

Will Bharat (India) Surpass China @2047?

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Abstract

It examines the GDP at the current US dollar, GDP growth, GDP per capita, and the inflation rate of India and China from 2000 to 2024 by using descriptive statistical tools of Mean, Median, Regression and Time series for estimation of GDP value, GDP per capita, GDP growth rate at 2047, it is found that average growth rate of GDP and Per capita of India stood at second place when compared to the China during the study period of 25 years. As per time series estimation of GDP at 2047 is 7 trillion as against China estimation of GDP is 42 trillion, as well as per capita of India is 4735 US dollar as against the China estimation is 27268 US dollar, India needs 6 times GDP growth rate to surpass China at 2047. The inflation of India stands higher. It is hardly required to retain an adjustable balance between inflation and GDP with accelerated fiscal and monetary policy to achieve targeted GDP in the future by boosting of AI powered manufacturing, Healthcare, Agriculture, Telecom, E-Commerce and other allied industries of GDP constituents, The main conclusions of this study highlight significantly boost in productivity, expand employment possibilities, and drive GDP in rapidly to occupy first place in all the macro parameters in the future to come

Keywords: *GDP; GDP Growth Rate; GDP Per capita; Inflation; Mean; Standard Deviation; Regression*

1. Introduction

The year 2047 holds special significance for India as it marks the centenary of its independence and aligns with the national vision of Viksit Bharat 2047, which aims to transform India into a developed and self-reliant economy. At the same time, China is experiencing structural changes marked by an ageing population, declining fertility rates, rising debt levels, and a gradual slowdown in economic growth. These contrasting trajectories have prompted scholars, economists, and policymakers to reassess the long-term balance of economic and strategic power between the two Asian giants.

Comparative studies on India and China highlight fundamental differences in their growth models. China's development has largely been driven by manufacturing-led industrialisation and strong state intervention, while India's growth has been more service-oriented and consumption-driven. Although China continues to maintain a significant lead over India in terms of total GDP, per capita income, manufacturing output, and global trade, India's

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demographic advantage, expanding domestic market, and rapid digitalisation have generated optimism regarding its long-term growth potential.

In this context, the present study seeks to examine whether India is likely to surpass China by 2047 through a comprehensive review of existing demographic, economic, and structural literature. By synthesising insights from academic research and policy reports, the study aims to provide a balanced and evidence-based assessment of India's long-term prospects relative to China. This analysis is expected to contribute to the broader discourse on comparative development, economic convergence, and the future of global economic leadership.

- **What is GDP and Its Growth rate**

Gross domestic product is the ultimate value of the goods and services produced within the geographic limits of a country in a year. GDP growth rate is an indicator of the economic performance of a country and is a product of $P1-P0/P0*100$.

$P1$ = Current Value of GDP

$P0$ = Previous Value of GDP

A. Inflation (CPI)

Inflation is measured in terms of consumer price index

2. Review Of Literature

The question of whether Bharat (India) can surpass China by 2047 has attracted increasing attention in academic, policy, and economic literature, particularly in the context of India's long-term development vision and China's structural slowdown. Existing studies broadly examine this issue through demographic trends, economic growth trajectories, and structural–institutional factors.

- **Demographic Perspectives**

A substantial body of literature highlights demographic change as a major differentiating factor between India and China. United Nations population projections indicate that India has already surpassed China in population size and is expected to widen this lead by 2047. Scholars argue that China's ageing population and shrinking workforce may constrain its long-term growth, while India's younger population offers the potential for a demographic dividend (United Nations, 2022). However, empirical studies caution that population size alone does not ensure economic dominance; the realization of demographic benefits depends on education, skill development, and female labour force participation (Population Research and Policy Review, 2023).

- **Economic Growth and GDP Comparisons**

Comparative economic literature consistently shows that China has maintained a substantial lead over India in terms of total GDP, per capita income, manufacturing output, and export capacity. Studies attribute China's rapid rise to its investment-led, export-oriented growth model and sustained productivity gains since the 1980s. In contrast, India's growth has been more service-led and consumption-driven, resulting in relatively slower industrialization (IMF, 2023). While India has emerged as one of the fastest-growing major economies in recent years, most long-term forecasts do not conclusively project India overtaking China in nominal GDP by 2047, though convergence is expected (World Bank, 2024).

- **Structural and Institutional Factors**

The literature emphasizes structural differences as a critical determinant of long-term outcomes. China's strong manufacturing base, infrastructure investment, and integration into global value chains continue to provide it with a competitive advantage. Studies note that India faces persistent challenges related to labour market rigidity, low productivity in manufacturing, and uneven human capital development (Brookings Institution, 2023). At the same time, India's strengths in services, digitalization, and democratic institutions are viewed as potential drivers of future growth if supported by sustained reforms.

- **Policy and Developmental Outlook**

Policy-oriented research suggests that India's aspiration to become a developed economy by 2047 is achievable but conditional. The World Bank (2024) argues that sustained high growth would require major reforms in education, health, infrastructure, and labour participation. Several scholars caution against deterministic claims that India will surpass China, noting that such outcomes depend on global economic conditions, technological change, and domestic policy effectiveness.

- **Synthesis**

Overall, the literature does not provide a consensus that India will definitively surpass China by 2047 across all dimensions. There is broad agreement that India will surpass China demographically and narrow the economic gap, but overtaking China in total economic size, per capita income, and global influence remains uncertain and highly conditional. The prevailing academic view treats India's rise as probable but not inevitable, shaped by long-term structural reforms and productivity growth rather than population size alone.

3. Need and Importance of The Study

It is necessary to study the trends of GDP of India and China as they are the most important emerging economies in the world. It is pressing need to know the present status of GDP and Inflation along with GDP projections up to 2047 in the light of Vikasit Bharath and strong and dynamic fiscal and monetary policy will help to India to surpass China by 2047

4. Objectives of The Study

The objectives of the study are in the light of will Bharat surpass China in respect of GDP, Growth rate, Per capita and moderate Inflation

- To analyse the GDP of India and China in US billion and trillion dollars
- To study the GDP growth of India and China
- To examine the GDP per capita in US dollars of India and China

5. Hypotheses

It is proposed to test the following hypotheses in the study:

H01: There is no significant difference is found in the GDP values of India and China

H02: There is no significant difference in the GDP growth rates of India and China

H03: There is no significant difference in the GDP per capita of India and China.

H04: There is no significant difference in the average inflation rate between the India and China.

6. Research Methodology

• Data source

The required secondary data has been obtained from the World Bank website. The analysis is made with the help of such descriptive statistics as mean, standard deviation, skewness, etc.

7. Methodology

Mean/Average The central tendency is the average value of the series. This is the most commonly stated feature of a series. The formula to compute the mean is given in equation

$$\bar{X} = \frac{\sum X}{N}$$

A. Correlation:

$$r = \frac{\sum(x-\bar{X})(y-\bar{Y})}{\sqrt{\sum(x-\bar{X})^2} \sqrt{\sum(y-\bar{Y})^2}}$$

B. Regression- Least Square Method

$$Y = mx + b$$

Where, \bar{X} = mean of X variable
 \bar{Y} = mean of Y variable

$$m = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2} \quad b = \frac{\sum y - m(\sum x)}{n}$$

C. Standard Deviation

$$s = \sqrt{\frac{\sum(X - \bar{X})^2}{n - 1}}$$

7.1 Limitations

- The analyses are based on secondary data; any limitations pertaining to them would significantly affect the accuracy of the results.
- Projection of GDP using Regression analysis is subject to changes in the economic, political, fiscal, and monetary policies of that country

7.2 Period And Scope of The Study

The study covers a time frame of 2000–2024, taking around 25 years. The study is restricted to India and China

8. Data Analysis

It analyses the GDP of India and China, in US billion and trillion dollars, this section discusses the detailed GDP values in current market prices in US dollars, GDP per capita in US dollars, GDP growth rates, and inflation rates in a detailed manner. These macro-economic indicators are described using descriptive statistics like mean, standard deviation and regression

Table-I GDP of India and China in Trillion Dollar at current prices

	INDIA	CHINA
YEAR	GDP IN US \$	GDP IN US \$
2000	0.47	1.21
2001	0.49	1.34
2002	0.52	1.47
2003	0.61	1.66
2004	0.71	1.96
2005	0.82	2.29
2006	0.94	2.75
2007	1.22	3.55
2008	1.2	4.59
2009	1.34	5.1
2010	1.68	6.09
2011	1.82	7.55
2012	1.83	8.53
2013	1.86	9.57
2014	2.04	10.48
2015	2.1	11.06
2016	2.29	11.23
2017	2.65	12.31
2018	2.7	13.89
2019	2.84	14.56

2020	2.67	15
2021	3.17	18.2
2022	3.35	18.32
2023	3.64	18.27
2024	3.91	18.74
Average GDP	1.87	8.79
Max GDP	3.91	18.74
Min GDP	0.47	1.21
Median	1.83	8.53
Skewness	0.18	0.39
Standard Dev	1.02	6.01
Linear Estimation		
2030	4.4	23.6
2040	5.8	32.4
2047	7	42

Source: World Bank Published Data and compiled using MS Excel

Above table-I represents the GDP values in terms of US Trillion dollars, China reported in steady growth in GDP very beginning it is 1.21 Trillion dollar in the year 2000-01 gradually increasing GDP over 25 years it is reached at around 18.74 Trillion Dollar whereas India 0.47 trillion dollar at the beginning 2000 year and Indian economy is entered into 1.2 trillion dollar GDP in the year 2007, India GDP is attained 3.91 Trillion Dollar at 2024, during study period Average GDP in US trillions over 25 years is reported in the above table high to low is China 8.79 The maximum GDP posted during the study period India (2023) 3.91 US trillion dollars, China 18.74(2024), as per the linear estimation of up to 2047 India become 7 trillion economy whereas China 42 trillion economy, it shows India need growth of 6 times more than China

Table-II GDP Growth rates of India and China - Annual percentage Growth rat

	INDIA	CHINA
YEAR	GDP GROWTH RATE	GDP GROWTH RATE
2000	3.8	8.5
2001	4.8	8.3

2002	3.8	9.1
2003	7.9	10
2004	7.9	10.1
2005	7.9	11.4
2006	8.1	12.7
2007	7.7	14.2
2008	3.1	9.7
2009	7.9	9.4
2010	8.5	10.6
2011	5.2	9.6
2012	5.5	7.9
2013	6.4	7.8
2014	7.4	7.4
2015	8	7
2016	8.3	6.8
2017	6.8	6.9
2018	6.5	6.7
2019	3.9	6
2020	-5.8	2.2
2021	9.7	8.4
2022	7.6	3
2023	9.2	5.4
2024	6.5	5
Average GDP GROWTH RATE	6.26	8.16
Max GDP GROWTH RATE	9.70	14.20
Min GDP GROWTH RATE	-5.80	2.20

Median	7.40	8.30
Skewness	-2.63	-0.08
Standard Dev	3.03	2.68

Source: World Bank Published data and compiled using MS Excel

From the above table II reported that a series of GDP growth rates of China and India over a span of 24 years from 2000 to 2024 the average growth rates of China and India are reported as India 6.26 and China 8.16. It is not a good sign that India had reported the lowest average growth rate of 9.7 compared to the China that of 14.20, India occupies 2nd place, where as in the year 2023 and 2024 showing higher growth rate compare to the same period with China, this is the way to achieve the strongest economy in the future to come. During the study period of 25 years minimum growth rate with respect to India -5.8 and China is 2.20 positive

Table-III GDP per Capital at Current US Dollar of India and CHINA

	INDIA	CHINA
YEAR	GDP PER CAPITA IN US \$	GDP PER CAPITA IN US \$
2000	442	959
2001	450	1053
2002	469	1148
2003	544	1288
2004	624	1508
2005	710	1753
2006	802	2099
2007	1022	2694
2008	993	3468
2009	1097	3832
2010	1350	4550
2011	1449	5614
2012	1431	6300
2013	1438	7020

2014	1560	7636
2015	1590	8016
2016	1714	8094
2017	1958	8817
2018	1974	9905
2019	2050	10143
2020	1913	10408
2021	2238	12617
2022	2388	12720
2023	2530	12951
2024	2697	13303
Average PER CAPITA	1417	6316
Max PER CAPITA	2697	13303
Min PER CAPITA	442	959
Median	1431	5614
Skewness	0	0
Standard Dev	675	4164

Table-IV GDP Per Capita Estimation of India and China

Estimation using linear regression	INDIA	CHINA
YEAR	GDP PER CAPITA IN US \$	GDP PER CAPITA IN US \$
2030	3086	16599
2040	4049	22312
2047	4735	27268

Source: World Bank published data in the website and compiled using MS Excel

From the above Table-III is depicted GDP per capita in US Dollar. During the period from 2000 to 2024 it is observed that the highest average per capita reported by China over 25 years term is 6316 US Dollar and followed by India 1417 US Dollar. Max per capita is reported by China in terms of US Dollars 13303(2024), India 2697 (2024). Min per capita is reported by China in terms of US Dollars 959 (2000), followed by India 442 (2000). GDP per capita is estimated using regression least square method is reported in the above table IV as follows India 4735 up to 2047 in US Dollar China is to be reported as 27268, it is very difficult to surpass India over China with the same growth rate continue in the future, it is need to multiply the growth rate every year by year

Table-V- CPI Inflation

	INDIA	CHINA
YEAR	CPI INFLATION	CPI INFLATION
2000	4	0.3
2001	4	1
2002	4.3	-1
2003	4	1.1
2004	4	4
2005	4.2	2
2006	6	2
2007	6.4	5
2008	8.3	6
2009	11	-1
2010	12	3.2
2011	9	6
2012	10	3
2013	10	3
2014	7	2
2015	5	1.4
2016	5	2
2017	3.3	2
2018	4	2.1

2019	4	3
2020	7	2.4
2021	5.1	1
2022	6.6	2
2023	5.6	0.2
2024	5	0.2
Average CPI INFLATION	6.19	2.12
MaxCPI INFLATION	12.00	6.00
Min CPI INFLATION	3.30	-1.00
Median	5.10	2.00
Skewness	0.99	0.50
Standard Dev	2.45	1.79

Source: World Bank published data in the website and compiled using MS Excel

During the study period, over 25 years since 2000 to 2024 India and China reported inflation rates in Table V above are taken from World Bank published data. Inflation always triggers the GDP of a country; as inflation grows, the growth rate obviously tends to fall as a result of tightening monetary policy to control inflation. It is a natural phenomenon between GDP and inflation, even though in certain circumstances maybe they are positively related. The above table shows average inflation over the 25 years of span the India and China reported: India stood at 6.19 and China at 2.12. The highest inflation rate has been reported by India during study period is 12 percent in the year 2010, and the China is 6 percent during 2008 and 2011. The lowest inflation rate during the study period is reported by India at 3.30 in 2017, and the China -1 during the 2009. Standard deviation in inflation rates are shown in the above table V, as higher the standard deviation is higher the risk of variance associated with inflation rates, and lower the standard deviation is lower the risk of variance associated with inflation rates. Standard deviation of India is reported 2.45 is higher than China it is 1.79 reported

9. Findings

H01: It is found that the null hypothesis 01 is rejected as there is a significant difference is found in the GDP values during the study period of 25 years between India and China. It might depend on the fiscal and monetary policy of that country as well as the GDP contributors of household consumption, private investment, government expenditure, and net exports of that country, which may vary, resulting in a huge difference in respect of all the

H02: Rejected the null hypothesis: in respect of growth rates, there is a significant difference in the average growth rates of India and China due to economic and political policies as well as the economic cycles of those, which may lead to a difference in the growth rates of GDP over the China and India

H03: The null hypothesis is rejected with respect to India and China as there is a significant difference is found between the India and China with respect to per capita GDP in the US dollar.

H04: The null hypothesis is rejected, as there is a significant difference is found between India and China in respect of average inflation rate

10. Conclusion

As GDP increases, it is perceived to be good for the economy, and as it decreases, it is bad to the economy, GDP value is also depending on the fiscal and monetary policies of a country. It is concluded that the GDP value (2023) in US dollar at current prices, India reported lower when compare to China, China occupied first place in all the macro parameters, whereas average GDP value over 25 years in US dollar at current prices, India stood at again second position when compare to China. It is concluded that the GDP per capita of India stood at second position when compare to China, whereas average per capita of India also stood at second in position, the reason behind this is population, it is hardly need to control population in order to enhance per capita.

It is concluded that GDP growth of India (2024) stood at 1st place when compare to China, average GDP growth rate over 25 years India stood at 2nd in place followed by China, the speed of growth rate is very high with respect to India in recent past when compare to China. It is concluded that, inflation (2024) of India is stood at second position from low to high when compare to China, whereas average inflation rate around 25 years from low to high India stood at again second place compare to China, The IMF estimated the global average inflation rate for the year 2025 to be 4.3 per cent. It is mandatory to maintain a balance between GDP and inflation, and fueling to various sectors by initiating strong fiscal and monetary policy enabled with artificial intelligence a head to achieve targeted GDP volume in the future to take India first while compare to China India is far better in the growth rate reported during recent past when compare to the IMF estimated GDP growth rate of 3 per cent 2025, India stood at 10 trillion US dollars to be attained in 2030. It is possible only when implementing artificial intelligence rapidly wherever necessary to increase the share of GDP contributors like C+I+G+ Net Exports, as well as the standard fiscal and monetary policy of the government, are led to achieve the estimated target of 10 trillion US dollars in the economy. It is necessary to achieve a higher real growth rate every year by year; it's only the way to achieve the IMF and other agencies expected growth, fiscal policy measures to support vulnerable groups, especially it is need to improve exports rather than imports, the industries which are boosting exports like textile, spice, petroleum products, tea, jewelry, dairy products, emerging industries like pharmaceutical, automobile, renewable energy, In tackling front-loaded monetary policy tightening to address elevated inflation also a big challenge in front to take India a largest economy in the world. From an economic perspective, China continues to maintain a substantial lead over India in total GDP, per capita income, industrial output, and export capacity. Although India has emerged as one of the fastest-growing major economies and is projected to become a leading global economy by 2047, most academic and institutional forecasts do not conclusively predict that India will surpass China in overall economic size by that year. Instead, the literature points toward a gradual narrowing of the gap, with overtaking remaining a conditional and long-term possibility rather than a certainty

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