The Chinese Economy: Past, Present and Future

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- Chinese Economic Fundamentals
- The Chinese Economic Record since 1949
- Beyond Economic Indicators
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- The Future of the Chinese Economy
- Concluding Remarks

Introduction

- The objective of this lecture is to provide a basic understanding of the past, present and future of the Chinese economy.
- The Chinese economy is extremely complex and diverse; and faces many challenges as well as opportunities. It is impossible to cover everything in a single lecture. We hope to provide a "big-picture" view.
- We begin by looking at the Chinese economy in the context of the global economy.
- We next examine the Chinese economic fundamentals.
- Then we review the Chinese economic record since the establishment of the People's Republic of China in 1949.

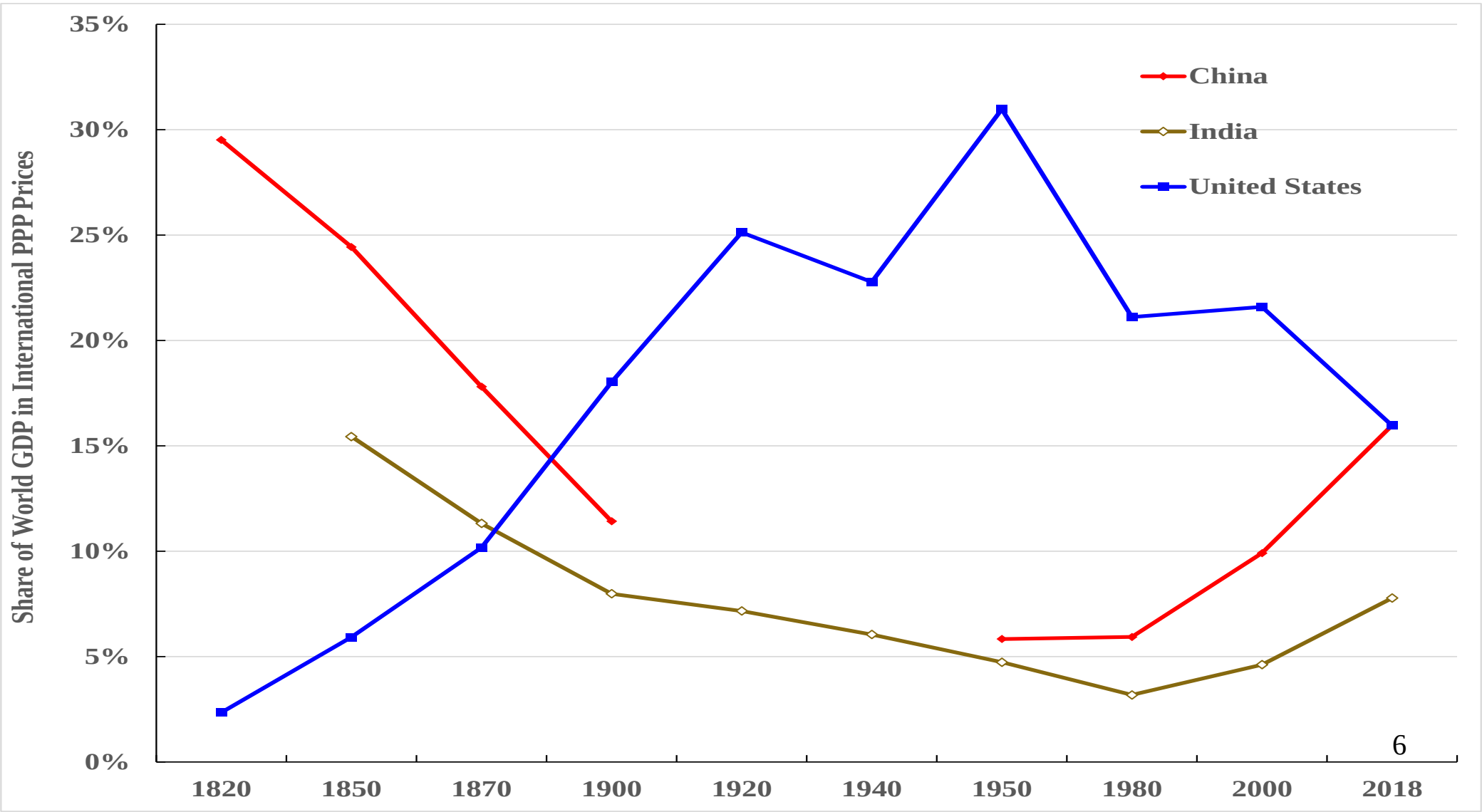
Introduction

- This will be followed by an assessment of the key welfare indicators other than real GDP and real GDP per capita.
- We then discuss the principal Chinese economic development strategies.
- We also speculate on the future of the Renminbi, the "people's currency".
- Finally, we make some projections of the future.
- We end with brief concluding remarks.

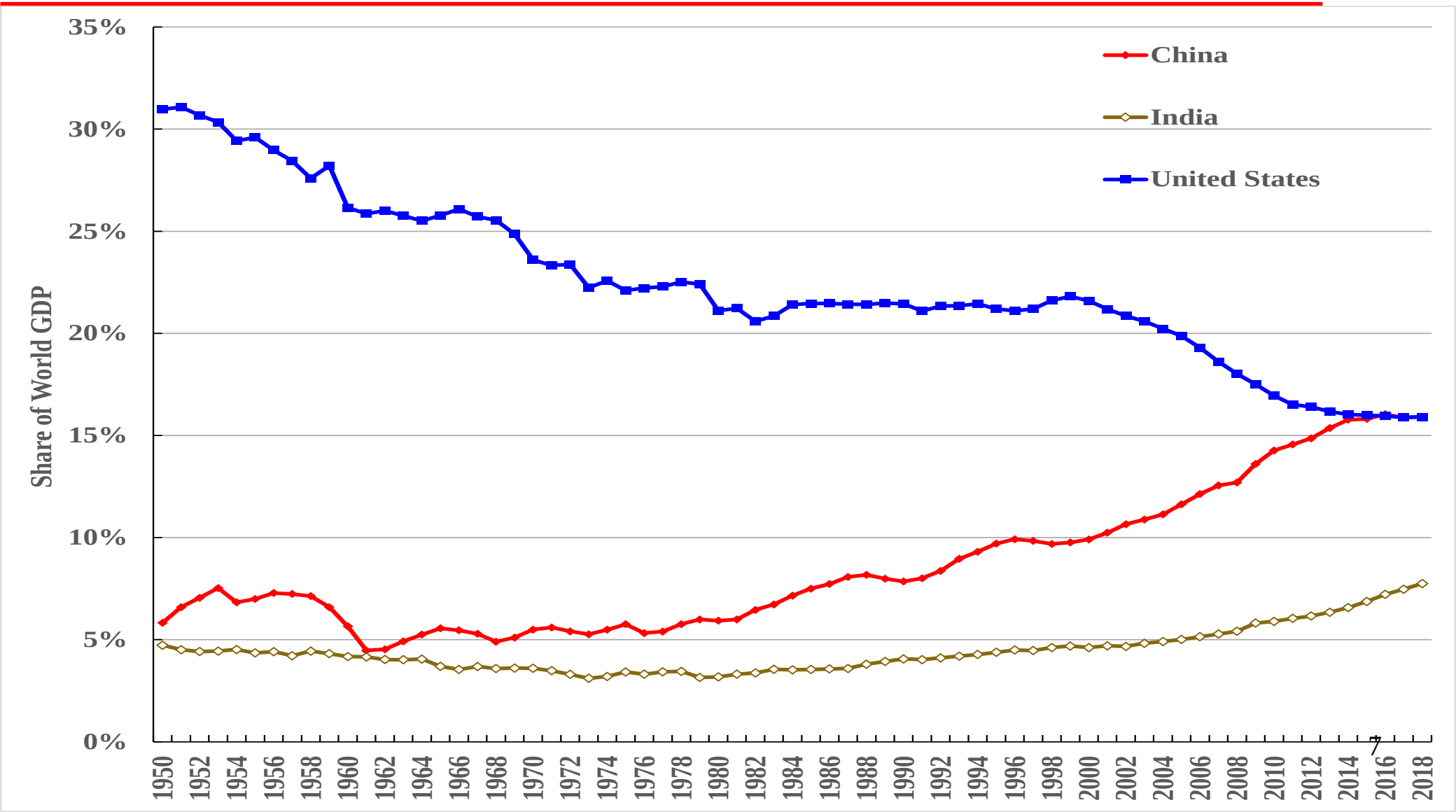
China in the World Economy

- We start with a chart showing the shares of China, India and the U.S. of world GDP since 1820, using data from the (Angus) Maddison Project Database. The data rely on "Purchasing Power Parity (PPP)" international prices, and hence generate slightly different results from those studies that use market prices at official exchange rates.
- 1820 was the last year of the reign of Emperor Jiaqing (嘉慶, 1796-1820) of the Qing Dynasty. Emperor Jiaqing was the son and successor of Emperor Qianlong (乾隆, 1735-1796), under whom China achieved the zenith of its power and wealth. At the time, China supposedly accounted for more than 30 percent of the then world GDP, India between 15 and 20 percent, and the U.S. less than 3 percent.
- The U.S. share of world GDP rose steadily to reach a peak of over 30 percent in the aftermath of World War II. By 1960, both the Chinese and Indian shares had fallen below 5 percent. Then they began to recover. The Maddison database shows that the Chinese real GDP caught up with U.S. real GDP in 2015 in PPP terms.

The Shares of World GDP of China, India and the U.S. since 1820 (Maddison Project Database) PPP



The Shares of World GDP of China, India and the U.S. since 1950 (Maddison Project Database) PPP



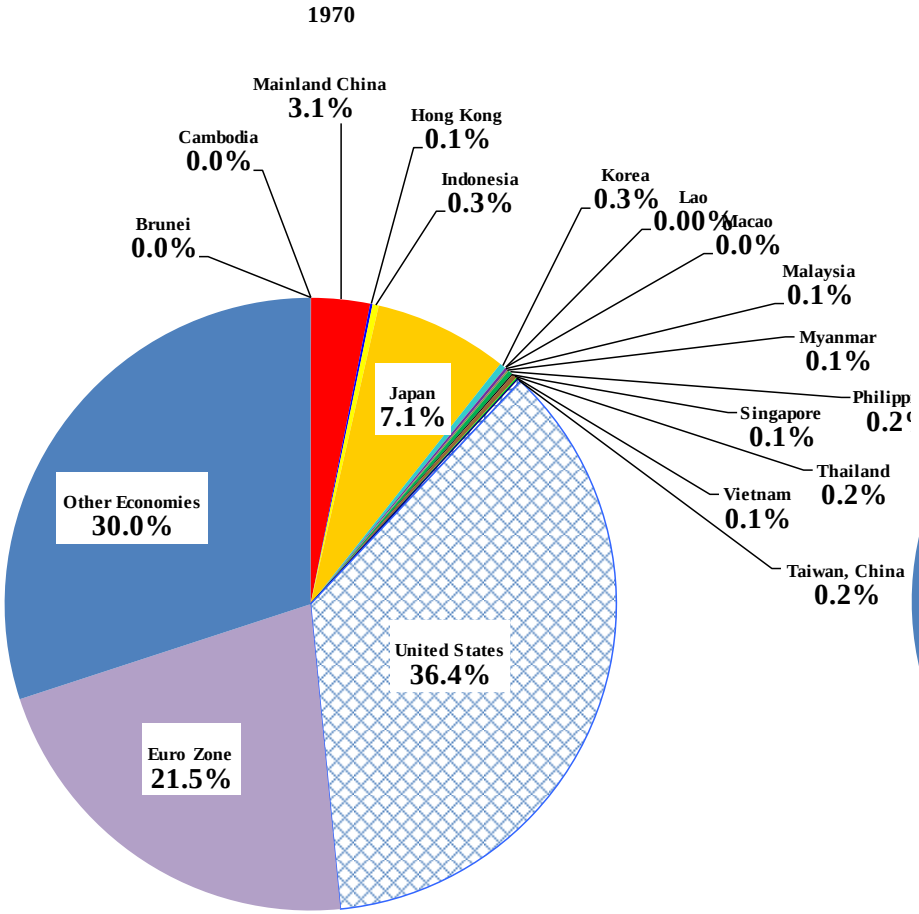
China in the World Economy

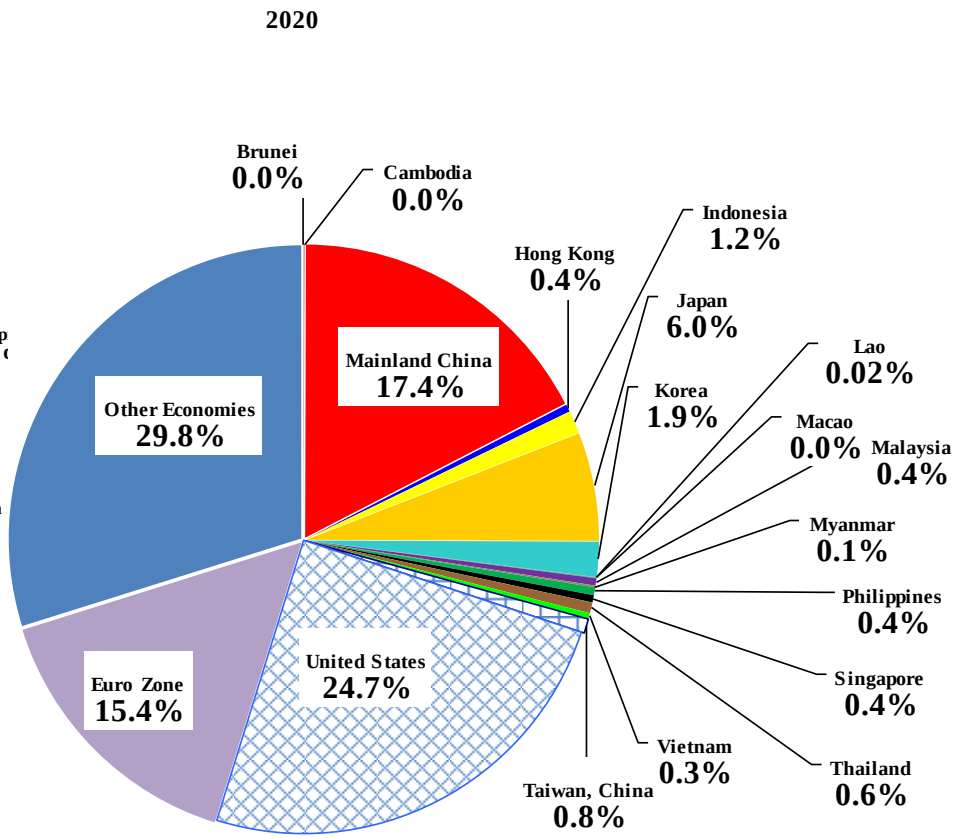
- The use of PPP international prices for international comparison purposes is somewhat problematic because there is no natural tendency for the prices of services and fixed assets to equilibrate across countries, unlike tradeable goods. For the rest of this presentation, we use market prices at official exchange rates.
- Around 1800, Chinese population may be estimated at 330 million (compared to 1.41 billion today), or approximately 37 percent of the then world population. The Chinese share of world population has since fallen to a little more than 17 percent.
- For various reasons, the Chinese real GDP per capita then started to fall continuously until the middle of the 20th Century, to US$95.2 in today's prices, in 1949.
- In 2021, using market prices (and not PPP prices) and official exchange rates, Chinese GDP may be estimated at US$17.94 trillion, or 78 percent of the U.S. GDP of US$ 23.0 trillion (all in 2021 prices). My own projections suggest that the Chinese real GDP will catch up to the U.S. real GDP some time around 2030.
- However, in 2021, Chinese real GDP per capita was only US$12,699, less than one-fifth of the U.S. real GDP per capita of US$68,971. It will take until the end of this Century for the Chinese real GDP per capita to catch up to the U.S. real GDP per capita, if at all.

China in the World Economy: The Rise of the Chinese, Japanese, and East Asian Economies

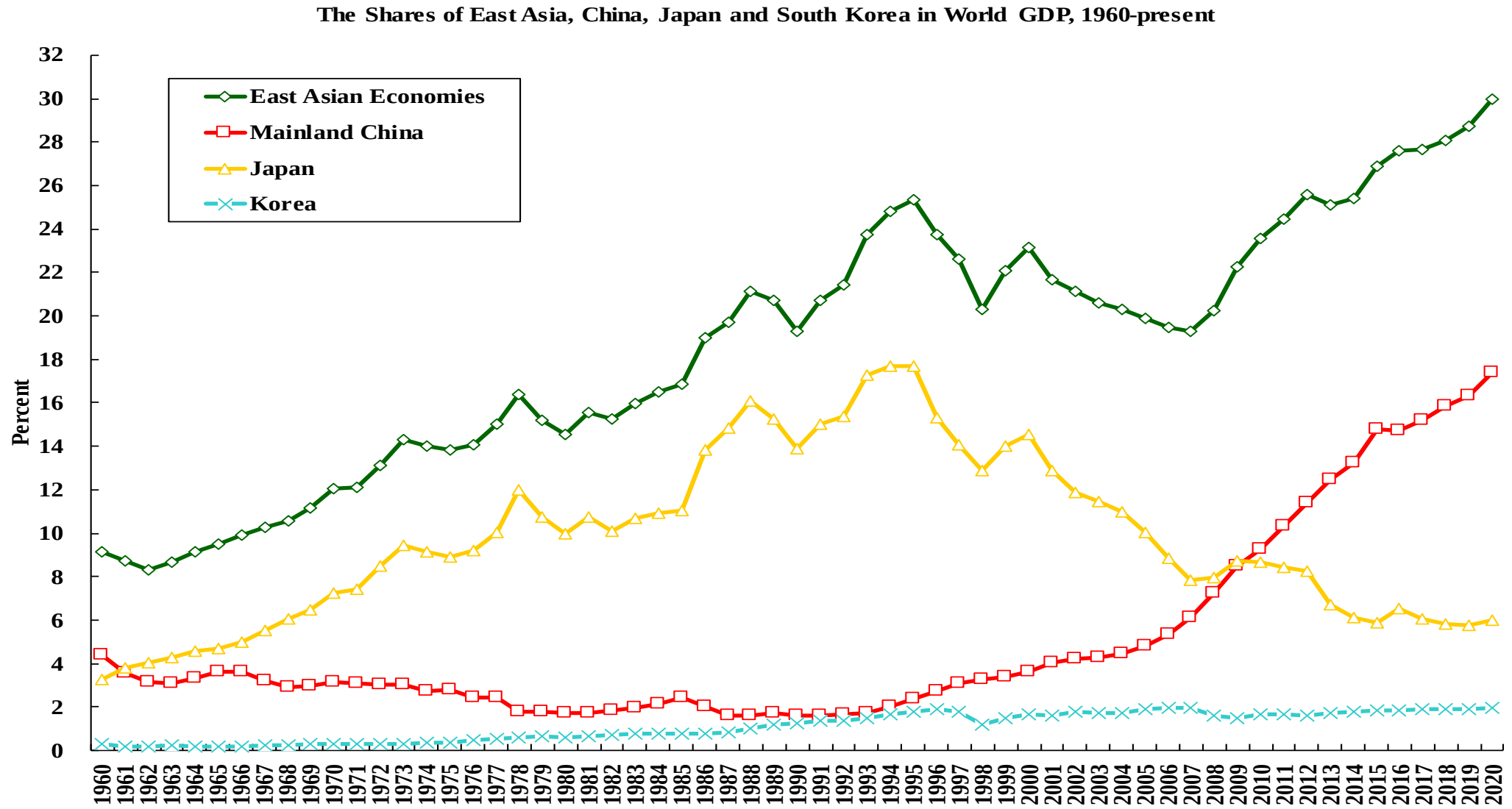
- The following chart shows the changes in the distribution of the GDP of the world over the past half of a Century. In 1970, the U.S. accounted for 36.4% of world GDP, and the Euro Zone (meaning the countries in today's Euro Zone), 21.5%. Japan and China accounted for 7.1% and 3.1% respectively. East Asia as a whole accounted for not quite 12%.
- By 2020, the U.S. share has shrunk to 24.7% and the Euro Zone 15.4%. China and Japan accounted for 17.4% and 6% respectively. East Asia as a whole accounted for almost 30%.
- The centre of gravity of the world economy has been shifting from Europe and North America to East Asia.
- Given that the East Asian economies have been growing at higher rates than Europe and North America, it is inevitable that the East Asian share of world GDP will eventually surpass the Euro Zone and the U.S. shares combined.

The Distribution of World GDP, 1970 and 2020, US$





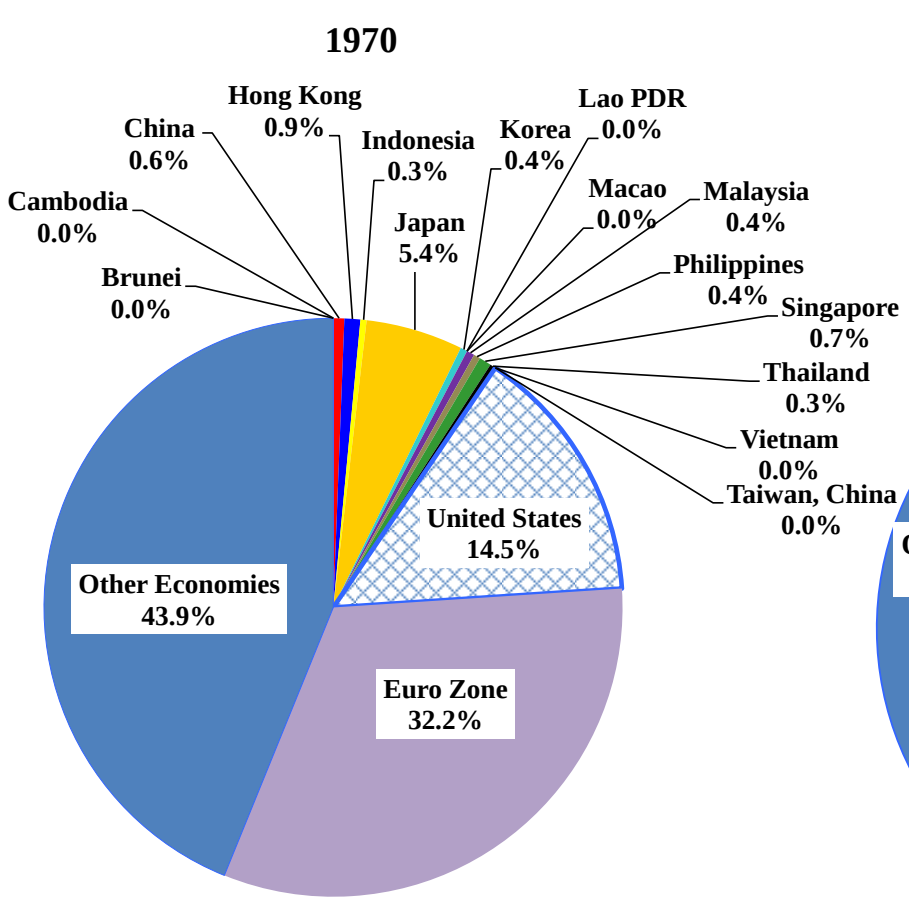
The Shares of East Asia, China, Japan and South Korea in World GDP, 1960-present

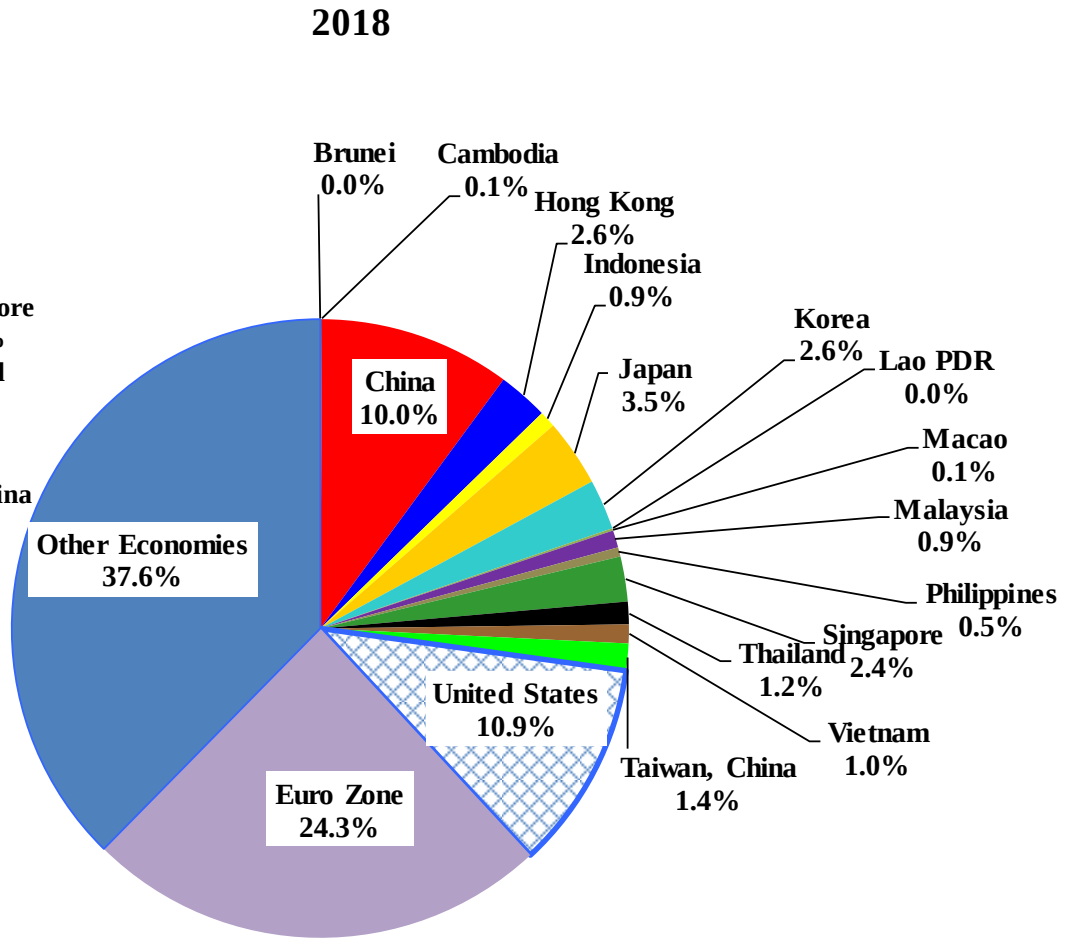


China in the World Economy: The Rise of the Chinese, Japanese, and East Asian Economies

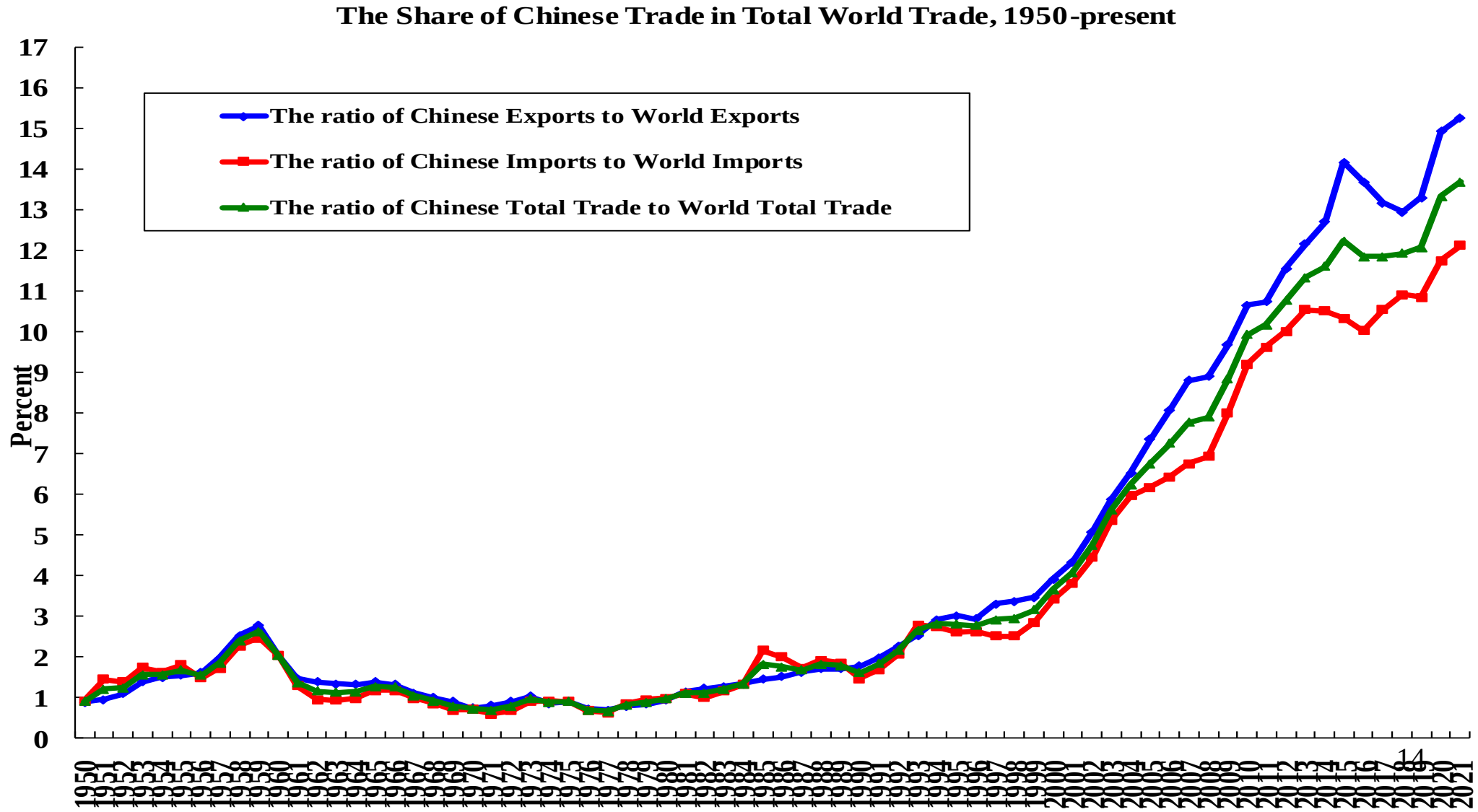
- The following chart shows the changes in the distribution of world trade over the past half of a Century.
- In 1970, the U.S. accounted for 14.5% of world trade, and the Euro Zone, 32.2%. Japan and China accounted for 5.4% and 0.6% respectively. East Asia as a whole accounted for approximately 9.5%.
- By 2020, the U.S. share has shrunk to 10.9% and the Euro Zone 15.4%. China and Japan accounted for 10.0% and 3.5% respectively. East Asia as a whole accounted for more than 27%.
- The centre of gravity of world trade has also been shifting from Europe and North America to East Asia.
- Moreover, approximately half of East Asian international trade is with East Asia itself. This shows that East Asia has come into its own as an independent economic region.
- And China accounts for more than 40% of East Asian international trade.

The Distribution of International Trade in Goods and Services, 1970 and 2018

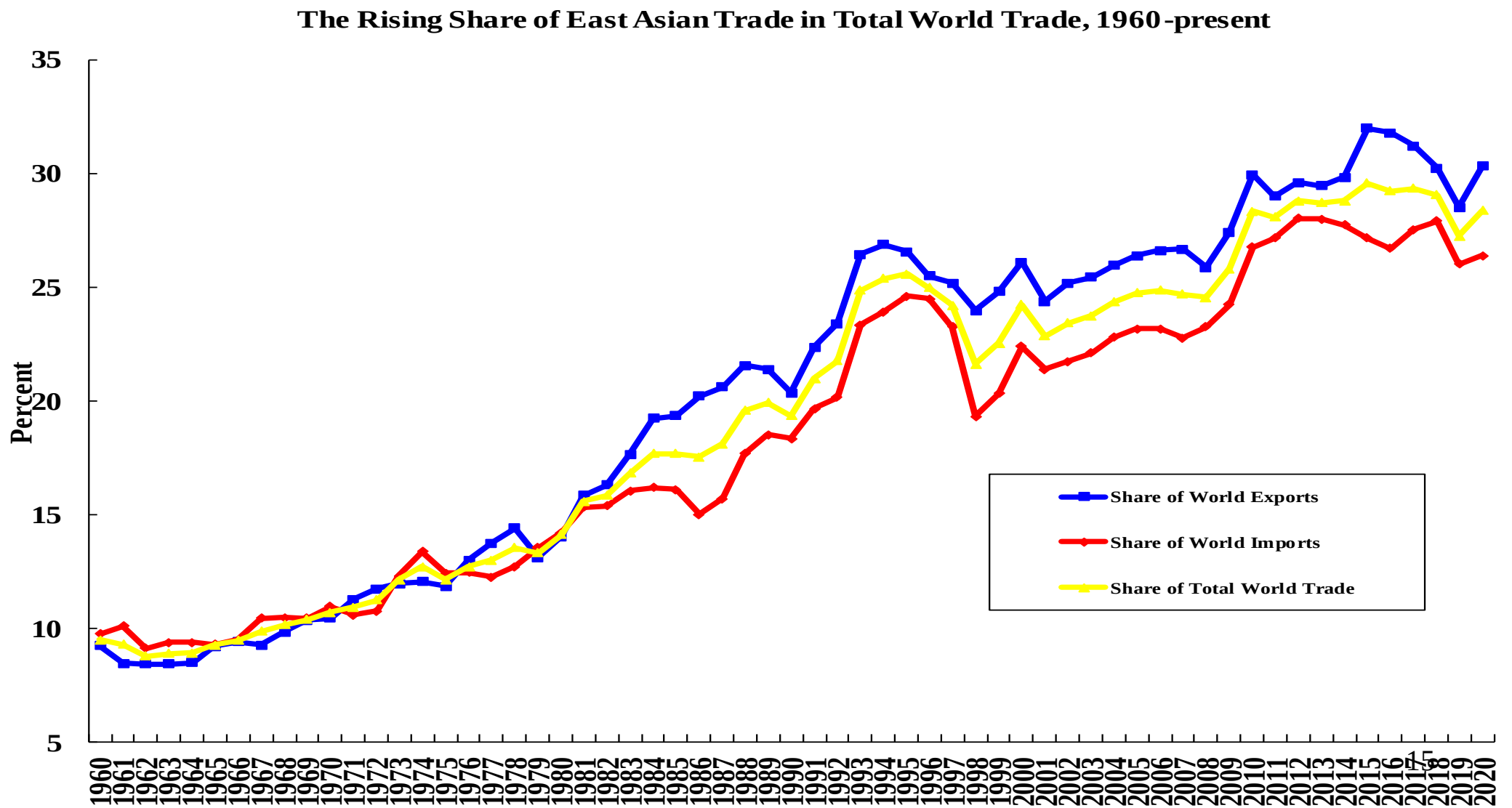




The Chinese Share of Total World Trade, 1950-present



The Rising Share of East Asian Trade in Total World Trade, 1960-present



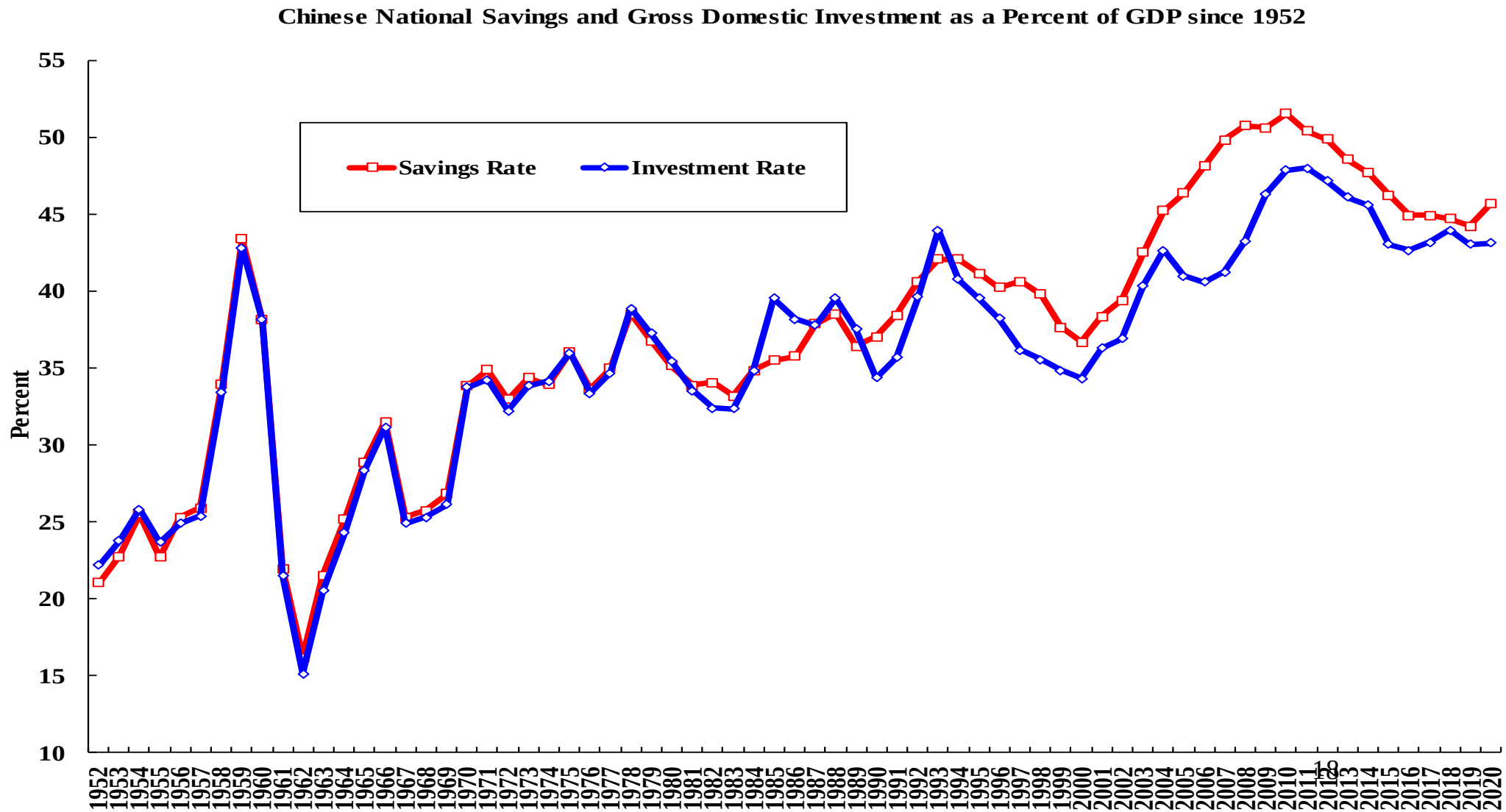
The Chinese Economic Fundamentals

- The Chinese national savings rate has remained high, currently at approximately 45 percent.
- Chinese demographic developments appear unfavourable at the present time—its population is ageing rapidly, with almost zero growth. However, the problems are manageable in terms of labour supply.
- Indigenous innovation has been occurring in many areas, for example: 5G communication, the BeiDou Navigation Satellite System, high-speed trains, quantum communication, super-computers, and ultra-high-voltage transmission of electricity.
- China enjoys economies of scale, learning-by-doing (that is, efficiency improvement resulting from repetitive production of the same good), and the advantage of longer upper tails in the ability distribution because of the size of its population.
- Moreover, as a large continental economy, the domestic Chinese economy is largely unaffected by external disturbances. Thus, while the Chinese rates of growth of exports and imports fluctuate like other East Asian economies, the rate of growth of its real GDP has remained relatively stable.

The National Savings Rate

- The Chinese national savings rate rose from 21.1% in 1952 to 36.8% in 1979 and 45.7% in 2020. It will remain high and provide the necessary resources for additional fixed-assets investment, including investment in infrastructure, human capital, research and development (R&D), and the provision of public goods such as education, healthcare, environmental preservation, protection and restoration, and elderly care.
- Household consumption will rise as household income continues to rise and more and more households join the ranks of the middle class. However, as a share of GDP, household consumption has been on a downward trend for the past sixty years and by itself is probably not sufficient to shore up the aggregate demand.

Chinese National Savings and Gross Domestic Investment as Percents of GDP



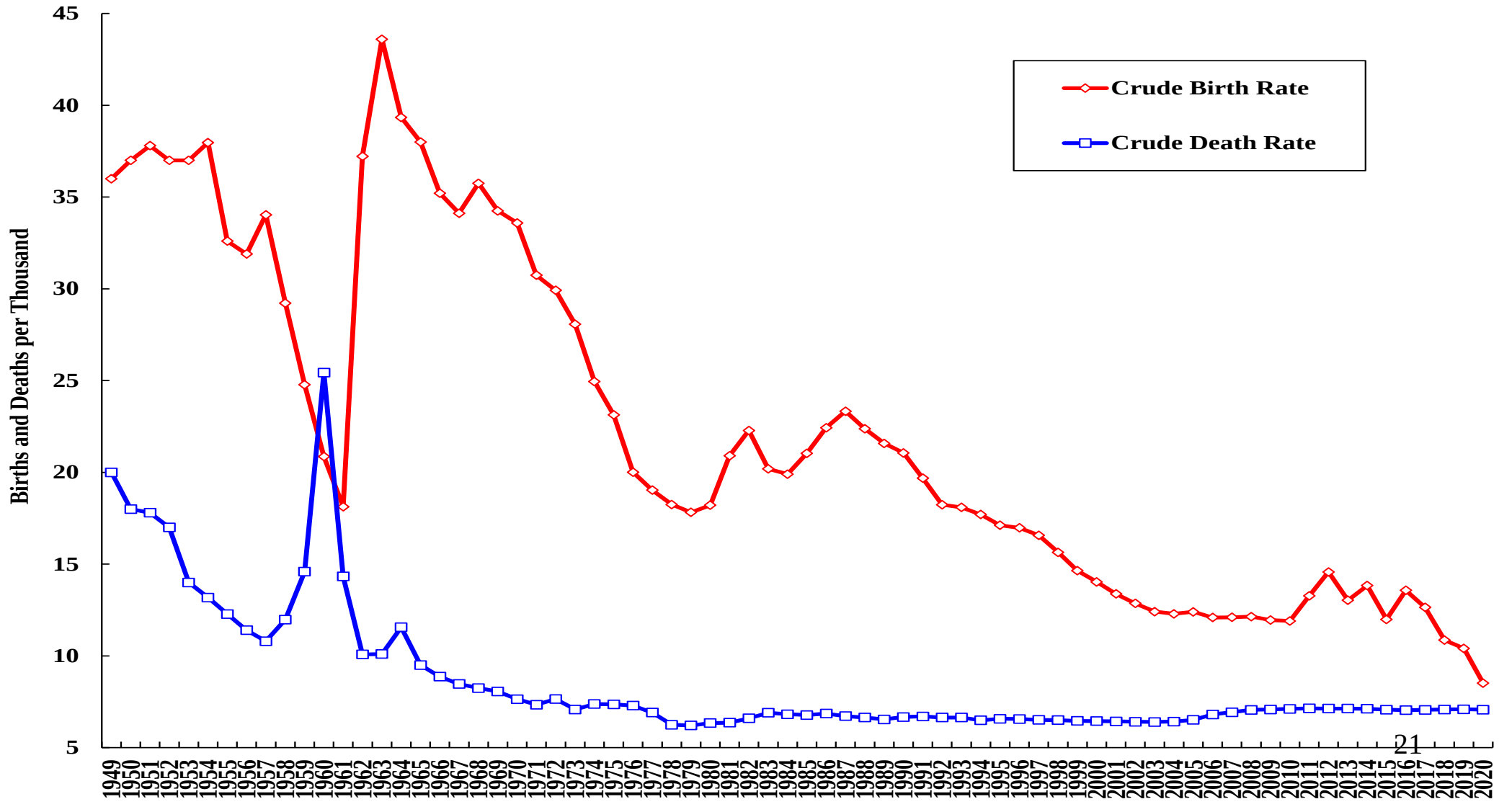
Demographic Developments

- While the growth of the total population has slowed, and may even turn negative soon (this is, in part, the legacy of the one-child policy), there is unlikely to be a serious shortage of labour.
- The demand for labour can be satisfied by continued urbanisation, that is, by the movement of surplus labour from the rural to the urban areas. There still exists substantial surplus labour—the primary (agricultural) sector generates only 7.3% of GDP but employs 23.6% of labour force.

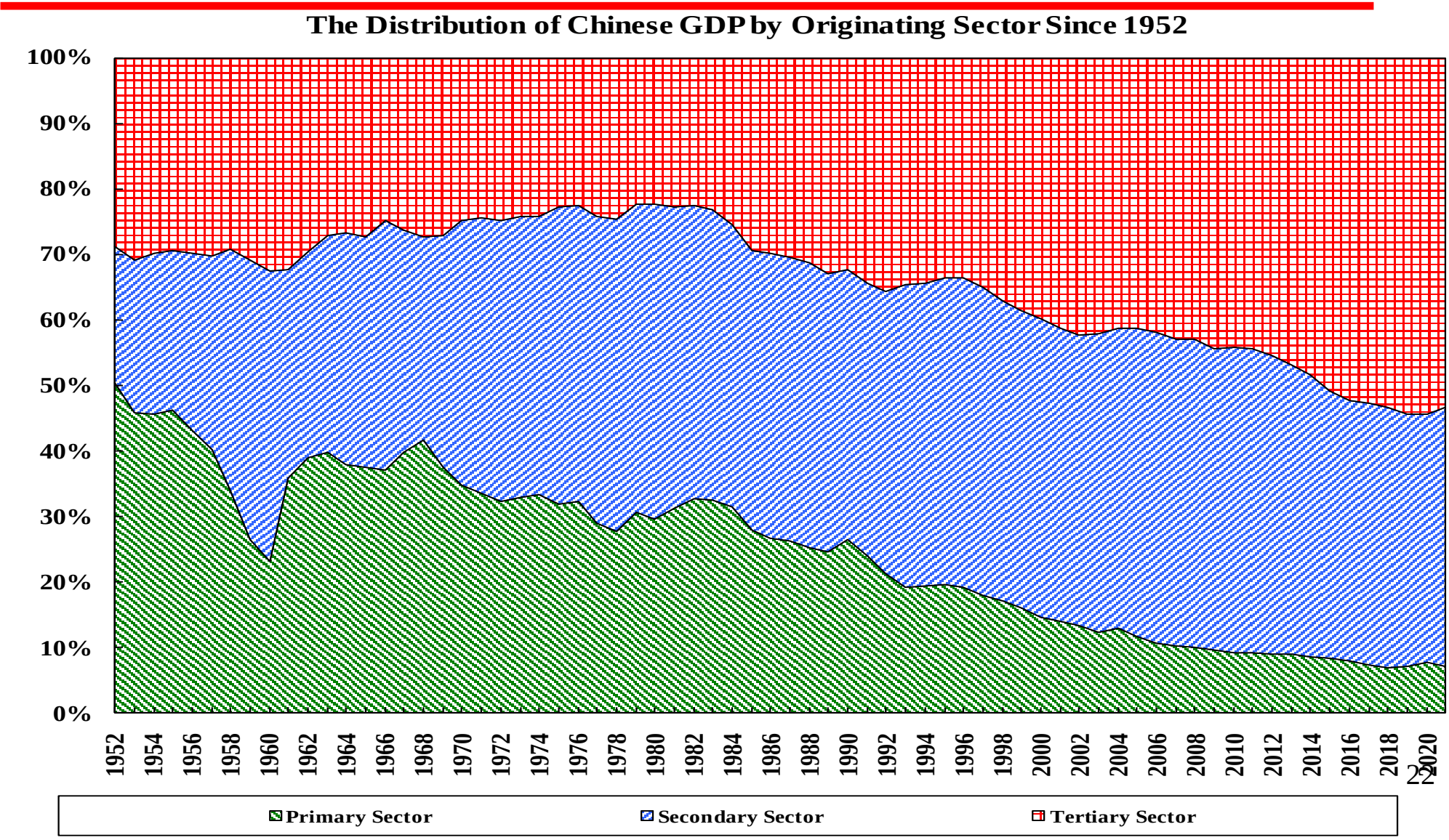
Demographic Developments

- In addition, the gradual raising of the mandatory retirement ages, which have officially remained at 55 for women and 60 for men, an anachronism inherited from the early 1950s, when life expectancy was in the low sixties, should help, as well as the adoption of automation and robotics.
- Moreover, the quality of the Chinese labour force has also improved significantly through various investments in education and public health. The "efficiency-equivalent" labour force continues to grow even though numerically the labour force is not growing.
- The elimination of restrictions on the number of children and the possible lowering of the marriage-eligible ages should also help to increase the birth rate gradually.

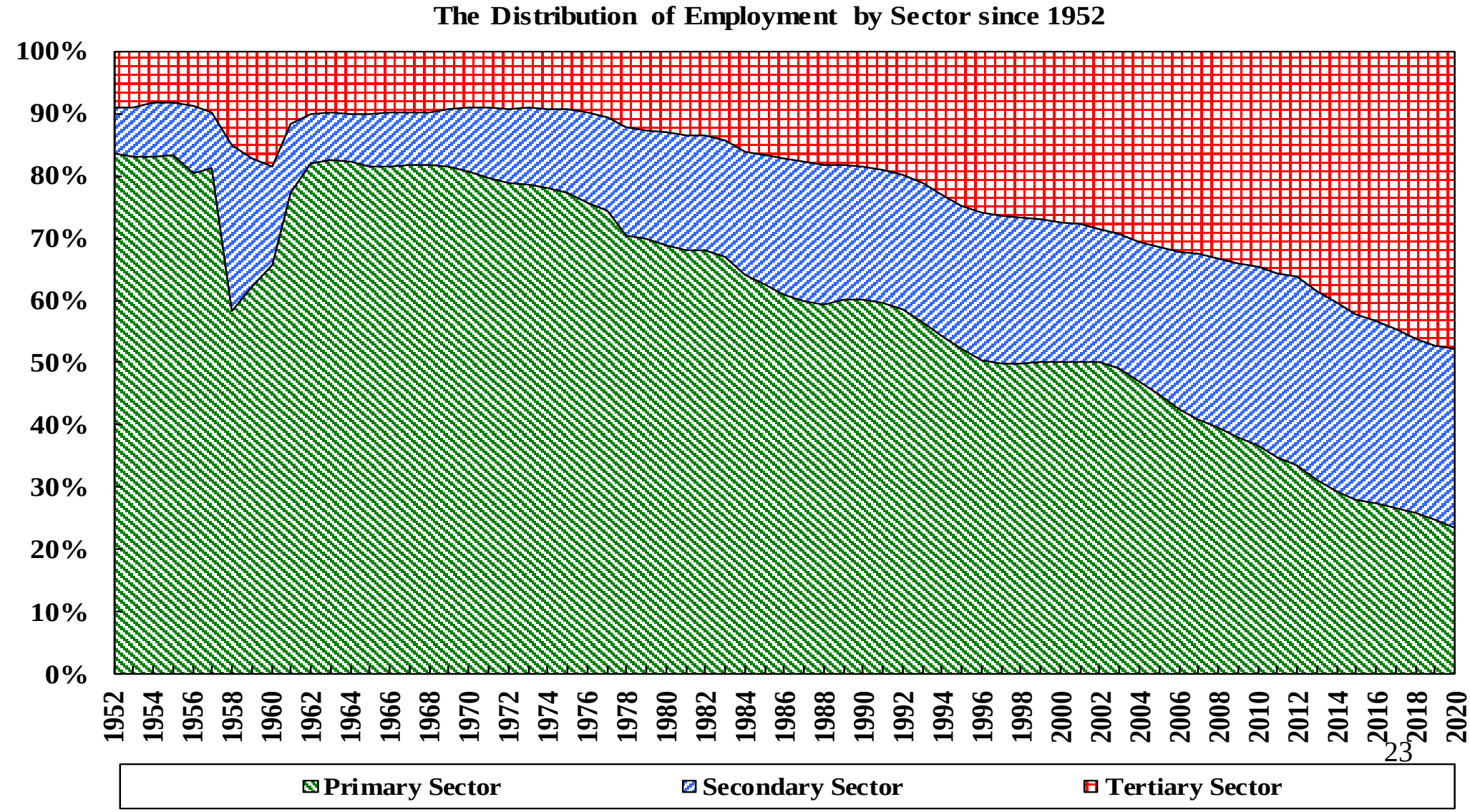
The Crude Birth Rate and Death Rate (Number per Thousand)



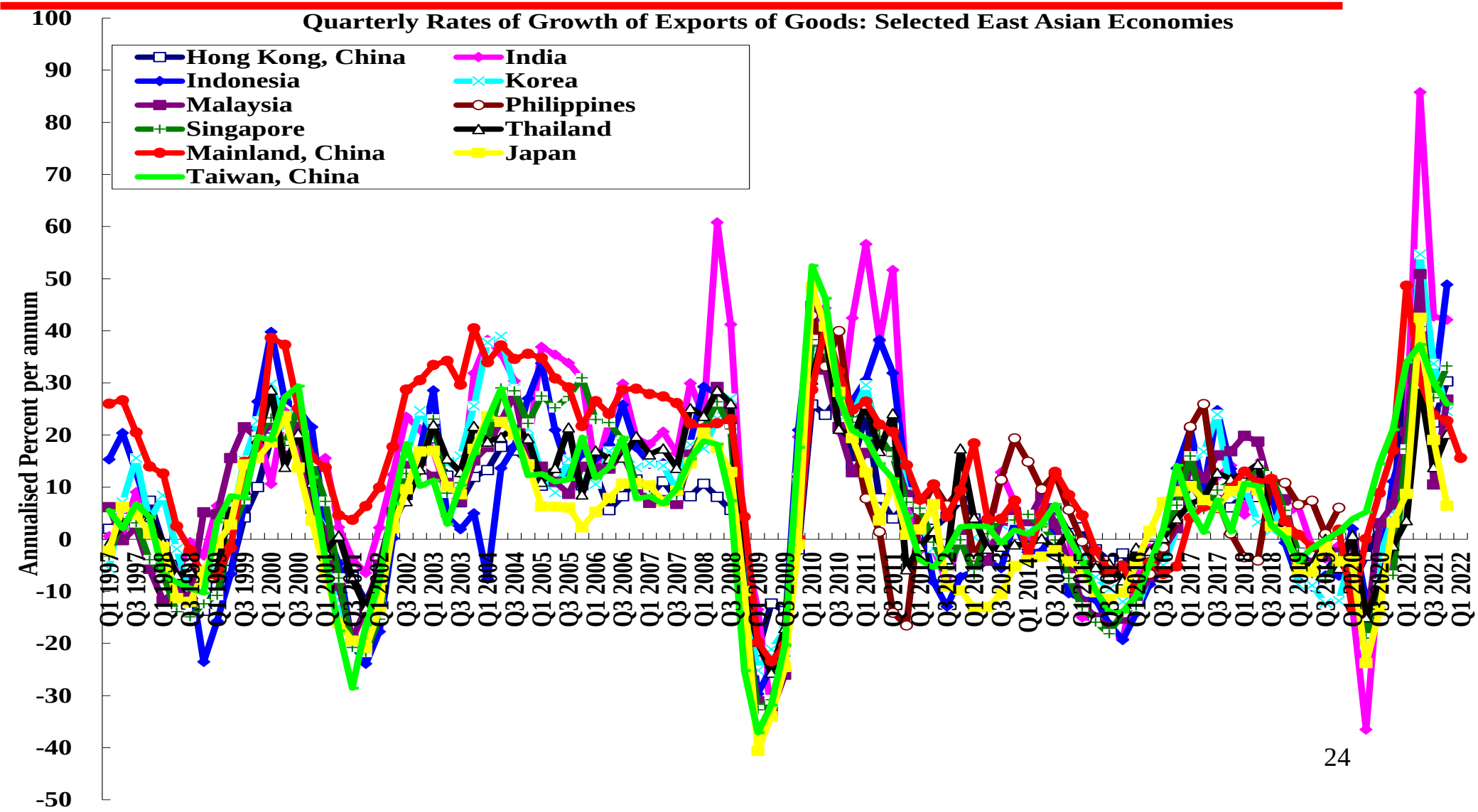
The Distribution of Chinese GDP by Sector Since 1952



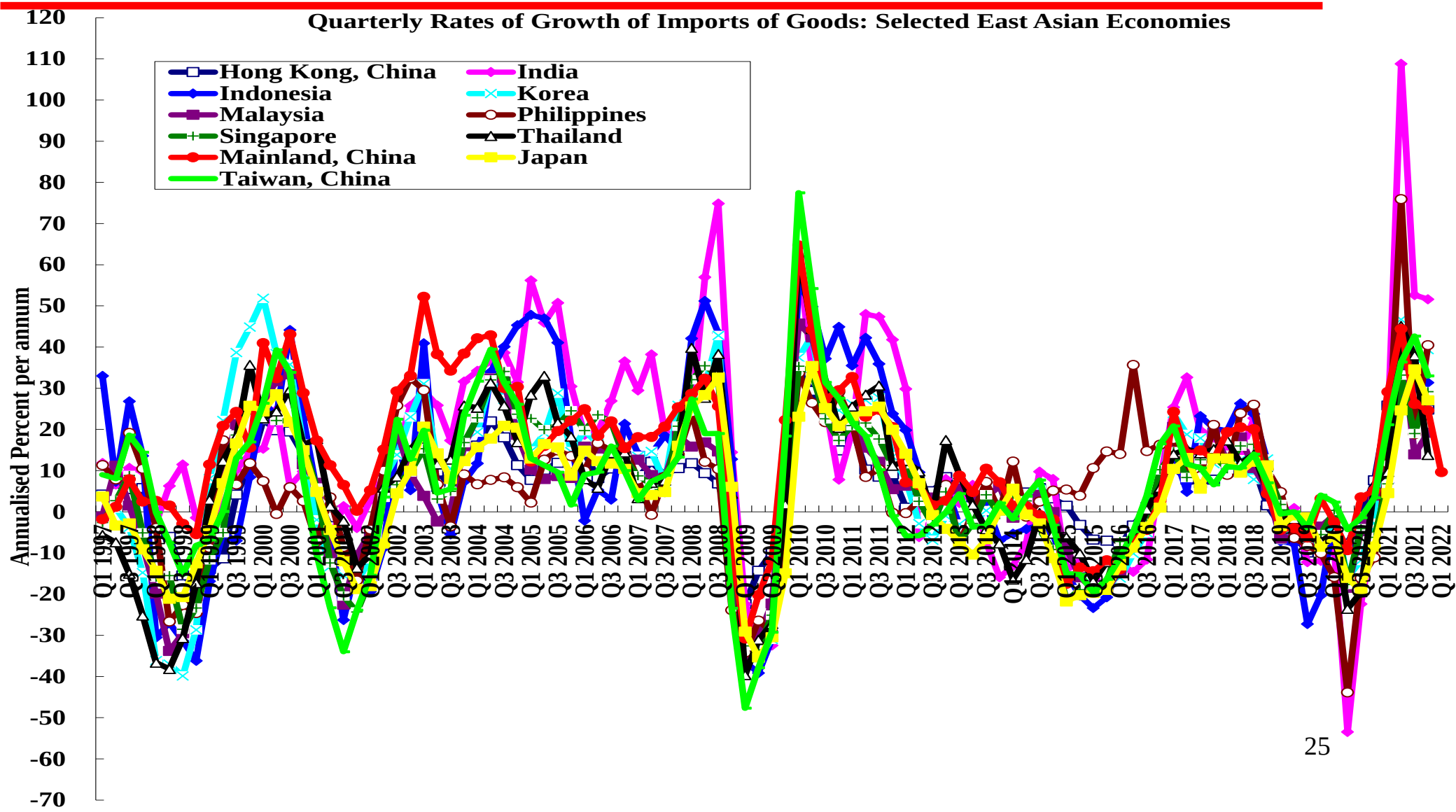
The Distribution of Chinese Employment by Sector Since 1952



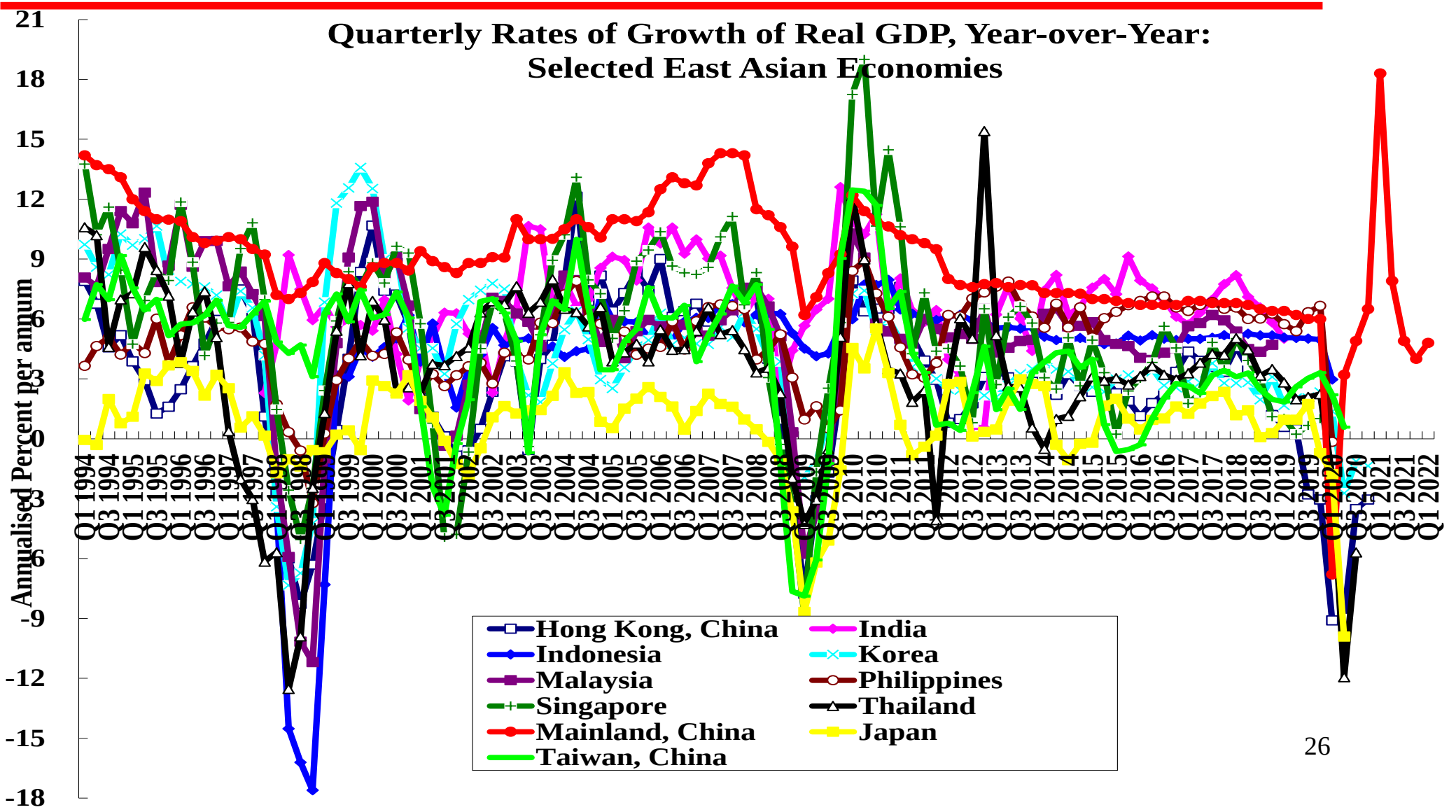
Quarterly Rates of Growth of Exports of Goods: Selected Asian Economies



Quarterly Rates of Growth of Imports of Goods: Selected Asian Economies



Quarterly Rates of Growth of Real GDP, Y-o-Y: Selected Asian Economies



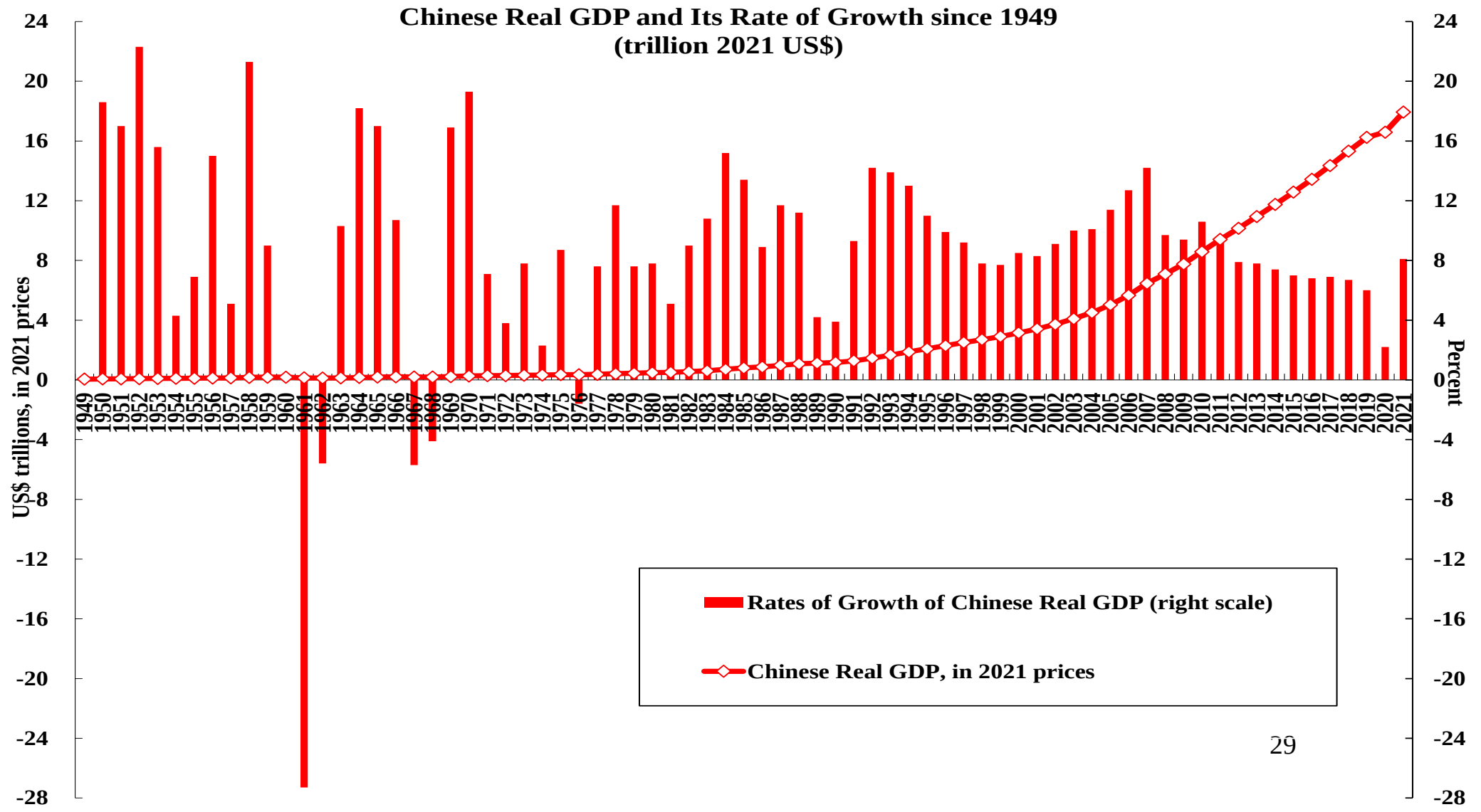
The Chinese Economic Record since 1949

- The growth of Chinese real GDP and Chinese real GDP per capita

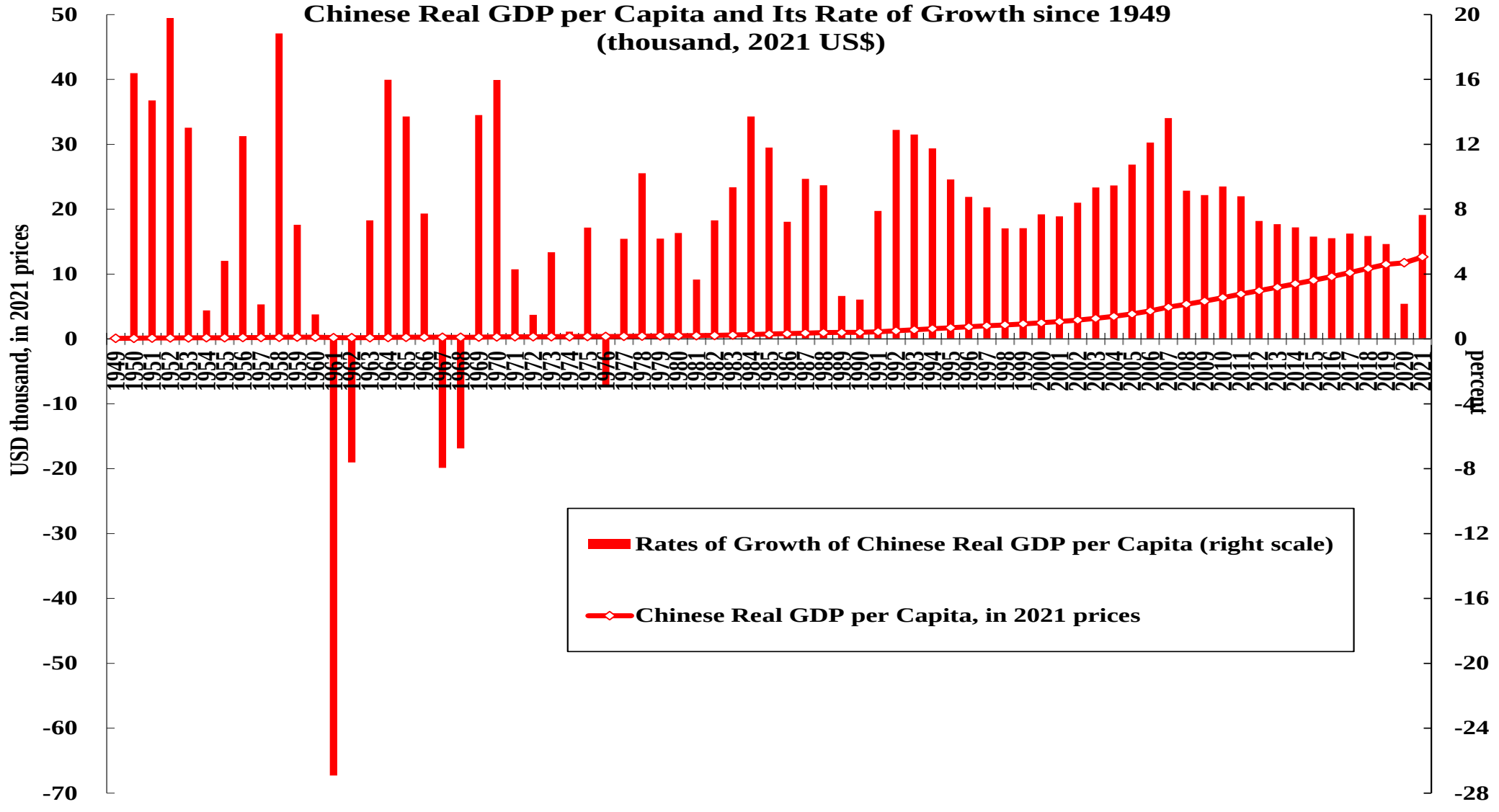
The Growth of Chinese Real GDP and Real GDP per Capita, 1949-2021

- Between 1949 and 2021, Chinese real GDP has grown from 329 billion Yuan to 114.4 trillion Yuan (in 2021 prices) (and from US$51.55 billion to US$17.94 trillion), an almost 350-fold increase.
- During the same period, Chinese real GDP per capita has grown more than 130-fold, from 607 Yuan to 80,962 Yuan (and from US$95.2 to US$12,699).
- Despite the significant fluctuations and volatility of the rates of growth during the 20 years from the late 1950s to the late 1970s, the average annual rates of growth of real GDP and real GDP per capita for the entire period from 1949 to 2021 are respectively 8.47% and 7.03%, a truly remarkable achievement over such a long period of time. It is historically unprecedented.

Chinese Real GDP and Its Annual Rate of Growth: 1949-2021



Chinese Real GDP per Capita and Its Rate of Growth: 1949-2021



The Growth of Chinese Real GDP and Real GDP per Capita, 1949-2021

- We can attribute this success largely to the long time horizon of the Chinese economic policy makers and the single-minded focus on economic growth. With a long enough planning horizon, one can afford to undertake investment in development-leading infrastructure, that is, infrastructure the demand for which has not yet materialised but can be created by the supply itself. "Supply creates its own demand"! Infrastructure that may take a long time to pay off.
- Chinese GDP in 2021 was 78 percent of the U.S. GDP of US$ 23.0 trillion, but Chinese GDP per capita remained far behind, at only 18.4 percent of the U.S. GDP per capita of US$68,971.

The Growth of Real GDP and Real GDP per Capita, in the Pre-Reform Period, 1949-1978

- If we consider the thirty-year period 1949-1978, before the beginning of Chinese economic reform and opening to the world, the average annual rates of growth of real GDP and real GDP per capita were respectively 8.01% and 5.85%.
- This economic performance, due in part due to the rapid recovery in the rehabilitation period of 1949-1952, was really quite respectable. The First Five-Year Plan (1953-1957) was also a success.
- The years of significant negative economic growth in the pre-reform period occurred during the Great Famine of 1959-1961 and the Great Proletarian Cultural Revolution of 1966-1967.

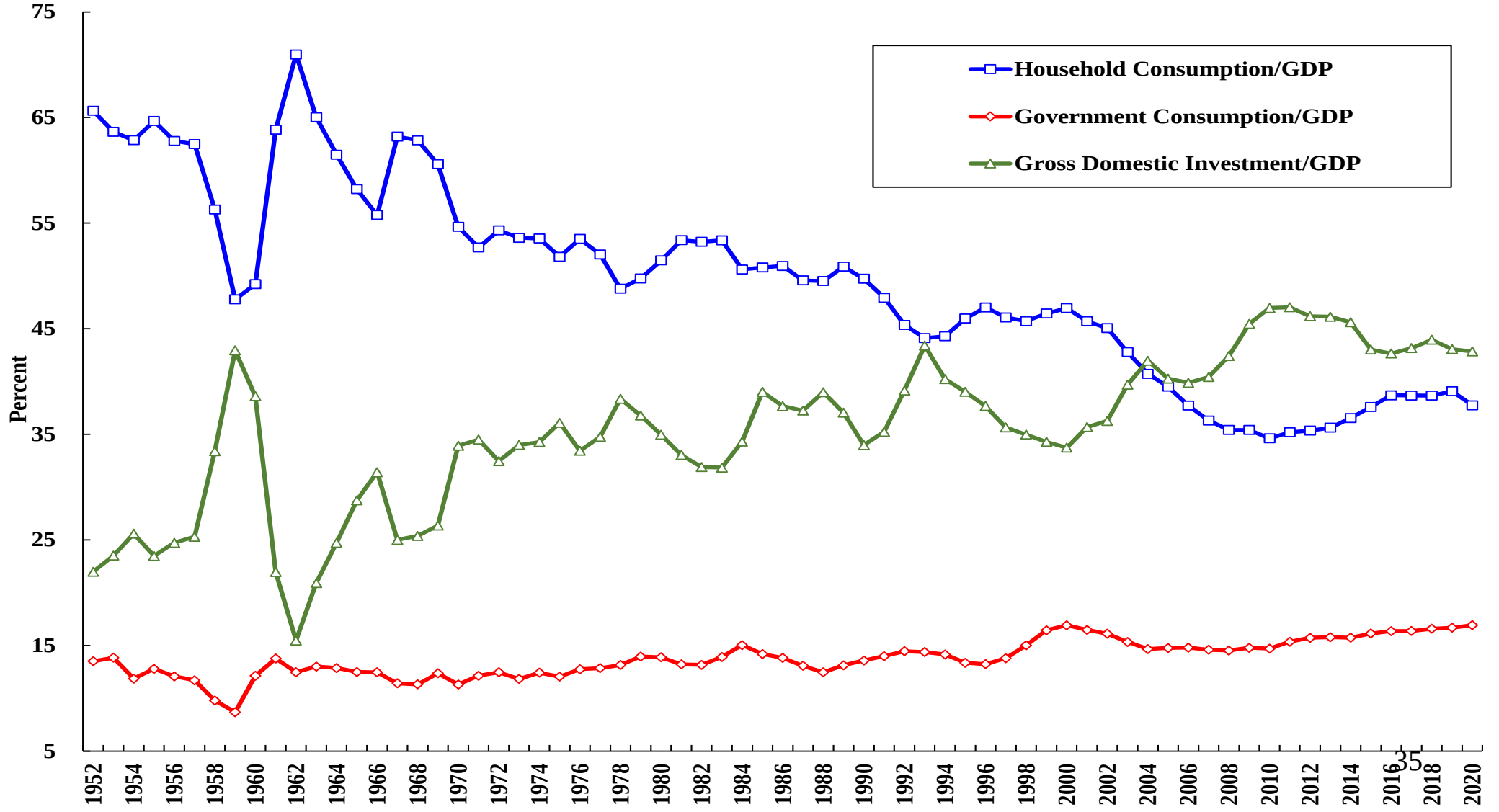
The Growth of Real GDP and Real GDP per Capita in the Post-Reform Period, 1978-2021

- Between 1978, the beginning of the Chinese economic reform and opening to the world, and 2021, real GDP has grown more than 40-fold, from 2.65 trillion Yuan to 114.4 trillion Yuan (in 2021 prices) (and from US$415 billion to US$17.94 trillion), and real GDP per capita has grown almost 30-fold, from 2,749 Yuan to 80,962 Yuan (and from US$431.2 to US$12,699).
- During this period of more than four decades, there was not one single year in which the rate of growth of real GDP or real GDP per capita turned negative.
- The average annual rates of growth of real GDP and real GDP per capita for the post-reform period from 1978 to 2021 are respectively 9.15% and 8.18%, even higher than the average annual rates of growth achieved since 1949.

The Components of Aggregate Demand

- The share of household consumption in aggregate demand (GDP) has been declining over time, from a peak of almost 71 percent in 1962 to less than 38 percent in 2020.
- Gross domestic investment, which includes real fixed-assets investment, has become the most important source of aggregate demand since 2004. It was not quite 43 percent in 2020.
- Government consumption, which includes most public goods consumption, has been increasing slowly and gradually from 13.5 percent in 1952 to just below 17 percent in 2020.
- There is a great deal of room for both government investment and government consumption to grow through increased public goods provision.
- Net exports will continue to decline in relative importance as a component of aggregate demand, given the Chinese objective of balanced international trade.

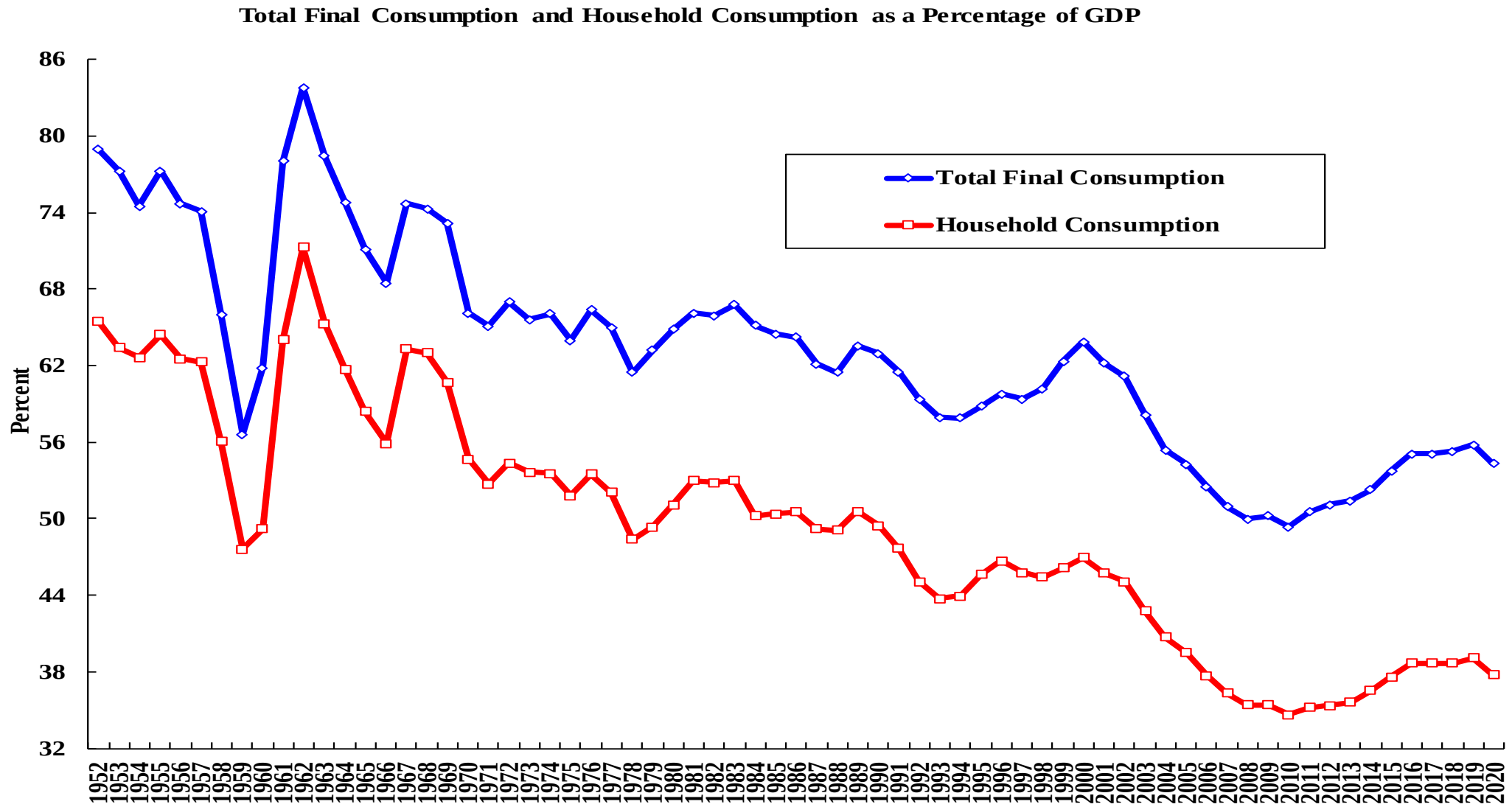
The Percentage Distribution of the Sources of Aggregate Demand



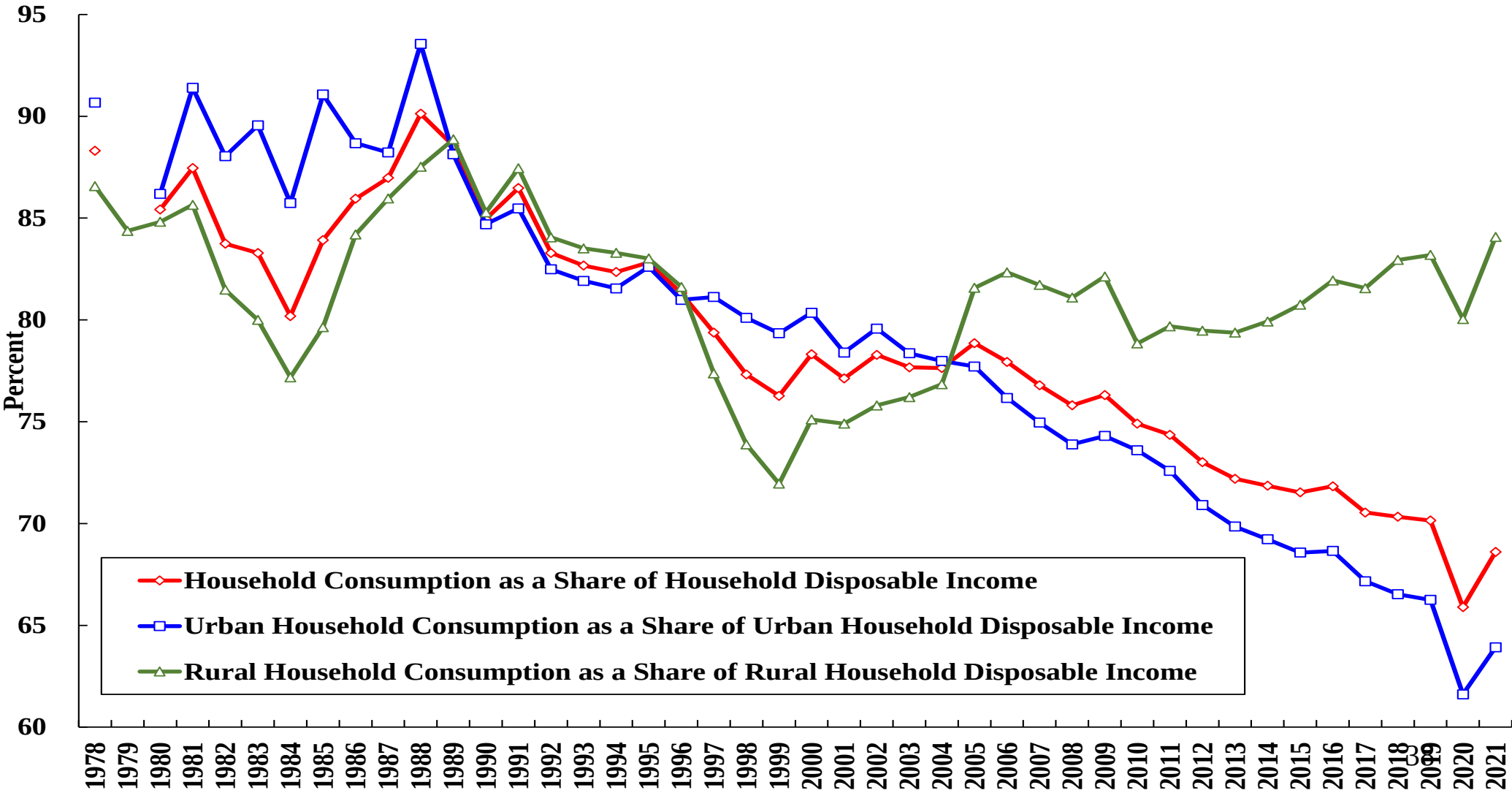
Household Consumption is a Declining Share of Household Disposable Income

- The share of household consumption in household disposable income has also been declining over time, from over 90 percent in 1988 to 68.6 percent in 2021.
- Moreover, as China becomes increasingly urbanised, the share of household consumption in household disposable income is likely to decline further, since urban households have a higher propensity to save than rural households.
- In 2021, the shares of household consumption in disposable income were 84.1 percent for rural household and 63.9 percent for urban households.
- Between 1949 and 2021, the share of rural population fell from almost 90 percent to slightly more than 35 percent.
- Thus, increases in household disposable income alone are not sufficient to increase household consumption significantly as a component of aggregate demand. Increases in fixed-assets investments and government consumption are needed. This is where public goods provision comes in.

Chinese Total and Household Consumption as a Percent of Its GDP



The Shares of Household Consumption in Household Disposable Income



Key Performance Indicators Before and After Chinese Economic Reform

	Growth Rates percent per annum	
	Pre-Reform Period	Post-Reform Period
	1952-1978	1978-2021
Real GDP	6.17	9.15
Real GDP per Capita	4.09	8.18
	1952-1978	1978-2020
Real Consumption	8.29	18.50
Real Consumption per Capita	6.16	17.43
	1952-1978	1978-2021
Exports	9.99	14.56
Imports	9.14	13.67
Inflation Rates (GDP deflator)	0.51	4.70

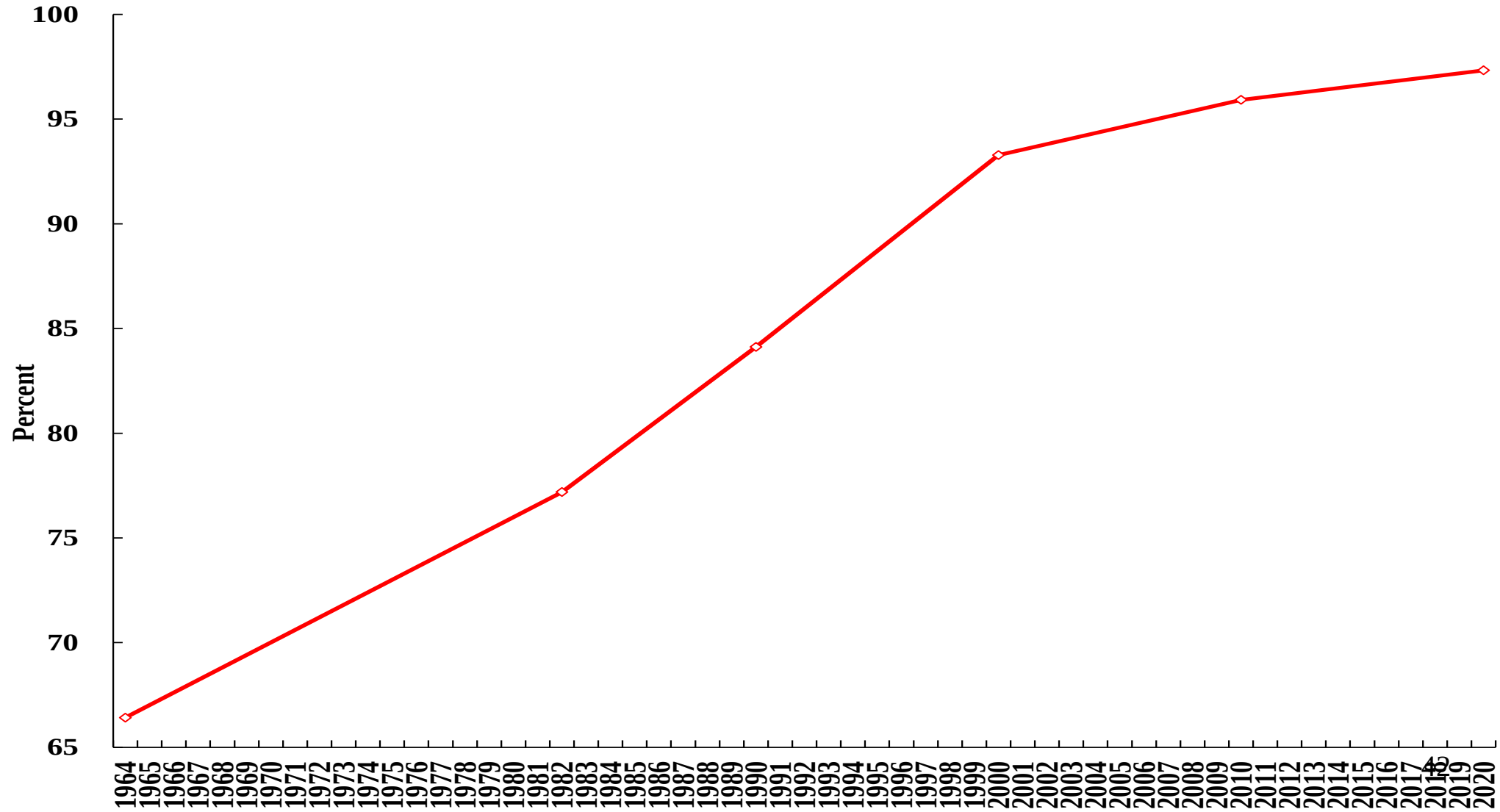
Beyond Economic Indicators

- Literacy and educational attainments
- Public health
- Innovation
- Prevention of climate change
- Air and water quality
- The eradication of extreme poverty

Literacy

- Traditionally, for millennia, the Chinese people have always valued education greatly, in large part because it was one of the very few channels for upward social mobility.
- More generally, literacy (and the promotion of Putonghua) are clearly public goods because they enable all Chinese people to communicate with one another in both speech and writing.
- The literacy rate, which must have been way below 50% in 1949, increased from 66.4% in 1964 to 97.3% in 2020, thanks in part to the simplification of the Chinese characters undertaken in the 1950s and codified in 1964.
- The simplification has been subject to much criticism, some quite justifiable, but it did reduce the number of years of schooling required for an average person to be able to read a newspaper from eight to four years, a major accomplishment.

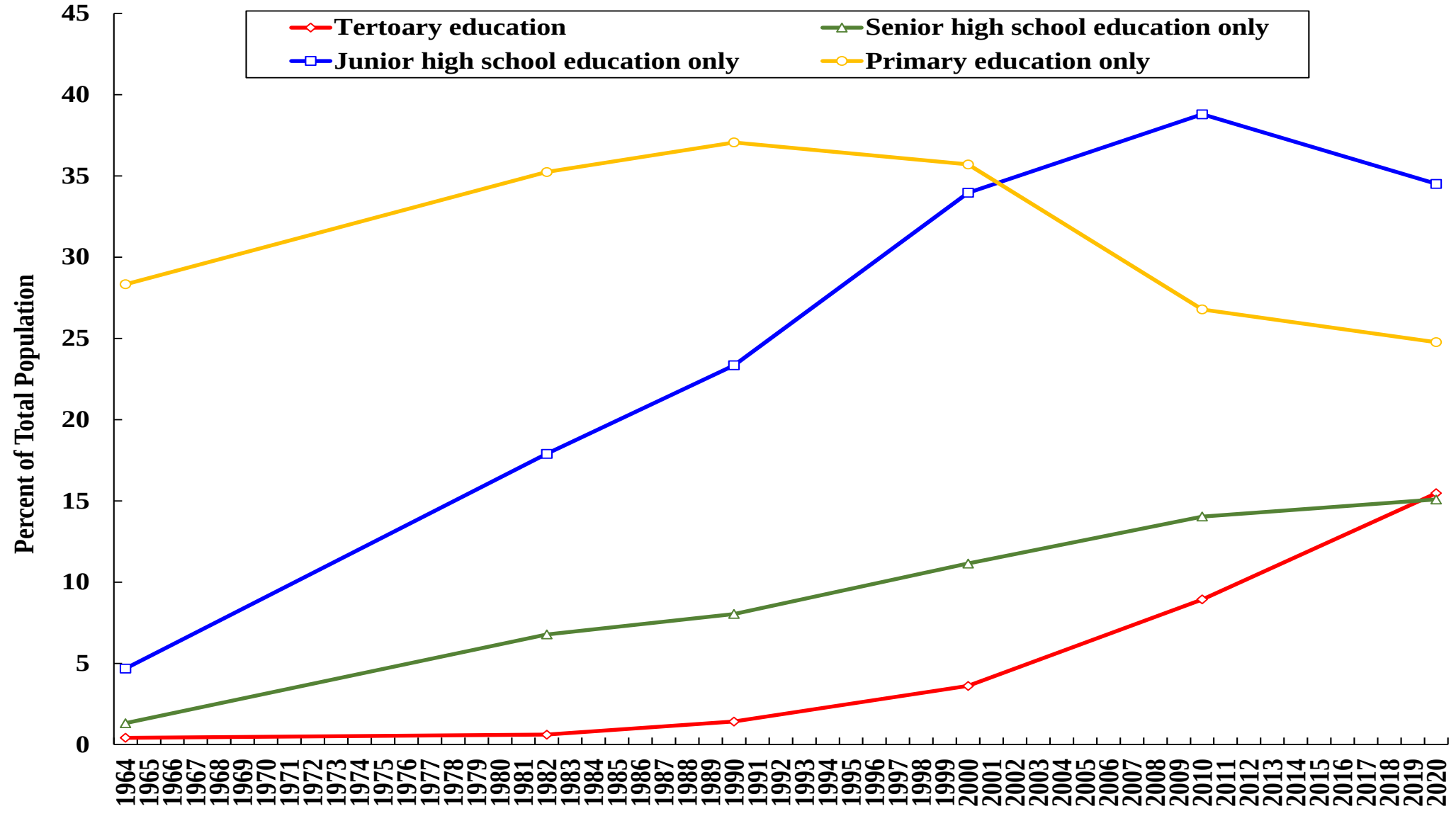
The Literacy Rate (Percent)



Educational Attainments

- Mandatory 9-year education for all was introduced in 1986. Most young people have had at least 12 years of education today even though it is still not mandatory at this time.
- The proportions of people with only primary education or junior secondary education have begun to decline.
- The tertiary enrolment rates of graduates of secondary schools was 24.6% in 1989 and rose to 94.5% in 2016. Almost everyone who wishes to attend a tertiary educational institution is now able to do so.
- The proportion of the total population with tertiary education, which was only 0.42% in 1964, rose to 15.47% in 2020, and is expected to increase further with time.

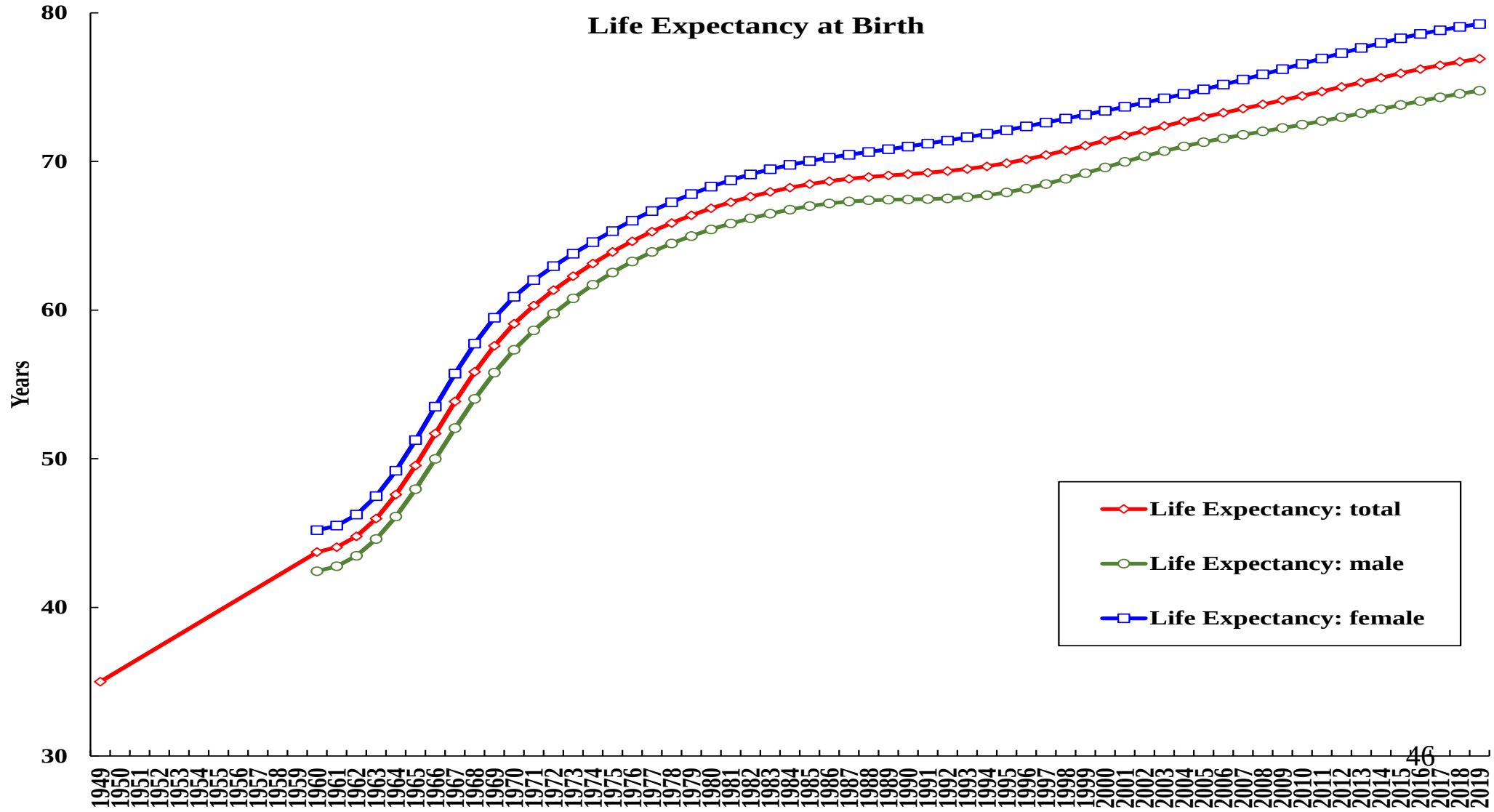
Educational Attainment Rates



Public Health

- Much improvement has occurred in healthcare and public hygiene in China.
- The population mortality rate has declined by more than half from 2.0% in 1949 to 0.71% in 2020.
- Life expectancy at birth, which was only 35 years in 1949 and 67.8 years in 1981, grew to 77.3 years in 2019 (compared to 72.6 years for the world as a whole).
- The COVID-19 epidemic was successfully managed in China. As of 22 April 2022, the COVID-19 epidemic infected 180,982 persons (excluding imported cases) and resulted in 4,686 deaths on the Mainland, with a quarter of the world's population. By comparison, the rest of the world had, on the same date, a cumulative total of more than 508 million (508,526,800) infected cases and more than 6.2 million (6,235,952) fatalities.

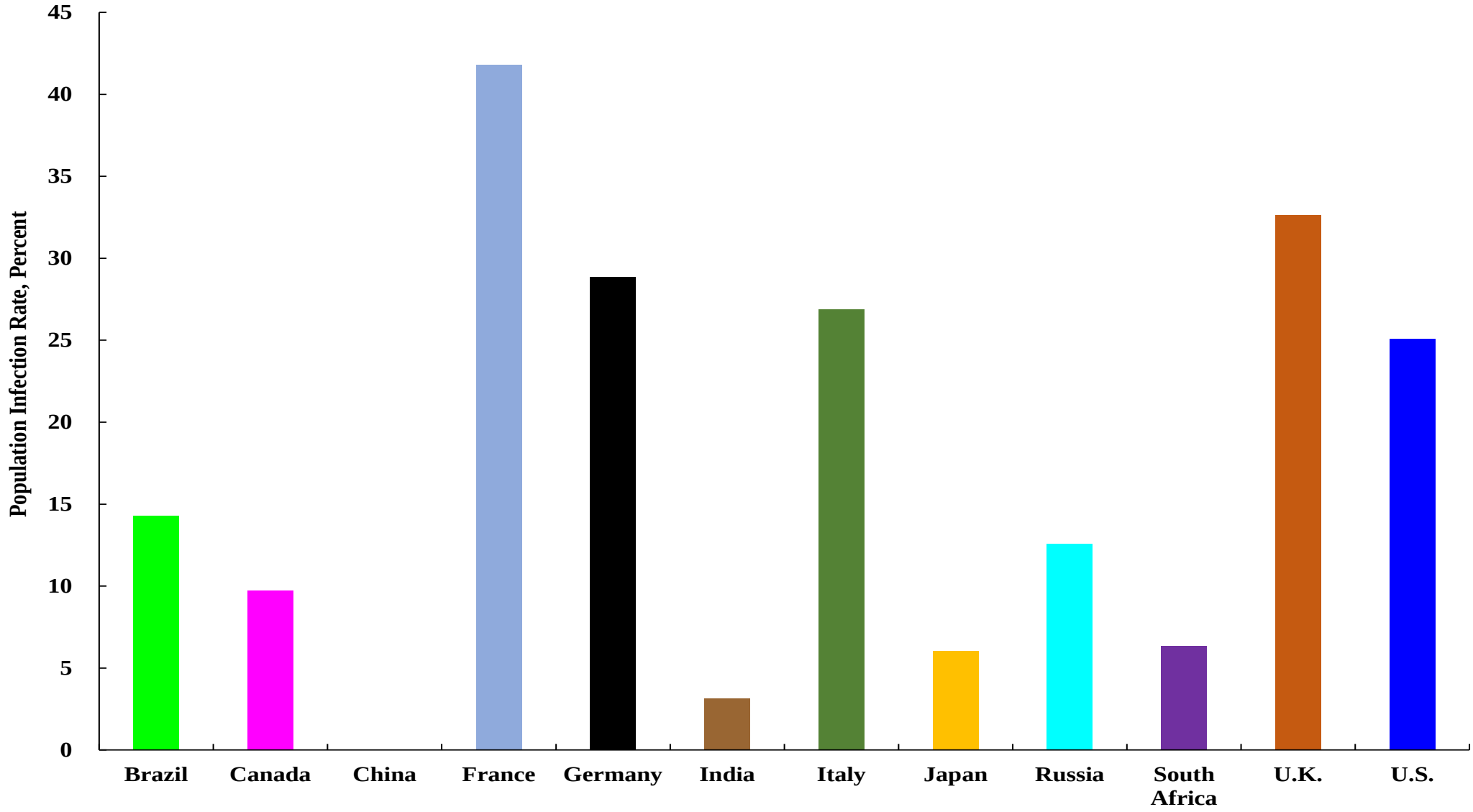
The Life Expectancy at Birth (Years)



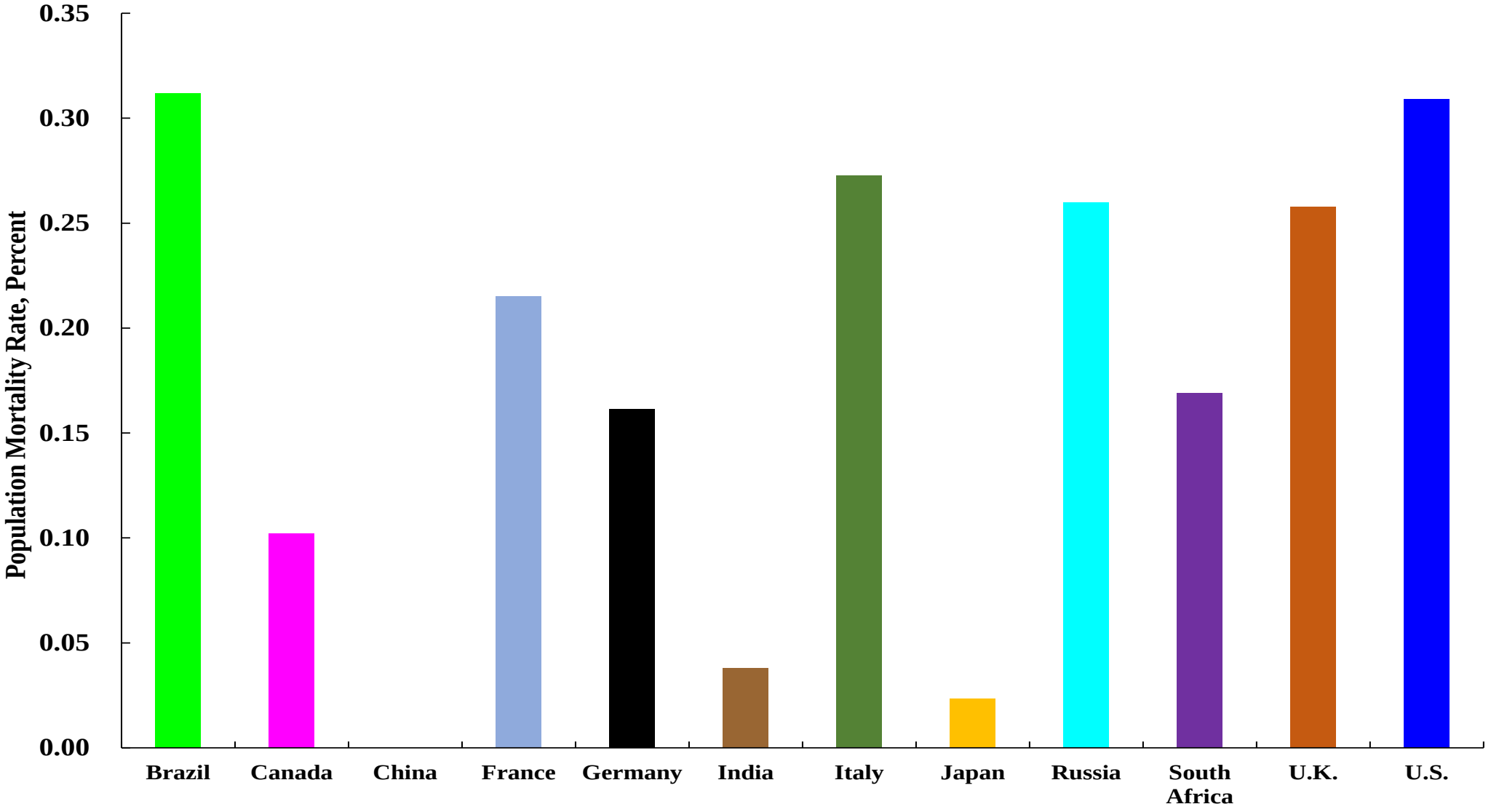
The COVID-19 Epidemic in China

- The COVID-19 epidemic first broke out in China in Wuhan, Hubei, in December 2019.
- However, it was soon successfully contained through a blockade of the city of Wuhan and the province of Hubei, and a complete lockdown. Through rapid testing, isolation and quarantine of the infected, and timely treatment, the epidemic was brought under control by the end of March 2020.
- In early 2022, there were once again surges of the epidemic in different parts of China—Shanghai, Shenzhen, Jilin and Guangdong--due to the omicron variant.
- As of 22 April 2022, China has the lowest per capita cumulative infection rate and the lowest per capita cumulative death rate from COVID-19 among all major countries.
- There was a significant loss of GDP in 2020 that could be attributed to the epidemic, to the tune of approximately 4 percent. This was partially compensated by the growth of 8.1 percent in 2021. The potential reduction in 2022 GDP due to COVID-19 may be estimated to be between 0.5 and 1 percent.

The COVID-19 Epidemic: International Comparison of Population Infection Rates



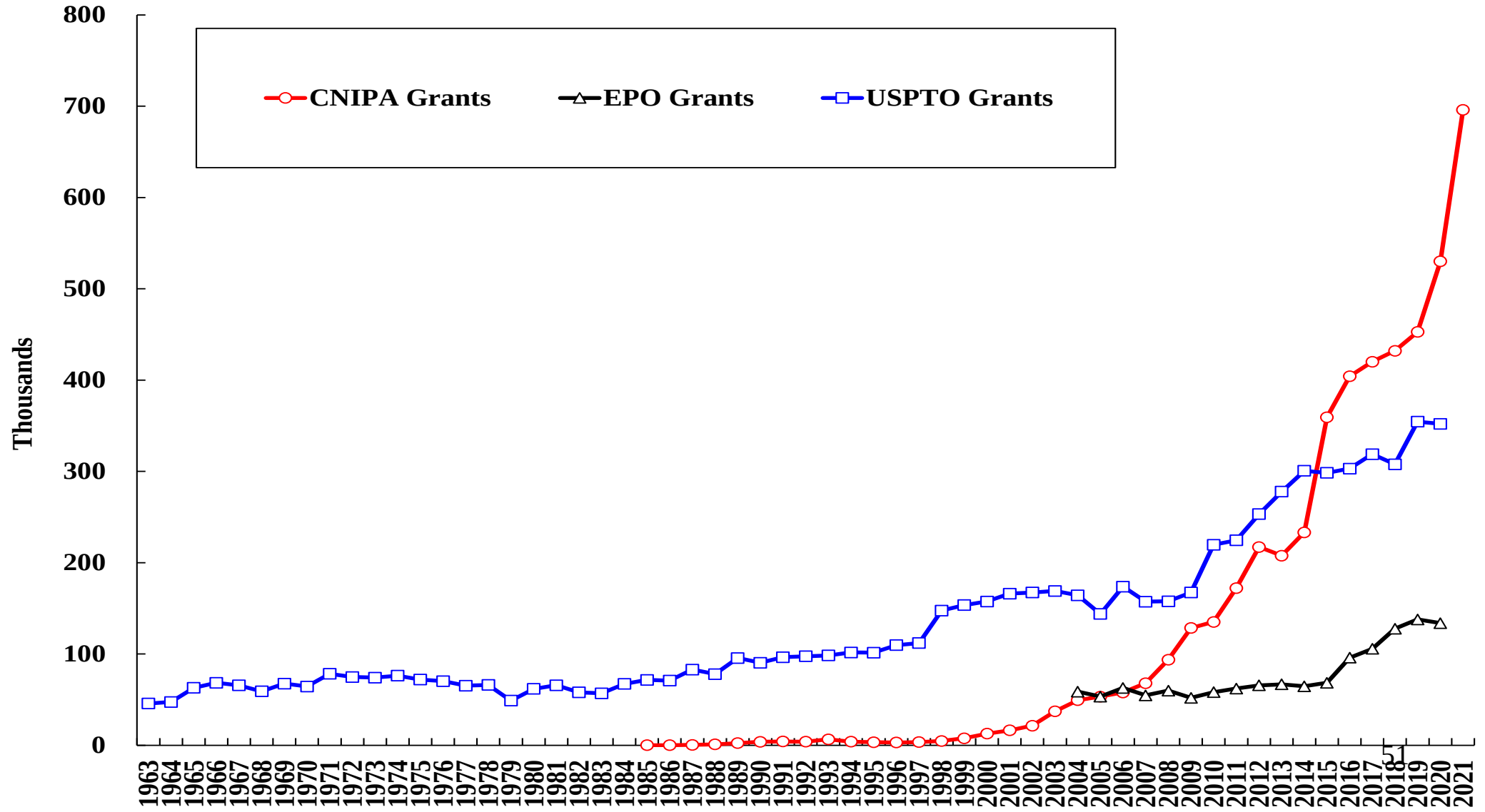
The COVID-19 Epidemic: International Comparison of Population Mortality Rates



Innovation: Patents Awarded

- China has been increasing its investment in research and development (R&D), which reached 2.44% of GDP in 2021.
- Since 2014, it has also strengthened intellectual property right protection significantly by establishing special intellectual property courts with sole nationwide jurisdiction on such matters.
- The numbers of patents awarded to Chinese discoverers and inventors by respectively the United States Patent and Trademark Office (USPTO), the European Patent Office (EPO), and the China National Intellectual Property Administration (CNIPA), have all been increasing by leaps and bounds in recent years.
- China is now the recipient of the largest number of patent grants in the world from these three patent offices combined.

Chinese Patent Grants Awarded by USPTO, EPO and CNIPA



Innovation:
Scientific and Engineering Articles Published

- The total number of science and engineering articles published in international professional journals by Chinese authors exceeded that by U.S. authors in 2018. Chinese authors now collectively publish the largest number of such articles in the world.
- The number of top 10% most cited scientific articles by Chinese authors overtook that by U.S. authors in 2019, according to a Japanese study.
- A recent study published in the journal Scientometrics shows that China and the U.S. were neck and neck in the number of top 1% most cited scientific articles in 2019. China trailed the U.S. and the European Union countries for many years.

Innovation:
The Number of Top 1% Most Cited Articles

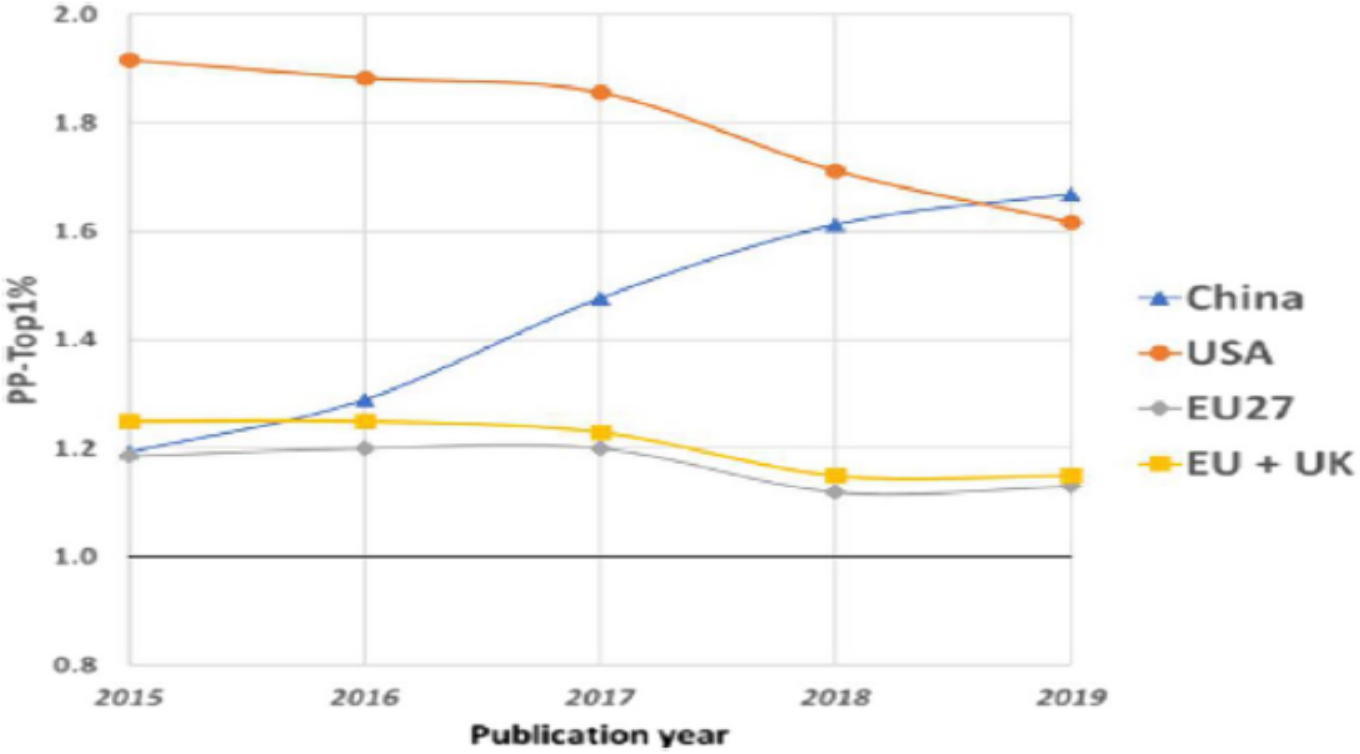


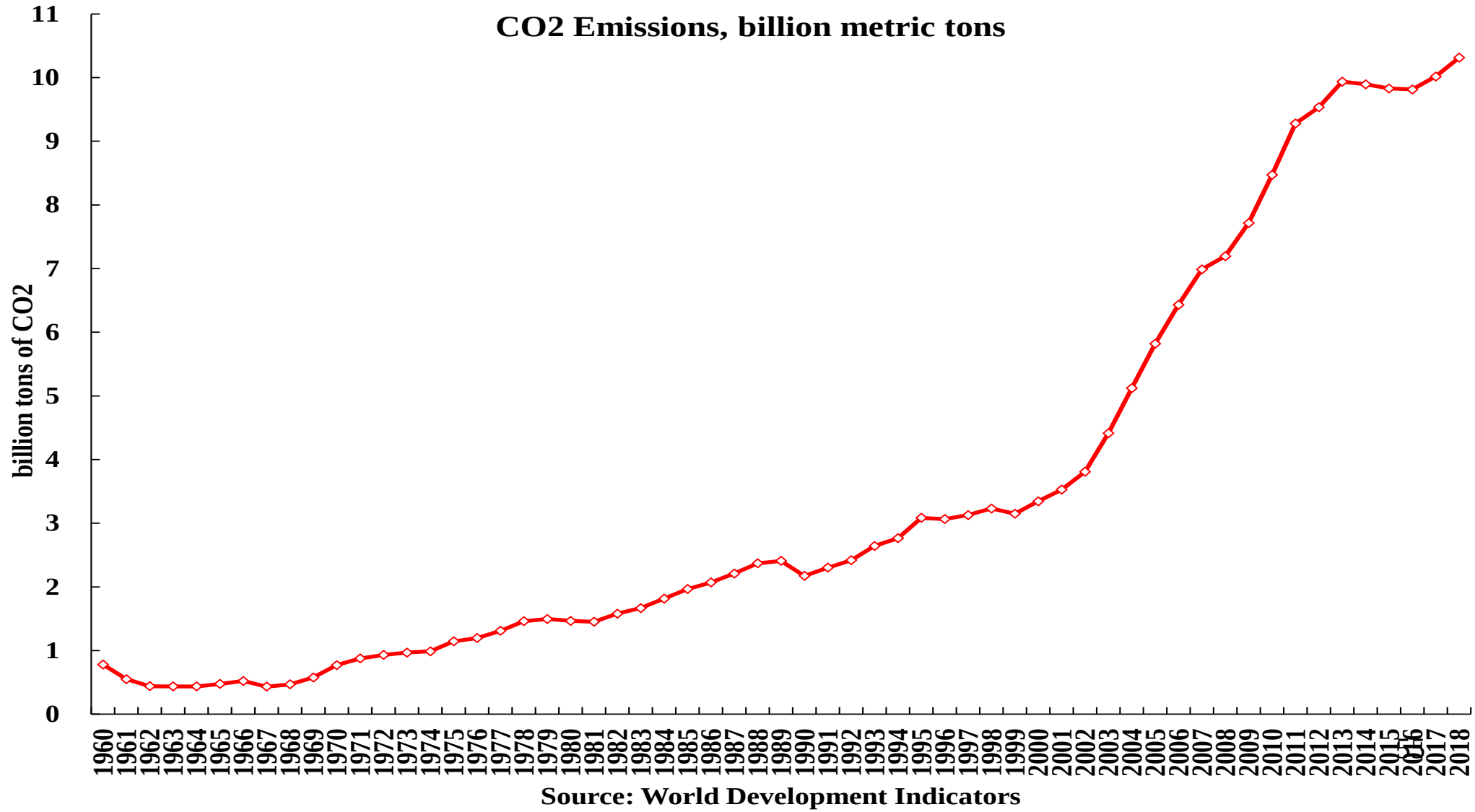
Fig. 2 Percentage participation in the top-1% (PP-Top1%) most-highly-cited publications (worldwide) by papers with an address in the United States, China, and the EU (with and without the UK); articles, reviews, and letters; retrieval from the Web of Science "Flagship" Collection on March 6, 2021

Source：Wagner, Caroline S., Lin Zhang, and Loet Leydesdorff. "A discussion of measuring the top-1% most-highly cited publications: quality and impact of Chinese papers," Scientometrics, 2022. https://doi.org/10.1007/s11192-022-04291-z

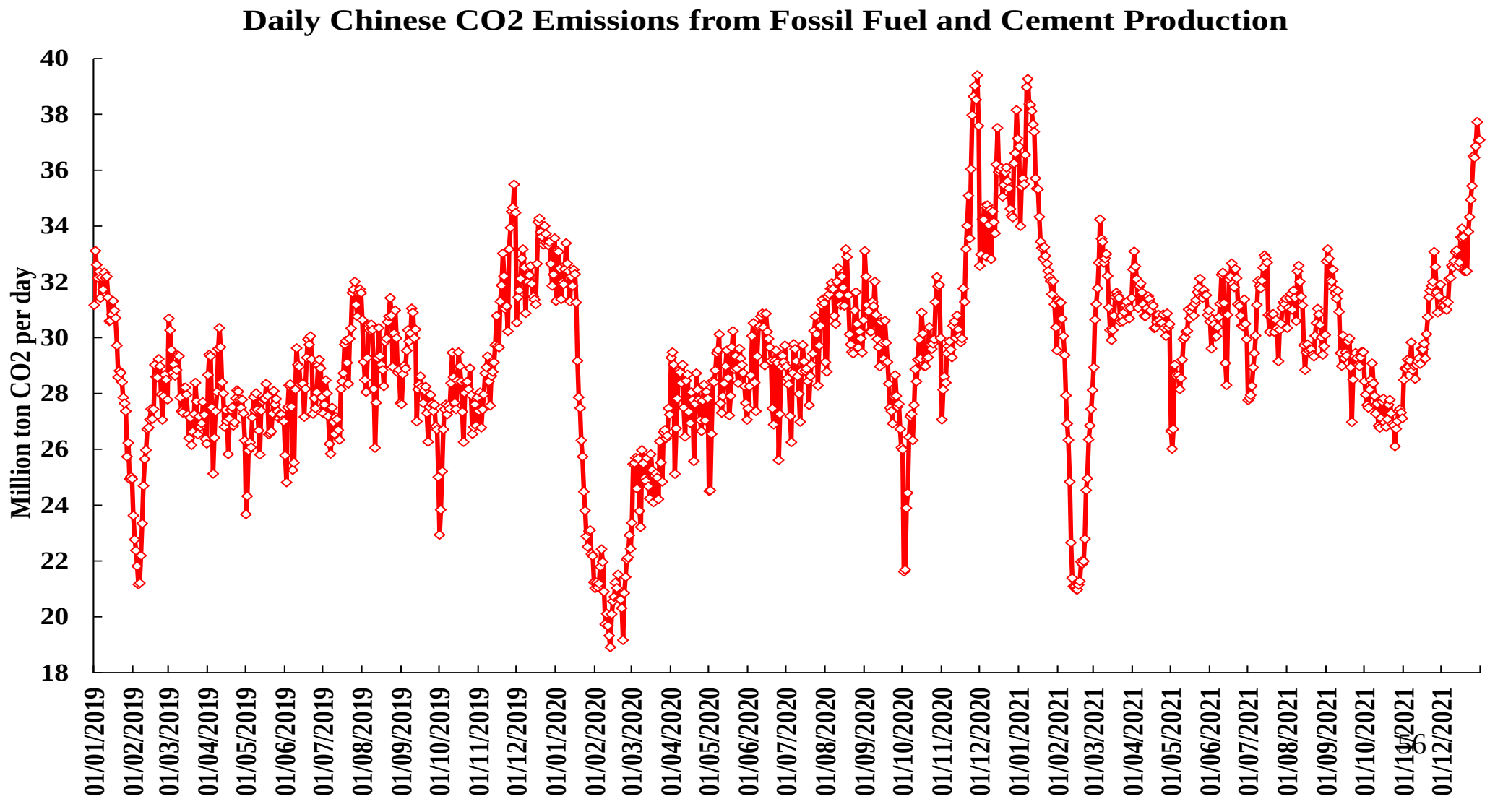
Prevention of Climate Change: Peaking by 2030 and Achieving Neutrality by 2060

- President XI Jinping committed China to peak its carbon emissions by 2030 and to achieve carbon neutrality by 2060.
- These objectives will be achieved through, for example:
  - Massive expansion of renewable energy, including hydro, massive solar and wind power farms, and potentially nuclear fusion, as sources of electricity generation, replacing the fossil fuels
  - Ultra-high-voltage long-distance transmission of electricity from the West to the East
  - Replacement of fossil-fuel vehicles with electric and hydrogen vehicles
  - Substitution of airplanes by high-speed trains for domestic travel
  - Large-scale re-forestation
- Carbon dioxide emissions have basically plateaued in China since the early 2010s, after a period of rapid increase. The emissions have been been growing very slowly. If current trends continue, it is entirely feasible that emissions will peak before 2030 and fall to zero by 2060.

Total Carbon Dioxide Emissions, 1960-the Present: World Development Indicators Data



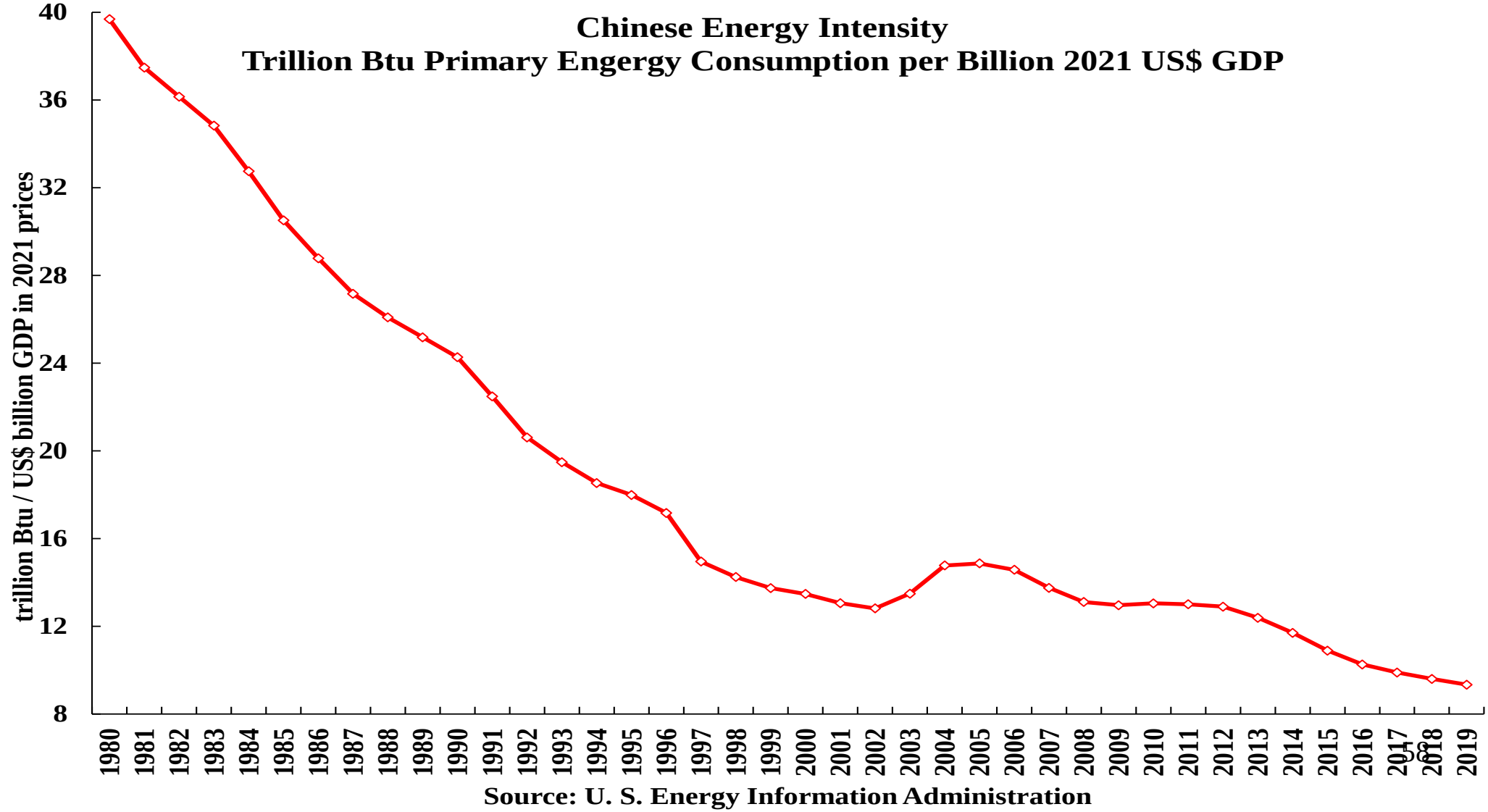
Daily Chinese Carbon Dioxide Emissions: 01/01/2019-31/12/2021



The Energy Intensity Has Declined

- The energy intensity, primary energy consumed per unit real GDP, has been declining over time.
- This is due to a number of factors:
  - Energy conservation efforts both public and private as a result of prices, taxes and regulatory requirements;
  - Technological improvements, e.g., higher efficiency and lower transmission losses; and
  - The relative expansion of the tertiary (services) sector and the relative contraction of the secondary (manufacturing, mining and construction) sector.

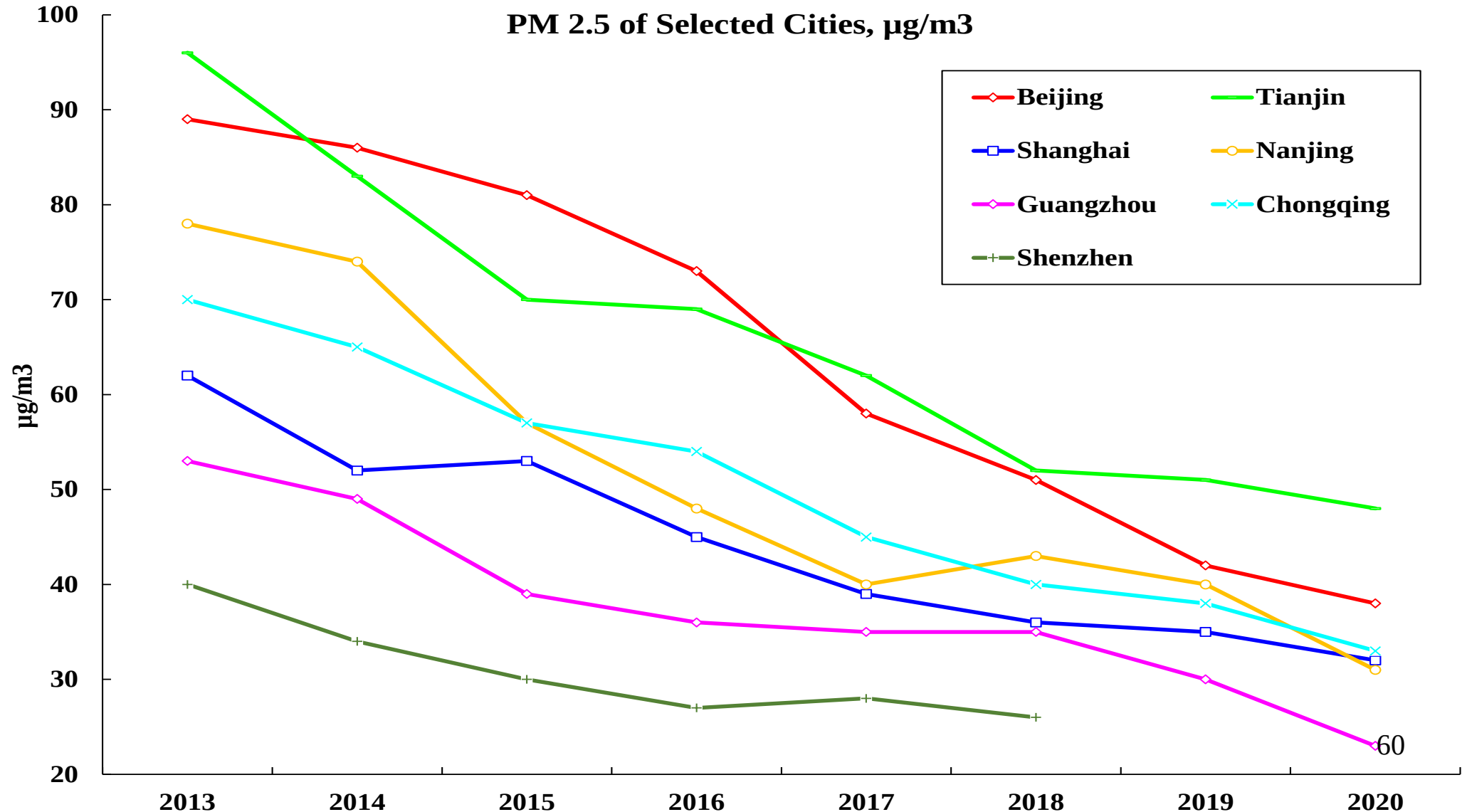
The Energy Intensity, 1980-2019



Air and Water Quality

- The quality of air in major urban centres have improved significantly.
- Fine particulate matter 2.5 (PM2.5) is an air pollutant that reduces visibility and causes the air to appear hazy when the level is high. It is also a concern for people's health.
- China implemented the new ambient air quality standard (GB3095-2012) in 2013. The levels of PM2.5 in the air of 31 major Chinese cities have been declining since. The actual levels of PM 2.5 of seven major cities—Beijing, Chongqing, Guangzhou, Nanjing, Shanghai, Shenzhen and Tianjin—are shown in the following chart.
- A comparison of a PM2.5 map of China in 2015 and 2021 is presented in the chart following the next chart (blue is good and red is bad).

The Level of PM2.5 in the Air of Major Chinese Cities, microgramme per cubic metre



The Level of PM2.5 in the Air: A Comparison of 2015 and 2021 (from http://www.ipe.org.cn)

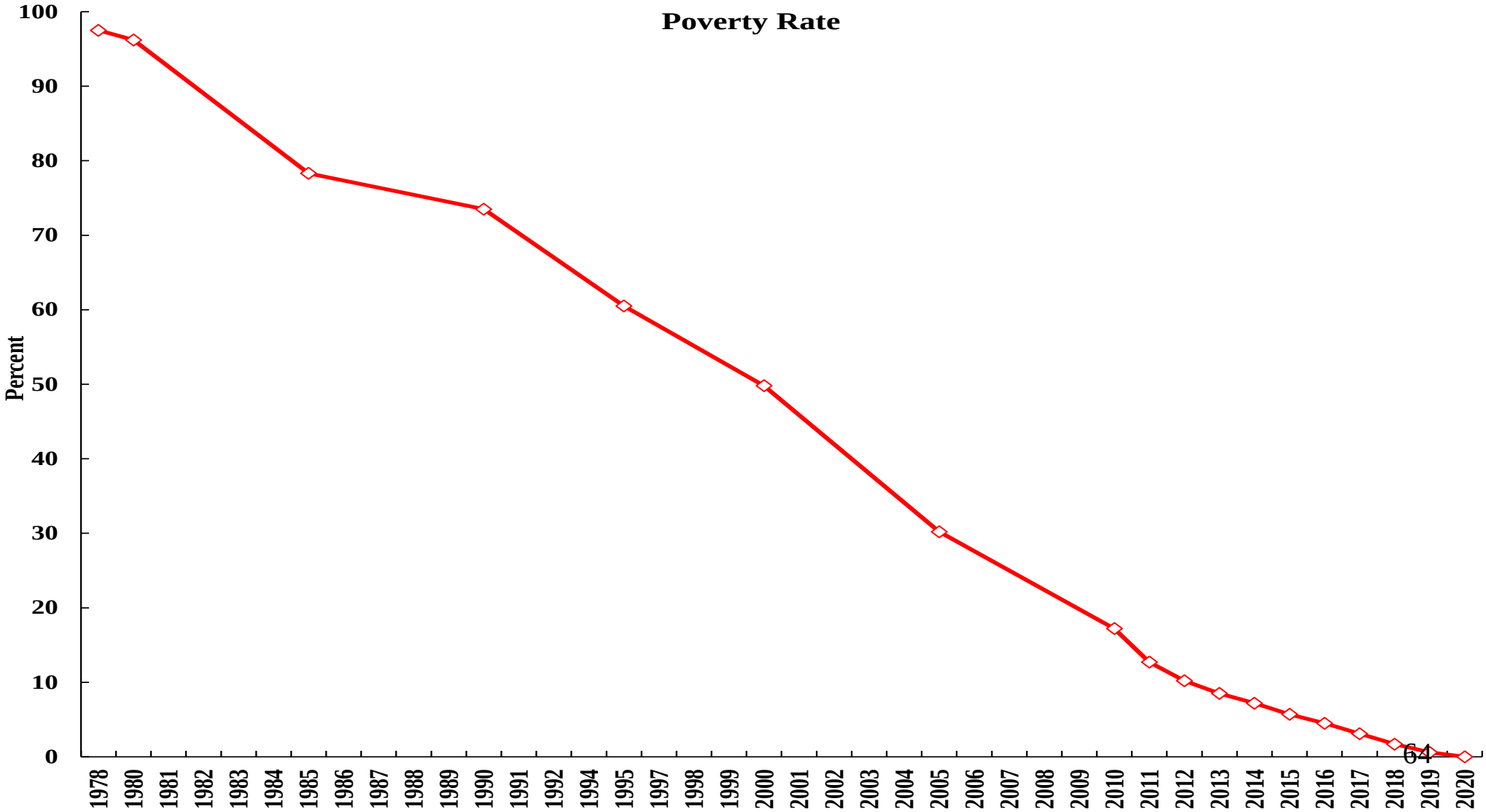
Air and Water Quality:
The Clearing of Huang He (The Yellow River)

- The Huang He (Yellow River), the second longest river in China, used to be very polluted and full of fine sediments, and would flood easily. Its water is now in the process of being cleared up through the planting of vegetation in the upstream regions of the River. The vegetation holds the top soil in place and prevents it from being blown into the river by the winds.

The Eradication of Extreme Poverty

- China has been the most successful in the eradication of chronic extreme poverty.
- The Chinese poverty standard of 2010 defines a family to be in poverty if its annual per capita income is below 2,300 Yuan in 2010 prices. This is equivalent to approximately 3,054 Yuan in 2021 prices (US$479).
- In 1978, before the beginning of the economic reform and opening, the poverty rate according to this standard was a whopping 97.5%! By the end of 2020 it reached zero. Granted that this is still a rather low level of annual income per capita, but it is slightly more than US$1.30 per person per day, higher than the United Nations standard of one U.S. Dollar a day.
- We should emphasise that this is a permanent eradication of extreme poverty, rather than a one-off relief. The formerly extremely poor are now able to provide a decent living for themselves in a sustainable manner.

The Eradication of Extreme Poverty: The Share of Population under the 2010 Poverty Line



Chinese Economic Development Strategies

- Since 1978, the beginning of Chinese economic reform and opening, the goal has been the creation of a socialist market economy that participates in the world. Mandatory central planning was replaced by the market. Several strategies have evolved over time:
  - Infrastructural investment
  - The “dual-circulation” development strategy
  - “Common prosperity”

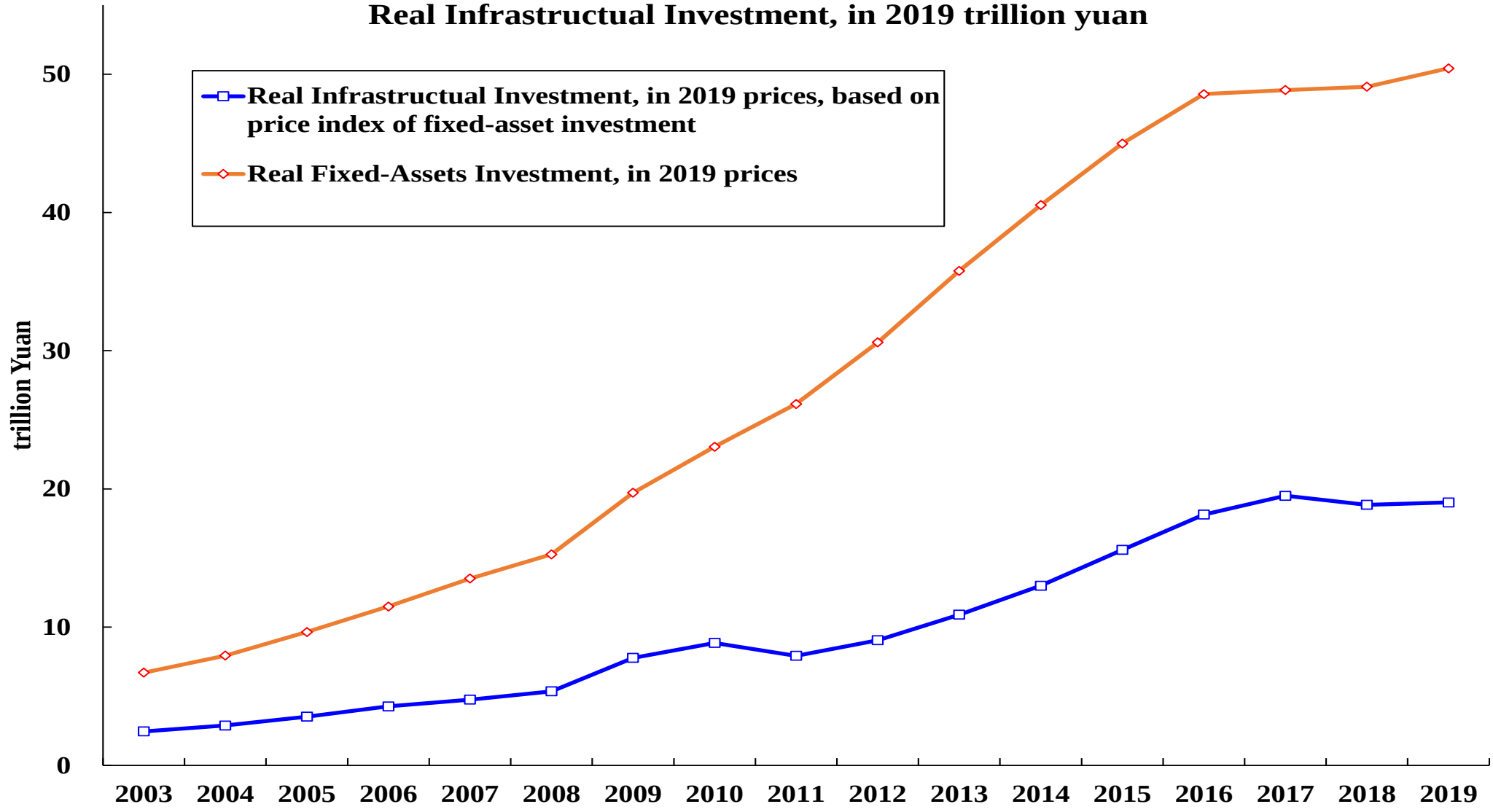
Infrastructural Investment

- Infrastructural investment includes investment in communication, transportation, and power. Infrastructural investment is complementary to non-infrastructural fixed-assets investment because it can enhance the latter's rate of return. (Think of how a new highway can enhance and facilitate the expansion of trade among the enterprises located en route.)
- In addition, many infrastructural investments are "development-leading" investments, with their supplies creating their own demands, as opposed to "developing-lagging" investments, that is, investments that are undertaken only when the demands already exist. "Development-leading" infrastructural investments can generate significant externalities and enhance the returns of other fixed-assets investments both public and private.

Infrastructural Investment

- Real fixed-assets investment, including real infrastructural investment, grew rapidly in China between 2008 and 2017, partly as a response to the Global Financial Crisis of 2008. Since 2017, their rates of growth have considerably moderated.
- Infrastructural investment is a major component of fixed-assets investment. The share of infrastructural investment in total fixed-assets investment ranged between a low of 30 percent and a high of 40 percent between 2003 and 2021, with an average of 35.8 percent.
- Infrastructural investment in communication and transportation has also helped to make the Chinese economy a single unified market, realising the huge benefits of its economies of scale.
- However, infrastructural investment frequently generates benefits known as externalities that cannot be captured by the investment itself and hence must be financed or subsidised by the government.

Real Fixed-Assets Investment and Real Infrastructural Investment, 2019 prices



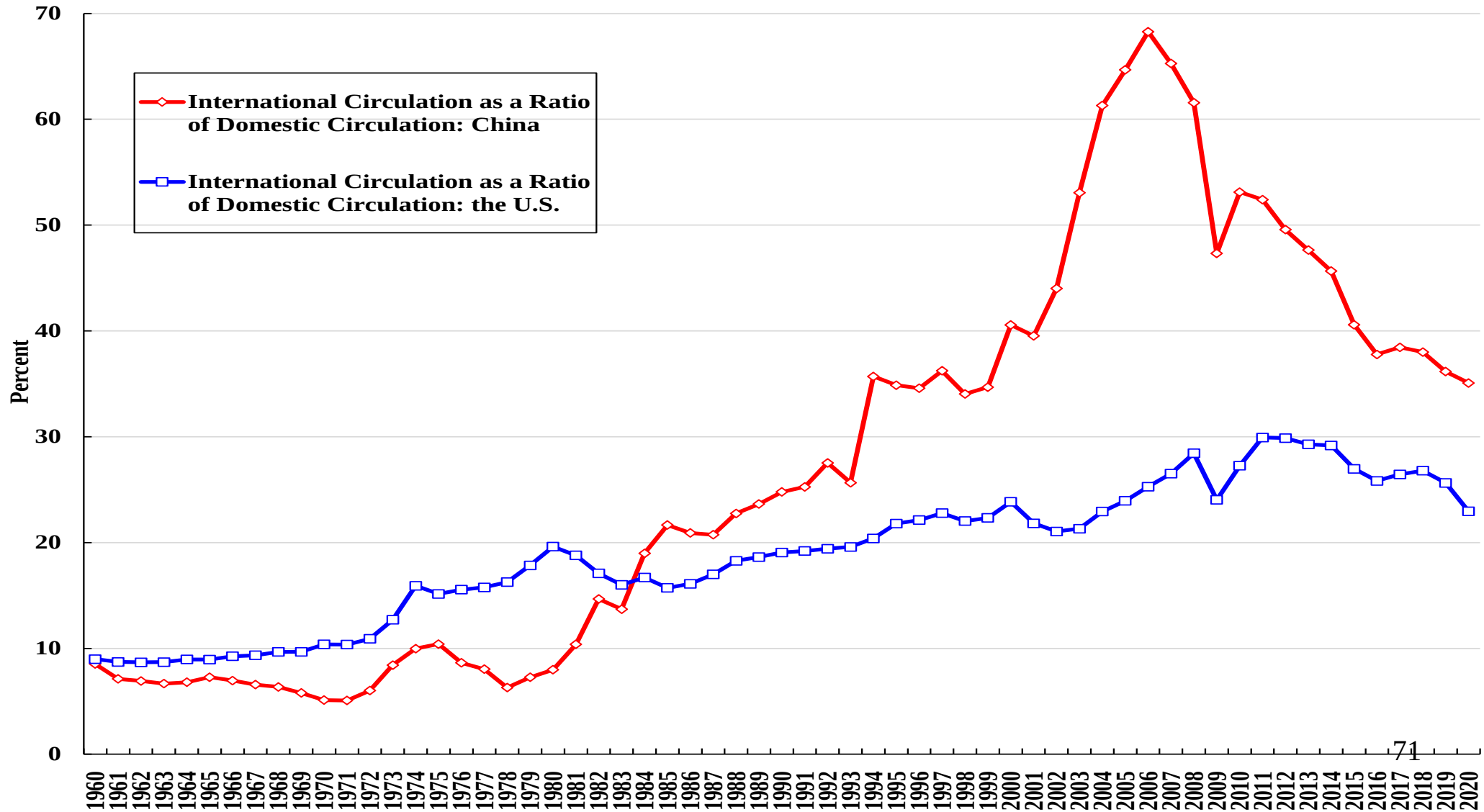
The Dual-Circulation Economic Development Strategy

- The Chinese economy will pursue a dual-circulation development strategy with a domestic circulation and an international circulation complementing each other, but with the domestic circulation playing the primary role, which is to be expected for large continental economies like China (and also the U.S.).
- The Chinese economy is no longer export-driven. It aims to have balanced international trade. It will be domestic demand-driven—by household consumption, gross domestic investment, and public goods consumption.
- The adoption of a dual circulation strategy by China is evidence of its recognition that total self-sufficiency is not a viable alternative and of its continuing commitment to an open economy and to economic globalisation.

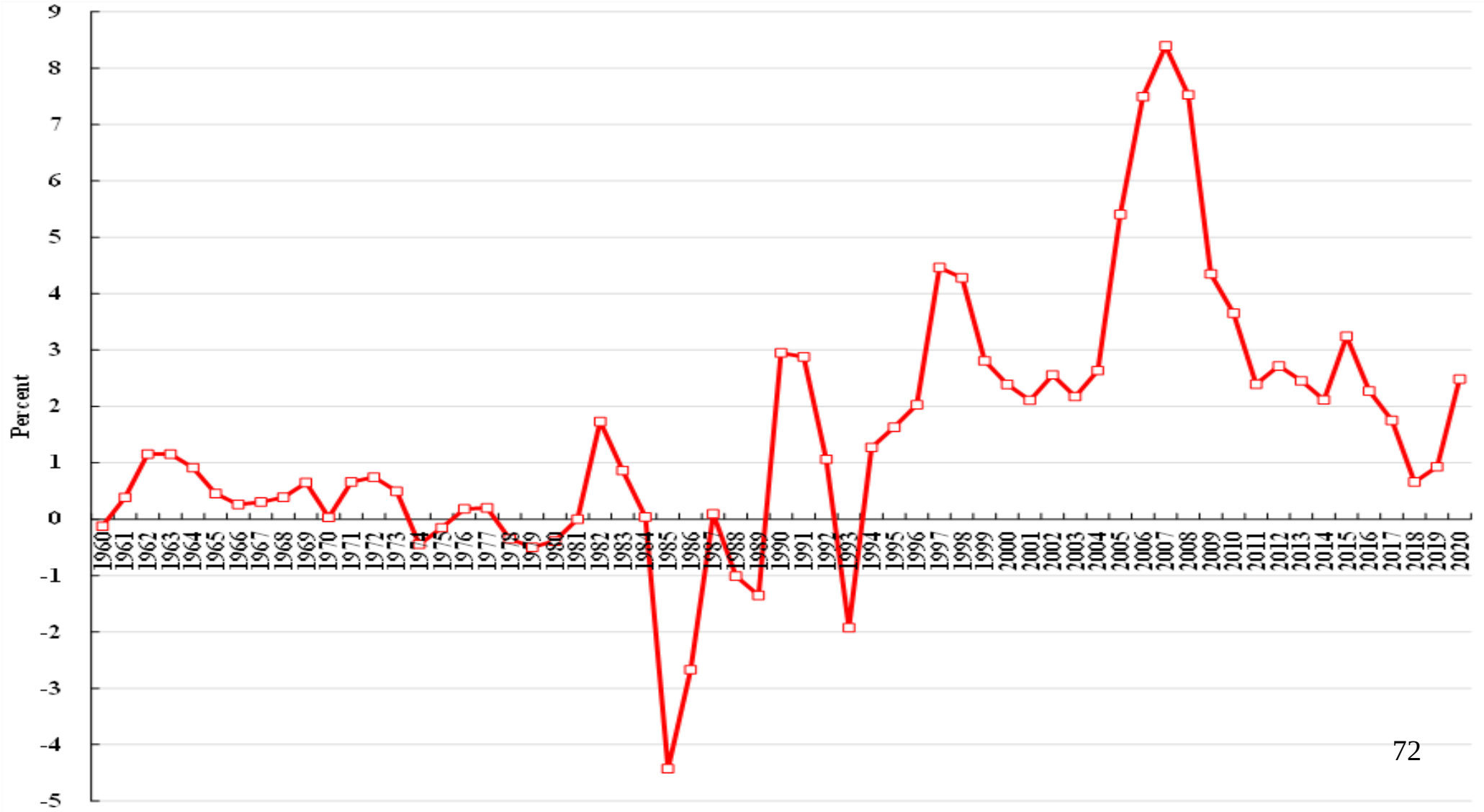
The Dual-Circulation Economic Development Strategy

- The Chinese ratio of international circulation to domestic circulation was below 10 percent before 1981, when it began to rise. It reached a peak of almost 70 percent in 2006, but then declined to 35 percent by 2020.
- The U.S. ratio was around 20 percent between 1980 and 2000 and rose to a peak of 30 percent in 2011, but then declined to 23 percent by 2020. It is expected that the ratios for both countries will be declining some more over time and eventually reach similar levels.
- A possible de-coupling of the Chinese and U.S. economies will increase the importance of domestic circulation for China.
- Public goods provision can become a major source of increase in domestic aggregate demand for both consumption and investment going forward.

International Circulation as a Ratio of Domestic Circulation: China and the U.S. (%)



Chinese Trade Balance in Goods and Services as a Percent of GDP



Common Prosperity

- Secondary and tertiary redistribution through taxation and transfer payments can be instruments for achieving “common prosperity”.
- However, the “common prosperity” promoted by President XI Jinping should not be equated with simple re-distribution. It genuinely means giving other people who have not gotten rich yet an opportunity to get rich.
- The recent establishment of the new Beijing Stock Exchange is an indication that the private sector consisting mostly of small and medium enterprises will be allowed to grow and prosper.
- Policies that make the market system more competitive, restrain monopolistic tendencies, support the predominantly private small and medium enterprises, and prevent the emergence of a plutocracy all have the effect of promoting “common prosperity”.
- Eradication and alleviation of poverty also promote “common prosperity”.

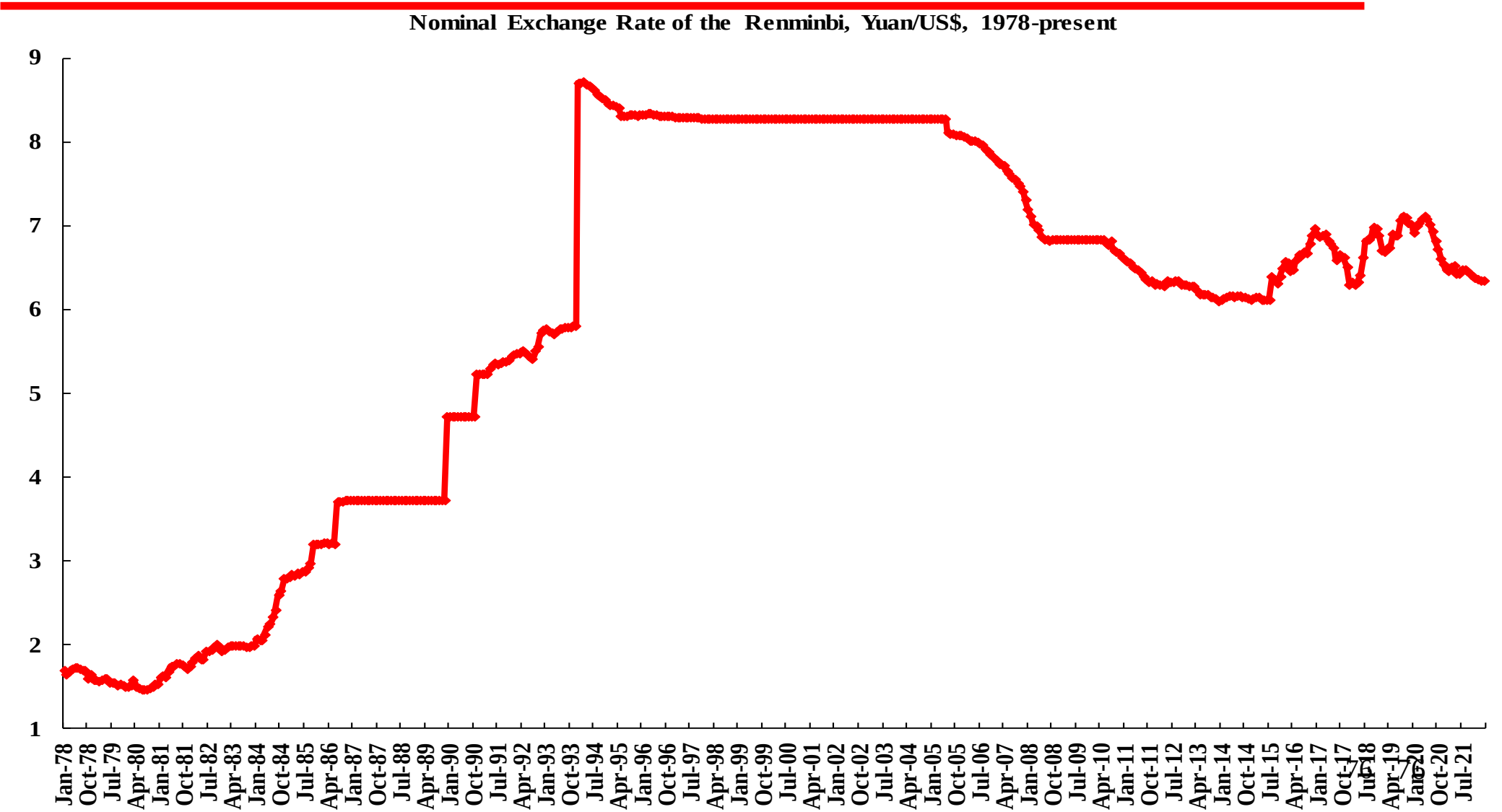
Common Prosperity

- The provision of public goods, for example, clean air and water, and health care, also constitutes a form of re-distribution in kind, and hence also directly advances the goal of "common prosperity".
- The promotion of equity finance, through the establishment of stock exchanges, can reduce the reliance on debt finance and hence the overall level of leverage in the economy, and help to enhance economic and financial stability.
- Eventually, China can use even more stock exchanges, for example in Chongqing and Tianjin.

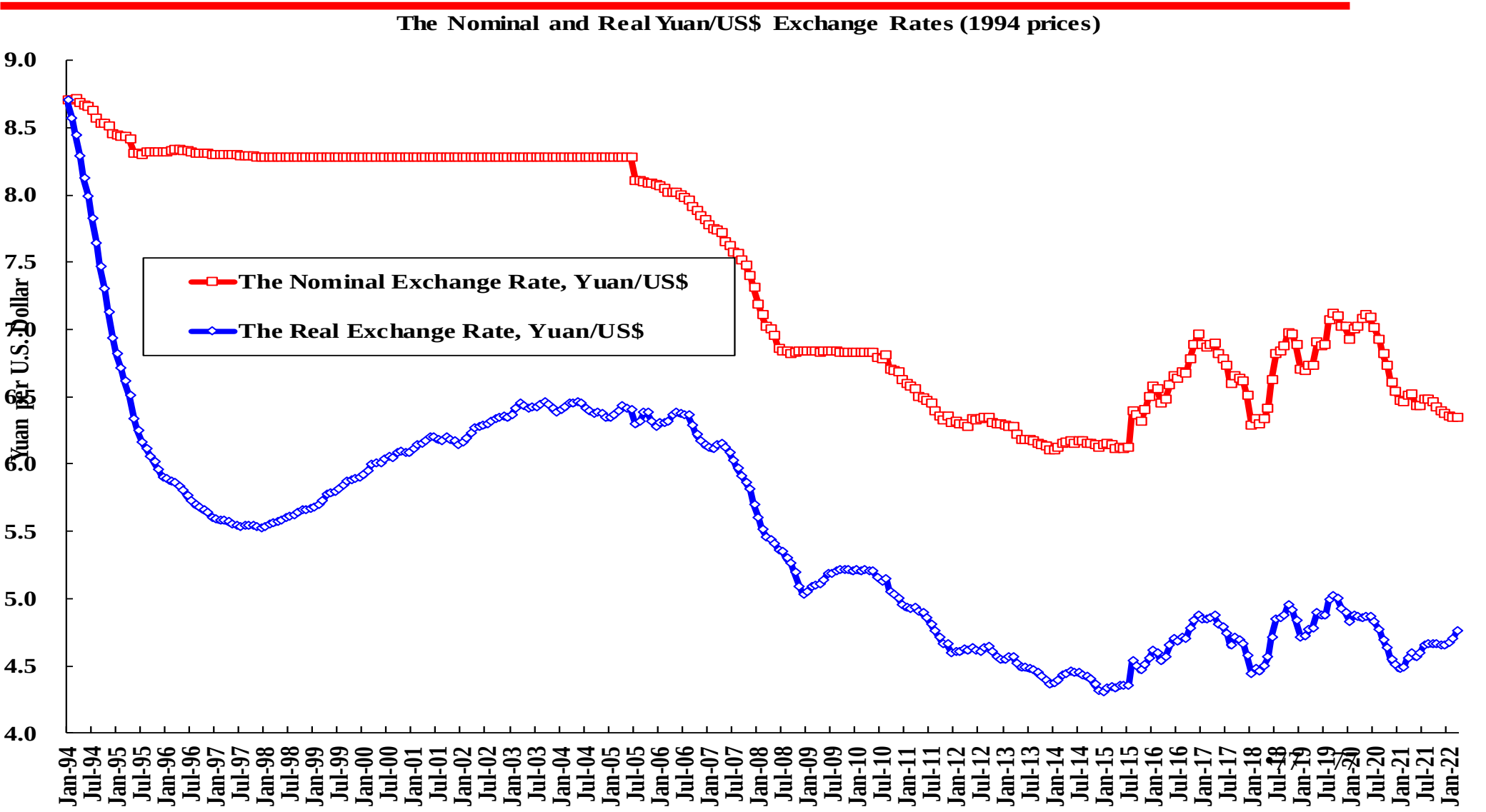
The Internationalisation of the Renminbi

- As part of the continuing economic reform and opening to the world, China will be trying to increase the use of its own currency, the Renminbi, in the invoicing, clearing and settlement of its international transactions.
- One U.S. Dollar was worth less than 2 Yuan in 1978. Beginning in the early 1980s, the Renminbi devalued almost continuously until 1 January 1994, when it became current-account convertible, with an exchange rate of 8.7 Yuan per US$.
- Since then, the Renminbi has appreciated in both nominal and real terms. It currently trades at approximately 6.4 Yuan per US$, an appreciation of 26.5%. In real terms, it has appreciated by almost 50% because of the higher rate of inflation in China relative to the U.S.

Nominal Exchange Rate of the Renminbi, Yuan/US$, 1978-the Present



The Nominal and Real Yuan/US$ Exchange Rates



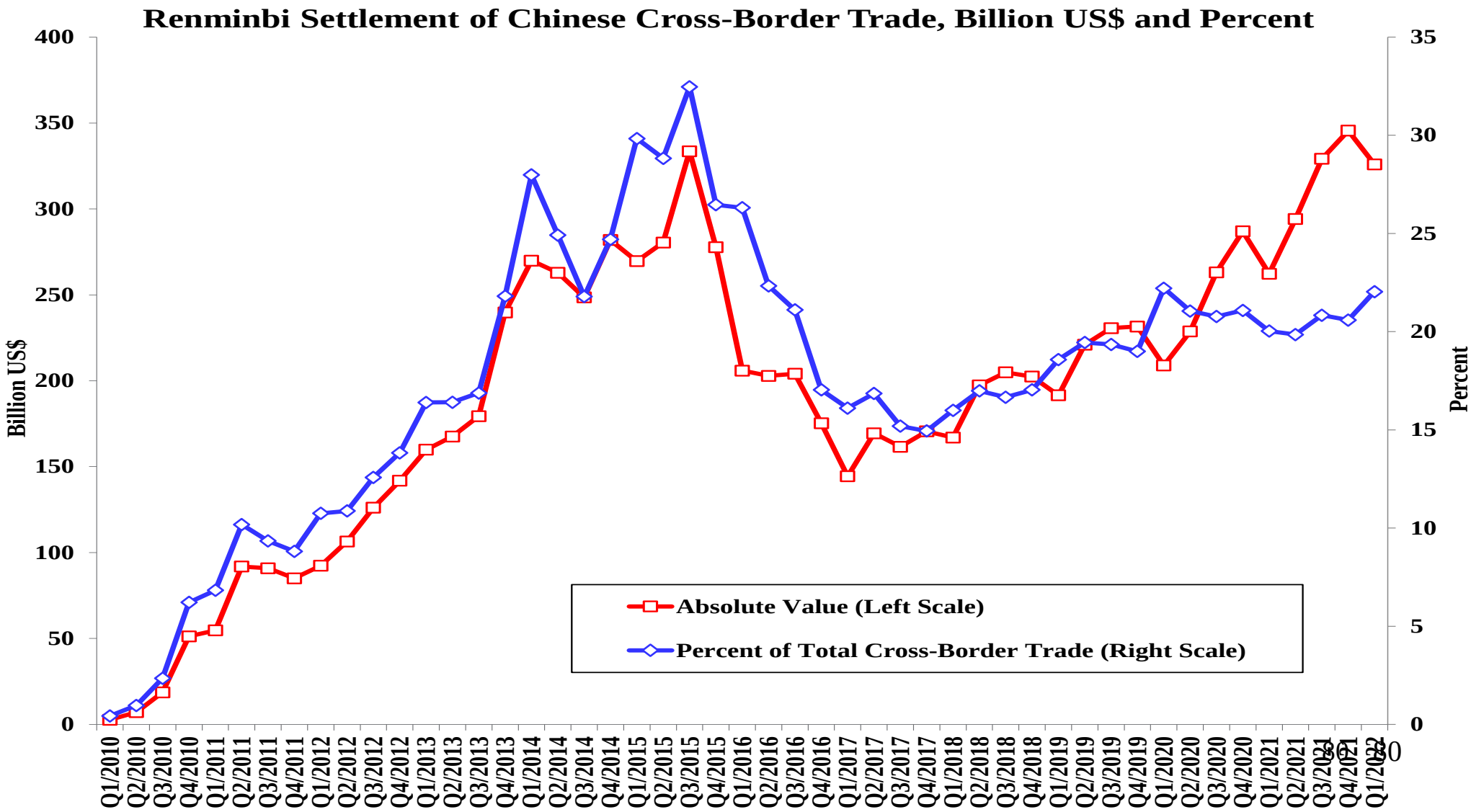
The Internationalisation of the Renminbi

- The Renminbi has been current-account convertible since 1 January 1994 and still is, that is, foreign exchange earned from Chinese exports of goods and services can be readily converted into Renminbi and Renminbi used as payments for imports of goods and services can be readily converted into foreign exchange.
- It is not completely capital-account convertible because some capital-account inflows and outflows still need prior government approval.
- However, as long as Renminbi can be used to purchase goods and services both inside and outside of the Mainland, people are willing to hold the Renminbi for transaction purposes.

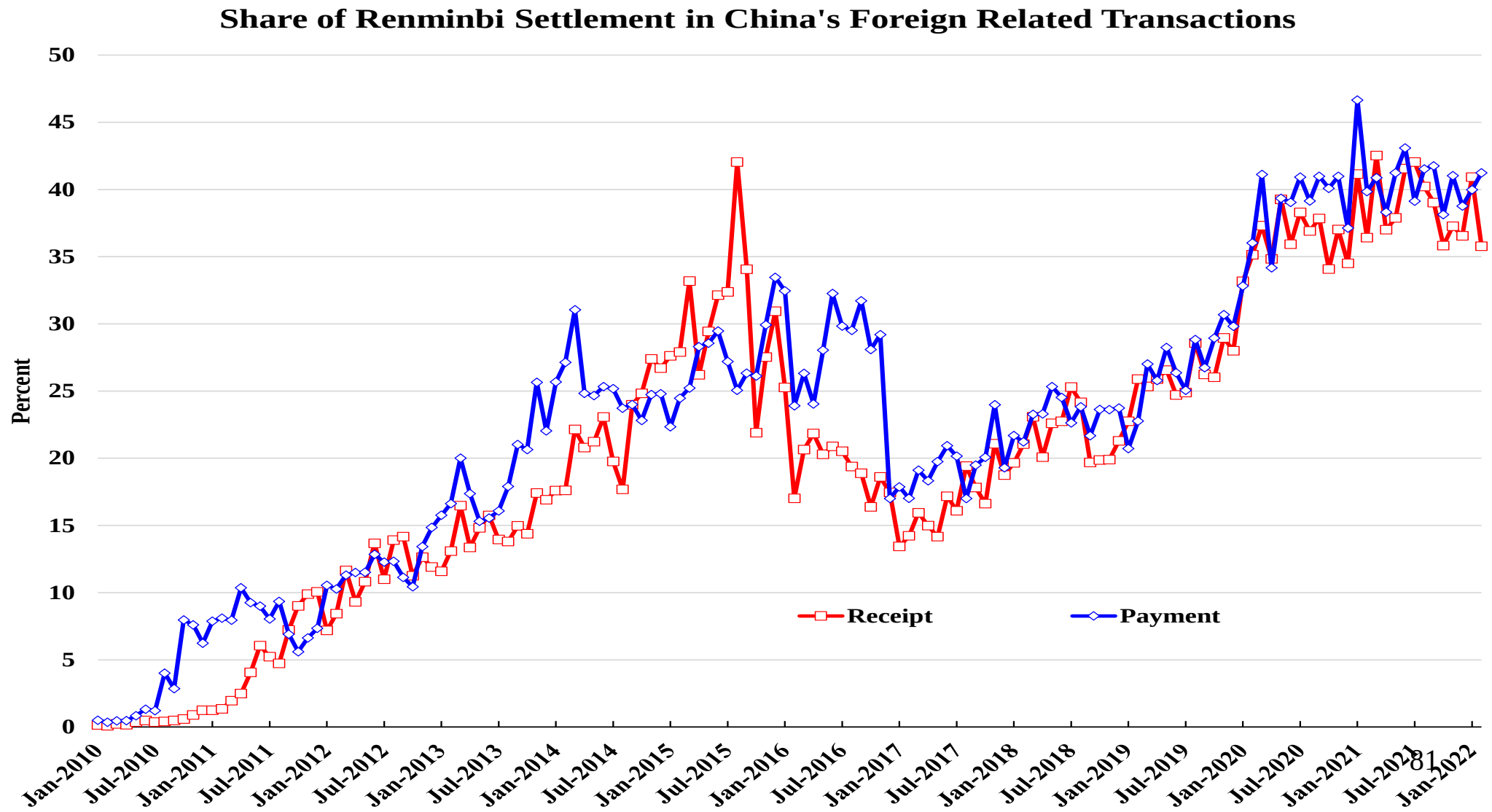
The Internationalisation of the Renminbi

- China does not try to seek a trade advantage through devaluation. It did not even devalue during the 1997 East Asian currency crisis despite the large devaluations of the Republic of Korea and all ASEAN countries, all of which were competitors in its export markets at the time.
- The People's Bank of China (PBoC), the central bank of China, does intervene in the domestic foreign exchange market when necessary to keep the Renminbi exchange rate relatively stable and any changes relatively smooth. It is actually the responsibility of every central bank to do so. There is little evidence that China has been manipulating its exchange rate to gain an advantage in international trade which is close to being balanced. In fact, a trade balance of close to zero is prima facie evidence that the exchange rate is neither over-valued or under-valued.
- However, the "quantitative easing" policies adopted by the U. S. Federal Reserve Board in the aftermath of the Global Financial Crisis of 2008 may be viewed as measures to achieve a relative devaluation of the U.S. Dollar against all other currencies.

Renminbi Settlement of Chinese Cross-Border Trade, Billion US$ and Percent



Share of Renminbi Settlement in China's Foreign Related Transactions



The Inherent Advantages of Clearing and Settlement in Own Currencies

- There are inherent advantages for two trading-partner countries to invoice, clear and settle their bilateral trade transactions in their own currencies:
- (1) Only a single currency exchange is involved, thus reducing transaction costs. (If a third-country currency is used, there will be two currency exchanges, for example, from one local currency into US$, and then from US$ into the other local currency.)
- (2) Since there is a time lag between the placement of an order and the actual delivery and payment, there will also be two exchange rate risks that have to be separately assumed by the respective exporter and importer if a third-country currency is used instead of one of the two own currencies.
- (3) Using own currencies for clearing and settlement reduces the need for official foreign exchange reserves that have to be maintained by the respective central banks.

The Inherent Advantages of Clearing and Settlement in Own Currencies

- Given these advantages, all countries should prefer to invoice, clear and settle their international trade transactions in their own currencies insofar as possible. The central banks of the trading-partner countries should enter into currency swap agreements with one another, and stand ready to buy or sell forward one another's currencies at cost from or to bona fide exporters and importers to encourage the use of own currencies for their trade transactions. It will lower the costs and raise the net benefits of economic globalisation to all the trading countries. For example, India and Russia will be clearing and settling their bilateral trade transactions in Rupees and Roubles.
- Two trading-partner countries do not invoice, clear and settle their bilateral trade transactions in their own currencies only because they do not trust each other's currency. This situation arises most commonly because the bilateral trade is not balanced. If the bilateral trade is balanced, no one will be left holding a currency that it does not want to hold, and no one should object to the use of own currencies.

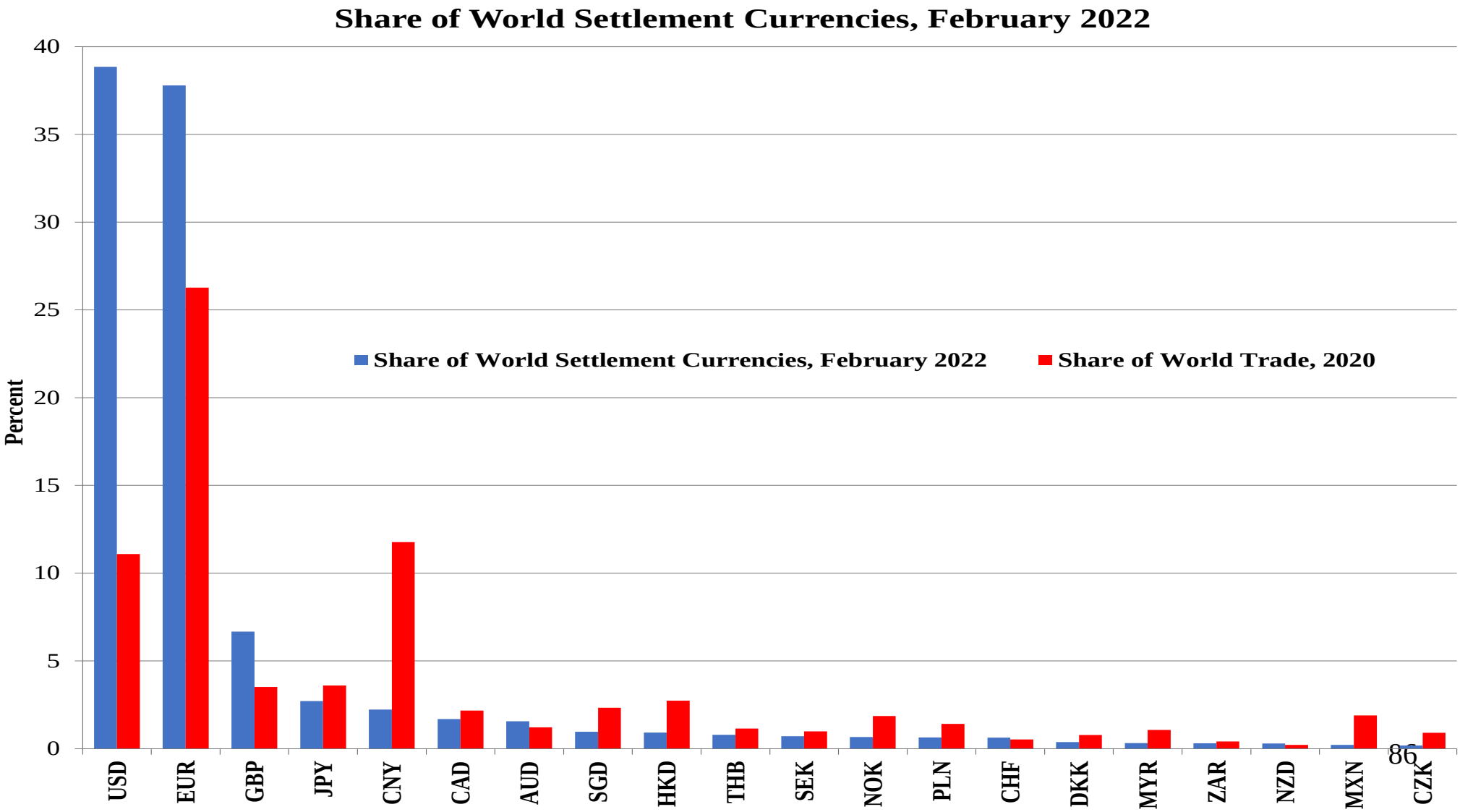
The Internationalisation of the Renminbi

- The first step towards the internationalisation of the Renminbi is for China to persuade its trading-partner countries to use their own currencies to clear and settle their bilateral trade transactions. This is actually win-win for everyone. It will reduce both transactions costs (only one currency exchange) and exchange rate risks (only one exchange rate risk). The People's Bank of China (PBoC) should stand ready to buy or sell forward currencies at cost from or to bona fide exporters and importers to encourage the use of own currencies for clearing and settlement.
- China already has agreements with several countries, e.g., Indonesia and Russia, to settle their bilateral trade in each other's own currencies.

The Clearing and Settlement of International Transactions

- The U.S. Dollar is currently the most important medium of international exchange. It accounts for 39% of world settlement of all international transactions even though the U.S. accounted for only 11.1% of all international trade (including both goods and services) transactions in 2020. For most countries, international trade transactions constitute the bulk of their international transactions, but this is not true of major international investors such as the U.S. and Japan.
- In contrast, even though China accounted for 11.8% of all international trade in 2020, more than that of the U.S., the Renminbi is used in only 2.2% of the settlement of all international transactions in 2022.
- By comparison, Japan accounted for 3.6% of all international trade in 2020 and its currency, the Japanese Yen, is used in the settlement of 2.7% of all international transactions.
- If the Renminbi is used in the settlement of the same proportion of international transactions relative to international trade as Japan, its share in world settlement would have risen to 8.9% from its current 2.2%.

The Shares of World Settlement by Currency and World Trade of the Issuer



The Future of the Chinese Economy

- Near-Term Performance
- Long-Term Forecasts

Near-Term Performance

- The rate of growth of Chinese real GDP in 2021 is 8.1%, a significant recovery from the 2.2% of 2020.
- For 2022, the non-mandatory target rate of growth of Chinese real GDP has been set at around 5.5%, the lowest target growth rate for decades. This is because of the multiple objectives that China has with respect to the development of its economy—the emphasis is no longer on the quantity of growth, but on the quality of growth.
- The 5.5% target rate of growth should be feasible. However, the Chinese economy is at the present time subject to possible disruptions from the resurgence of the COVID-19 epidemic in China and the geo-political developments in the rest of the world, which may reduce its real rate of growth by between 0.5 and 1 percent.

Actual and Projected Rates of Growth of Real GDP (% p.a.)

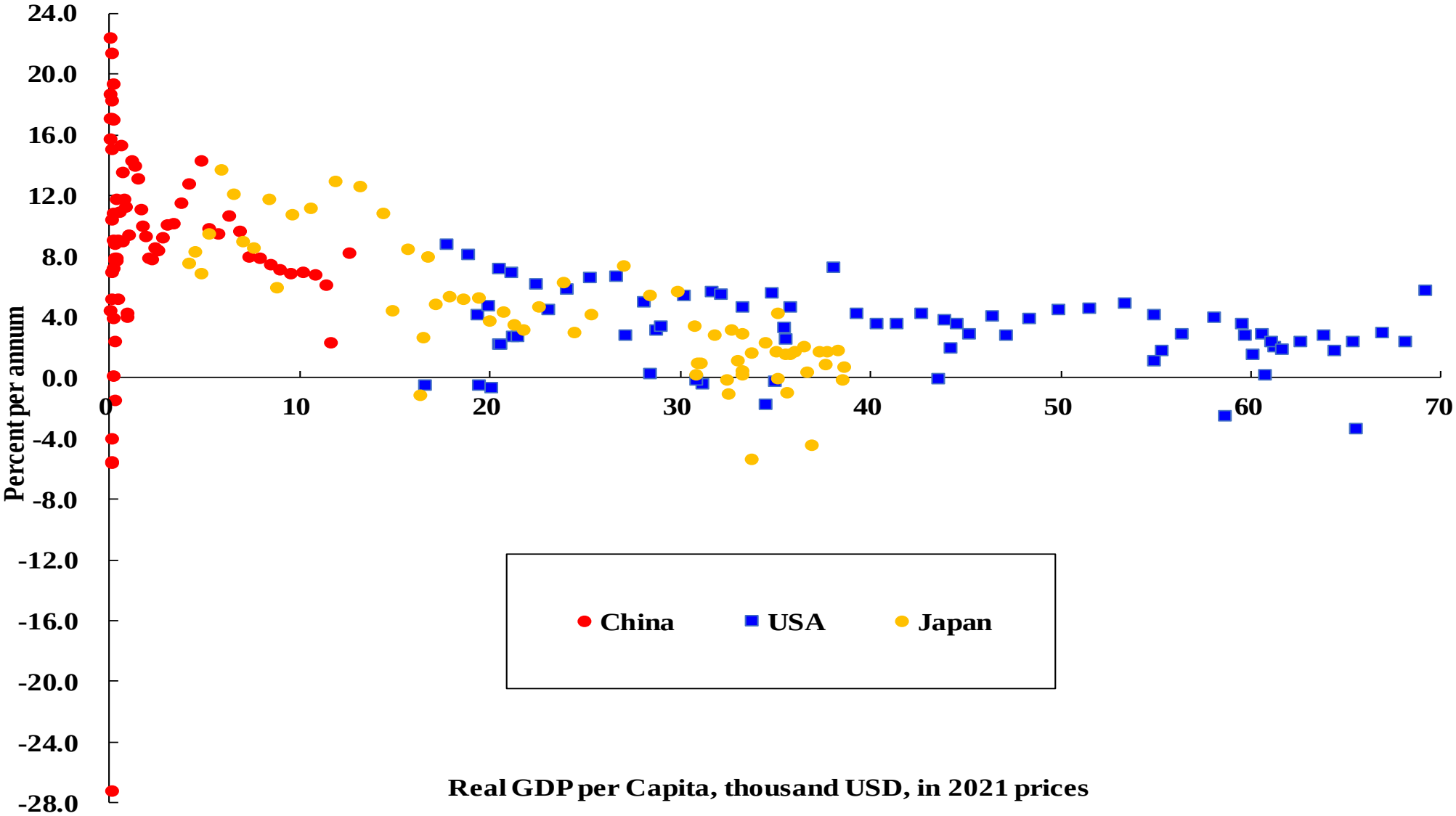
ACTUAL AND PROJECTED RATES OF GROWTH OF REAL GDP (% p.a.)

	2019	2020	2021	2022	2023
The World					
IMF	**2.8**	**-3.1**	**5.9**	**4.4**	**3.8**
WORLD BANK	**2.6**	**-3.4**	**5.5**	**4.1**	**3.2**
China (Mainland)					
IMF		**2.2**	**8.1**	**4.8**	**5.2**
WORLD BANK	**6.0**	**2.2**	**8.1**	**5.1**	**5.3**
The U.S.					
IMF		**-3.4**	**5.7**	**4.0**	**2.6**
WORLD BANK	**2.3**	**-3.4**	**5.7**	**3.7**	**2.6**

Long-Term Forecasts

- It is true that the Chinese economy cannot continue to grow at close to 10% per annum indefinitely, as it did between 1978 and 2018. In fact, it is an empirical regularity that as the real GDP per capita of an economy grows, the real rate of growth of the economy will decline. This is demonstrated in the following chart in which the real rates of economic growth of China, Japan and the U.S. are plotted against their respective real GDPs per capita. As expected, there is a negative relationship.
- However, we note that China, with a GDP per capita of US$12,699 in 2021, is currently still in the range that permitted high rates of growth for both Japan and the U.S. Perhaps when Chinese real GDP per capita reaches US$30,000 in 2021 prices, estimated to be after 2035, the Chinese real rate of economic growth will decline to 5% or below.

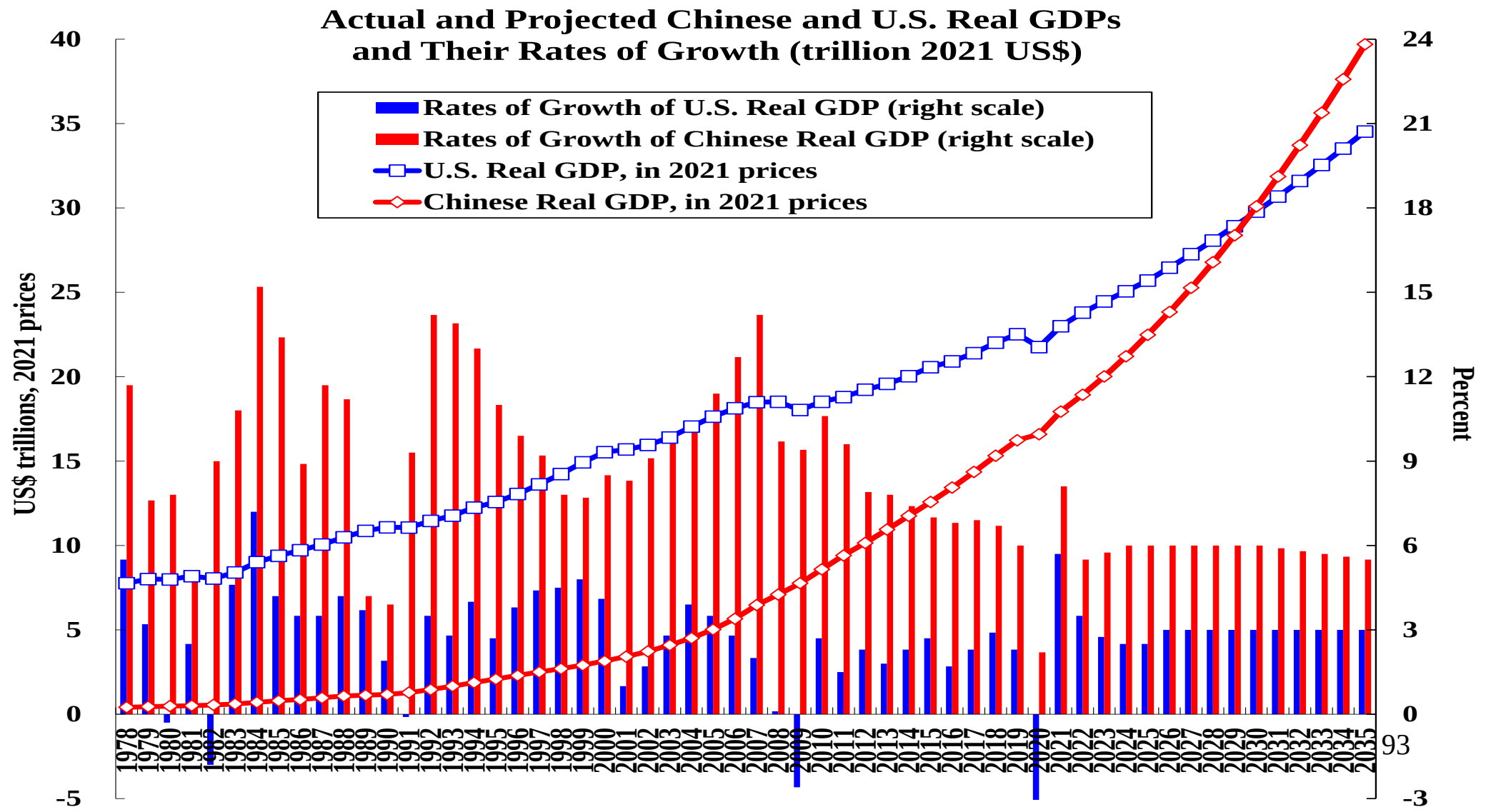
Rate of Growth of GDP vs. Level of Real GDP per Capita: China, Japan and the U.S.



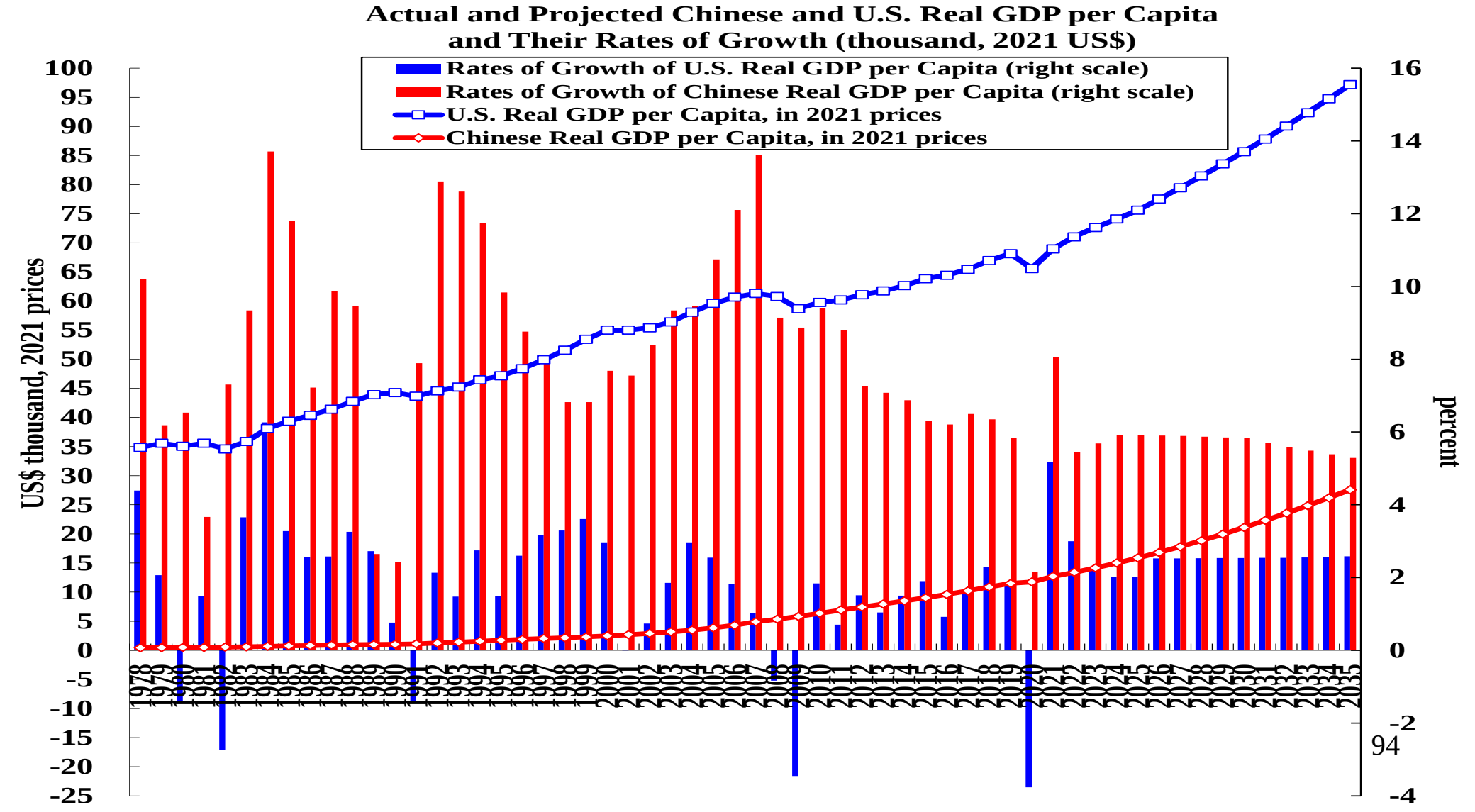
Long-Term Forecasts

- Beyond 2022, the Chinese economy will be able to grow at an average annual rate of close to 6% for at least another decade. The U.S. economy, which is currently subject to the risks of a period of stagflation, will probably be able to grow at a long-term average annual rate of 3%, as it has been doing in recent decades, mostly on the strength of its innovative capacity.
- Our long-term forecasts suggest that the Chinese real GDP will catch up to the U.S. real GDP in 2030, with US$30.1 trillion to the U.S.'s US$29.8 trillion (in 2021 prices).
- Our long-term forecasts also suggest that the Chinese real GDP per capita will still be significantly below the U.S. real GDP per capita in 2030, with US$21.1 thousands to the U.S.'s US$85.7 thousands (in 2021 prices), or less than a quarter.

Comparison of Actual and Projected Chinese and U.S. Real GDPs, 2021 US$, 1978-2035



Comparison of Actual and Projected Chinese and U.S. Real GDPs per Capita,



Concluding Remarks

- The economic development of China during the past seven decades is characterised by not only quantitative growth, but also significant improvements in the "quality" of growth. Most of the "quality" improvements have been brought about through public goods provision.
- Provision of public goods such as education, public health, elderly care, environmental preservation, protection and restoration, basic research, infrastructure, social safety net, and alleviation of poverty has been vastly expanded over the past seventy years, with significant positive results.
- The provision of public goods has also raised the potential GDP of the Chinese economy both directly and indirectly. For example, the productivity of the Chinese labour force has also been greatly enhanced because of the improvements in its quality.

Concluding Remarks

- The Chinese Government has set a modest goal for its economy in 2022: a rate of growth of about 5.5%. On the basis of China's economic fundamentals, this should be quite feasible. The IMF and World Bank projected rates of growth for China are 4.8% and 5.1% respectively.
- The long-term prospects of the Chinese economy are on the whole excellent. While it is true that as the real GDP per capita of an economy rises, its real rate of growth will fall, China's per capita real GDP of US$12,699 in 2021 is still within the range of GDP per capita at which Japanese and U.S. rates of growth were higher than 6% on average. China should be able to achieve an average annual rate of growth of close to 6% over the next five years. However, because of its shift of emphasis to the quality of growth, its measured rate of growth of real GDP may be less than 6%.
- But given that the population of China is four times that of the U.S., and its relative scarcity of natural resources and arable land, Chinese real GDP per capita may not be able to catch up to that of the U.S. until at least the end of this Century, if at all.

Concluding Remarks

- Going forward, the Chinese economy will be domestic demand-driven rather than export-driven. The Chinese economy is not capacity- or supply-constrained. Technical progress, or growth in total factor productivity, will also become an important source of Chinese economic growth.
- It is essential for the Chinese economy to maintain openness. Without economic globalisation and accession to the World Trade Organisation in 2000, the Chinese economy would not be where it is today. Self-reliance should not be equated to total self-sufficiency. We should always remember that it is a dual-circulation and not a mono-circulation development strategy.
- Educational exchange between China and the U.S. and the rest of the world should also be maintained and continued as much as possible. China has benefitted greatly from scientists who had studied and worked abroad, such as DENG Jiaxian, QIAN Sanqiang and QIAN Xuesen. Without them, the "two bombs and one satellite" might not have been possible so soon.