its position in the global supply chain. As the world transitions to cleaner energy and electric vehicles, China's influence on the supply and demand dynamics of these metals will grow. The shift towards green technologies and the electrification of transportation will not only reshape China's industrial landscape but also have far-reaching implications for global metals markets.

One of the key challenges facing China's economy is its demographic shift. The country's population is aging rapidly, with the birth rate in decline. This demographic transition poses risks to long-term economic growth, as a shrinking labor force could reduce productivity and slow down consumption growth. An aging population also increases the demand for healthcare and social services, potentially diverting resources from investment in other sectors, including infrastructure.

Despite these challenges, the Chinese government is actively seeking ways to boost domestic consumption. Policies aimed at increasing household incomes, improving social safety nets, and promoting consumer spending are being implemented. As China shifts its economic model from investment-driven growth to consumption-led growth, the demand for consumer goods, automobiles, and electronics, all of which require base metals, is expected to rise. However, the transition to a consumption-driven economy may result in a lower overall demand for raw materials compared to the investment-heavy growth model that dominated previous decades.

China's geopolitical environment and its trade relations with other countries significantly influence its demand for base metals. Trade tensions with the United States and other Western countries have created uncertainty in global markets, leading to disruptions in supply chains and fluctuations in demand for metals. Additionally, tariffs, trade barriers, and export restrictions have impacted the flow of critical raw materials, such as aluminium and steel, affecting both domestic industries and global supply chains.

In response to these challenges, China has sought to diversify its trade relationships and reduce its reliance on traditional markets. Efforts to strengthen economic ties with countries in Africa, Latin America, and Asia are part of this strategy. Moreover, China's focus on developing domestic capabilities in industries such as semiconductors and renewable energy reflects its intent to reduce dependence on foreign technology and materials. These strategies will shape the future demand for specific base metals, as China builds up its capacity in high-tech and green industries.

Looking ahead, China's demand for base metals is expected to evolve in response to several key factors. While the real estate sector may experience slower growth, the continued emphasis on infrastructure development, particularly in the context of smart cities and renewable energy projects, will sustain demand for metals like steel, aluminium, and copper. The rapid expansion of the EV and battery industries is poised to drive long-term demand for critical metals such as lithium, cobalt, and nickel.

At the same time, China's efforts to address its demographic challenges and shift towards a consumption-driven economy may lead to a more moderate growth trajectory for metal demand. The country's commitment to environmental sustainability, through policies promoting green technologies and carbon neutrality, will likely reshape its industrial landscape, with increased demand for metals used in renewable energy systems and electric vehicles.

In conclusion, China's role in the global base metals market remains pivotal, even as its economy undergoes significant structural changes. The country's transition towards a more sustainable, consumption-led model, combined with its leadership in renewable energy and EV production, will continue to drive demand for base metals, albeit with shifting dynamics. As China navigates the challenges of demographic shifts, real estate market fluctuations, and geopolitical tensions, its influence on global metals markets will remain profound, shaping the future of industries that depend on these critical materials.