

**Indian Institute of Information Technology, Lucknow**

**Analysis Report**

**India** **vs China**

**Name: Amartya Jana**

**Enrollment Number: MSE23007**

**Assigned By Prof. Dheeraj Mishra**

**Analysis of Macroeconomic Factors: India vs. China (2012–2023)**

Below is a detailed comparison and analysis of key macroeconomic factors between India and China over the years.

**1. Revenue, Excluding Grants (% of GDP)**

* **India**: Varied between 11.6% (2014) and 13.2% (2018), with missing data for recent years (2019–2023).
* **China**: Declined slightly from 11.1% (2012) to 8.4% (2022), showcasing a gradual reduction in revenue as a share of GDP.
* **Observation**: China’s revenue has shown a steady decline, while India’s data is missing in later years, making recent comparisons difficult.

**2. Gross Capital Formation (% of GDP)**

* **India**: Consistently ranged from 28.9% to 38.3%, showing a declining trend but stabilizing around 30–33% in recent years.

* **China**: Significantly higher than India, ranging from 42.6% to 46.4%, demonstrating a strong focus on investment in physical assets.

* **Observation**: China leads in capital formation, indicating a more investment-driven economy.

**3. Exports of Goods and Services (% of GDP)**

* **India**: Declined from 24.5% (2012) to 18.7% (2019–2020) but rebounded to 23.2% in 2022.

* **China**: Fluctuated slightly, starting at 25.5% (2012) and ending at 19.7% (2023), with a focus on global trade.

* **Observation**: Both countries rely on exports, but India shows more volatility compared to China's gradual changes.

**4. Imports of Goods and Services (% of GDP)**

* **India**: Peaked at 31.3% (2012), gradually declining to 19.1% (2020), and rebounding to 26.8% in 2022.

* **China**: Declined from 22.8% (2012) to 17.6% (2023), showing controlled import dependency.

* **Observation**: India’s import trends are more variable, while China maintains stability.

**5. Total Debt Service (% of GNI)**

* **India**: Peaked at 4.6% (2014), declining to 1.6% (2021), reflecting better debt management.
* **China**: Ranged narrowly from 0.8% to 2.4%, showcasing strong financial control.
* **Observation**: China consistently manages debt service better than India.

**6. Population Growth (Annual %)**

* **India**: Declined from 1.3% (2012) to 0.7% (2022), indicating slowing population growth.
* **China**: Declined significantly from 0.7% (2012) to -0.1% (2023), signaling a population decline.
* **Observation**: Both countries are experiencing slower growth, with China facing a demographic contraction.

**7. Income Share Held by Lowest 20%**

* **India**: Available from 2015, with values around 8%, suggesting income inequality.
* **China**: Lower at 5.3%–7.4%, reflecting more pronounced inequality.
* **Observation**: India has a slightly better income share distribution for the lowest quintile.

**8. School Enrollment (Gender Parity Index)**

* **India**: Consistently around 1.0, indicating gender parity in school enrollment.
* **China**: Also steady at 1.0, reflecting similar parity levels.
* **Observation**: Both countries have achieved gender parity in school enrollment.

**9. Military Expenditure (% of GDP)**

* **India**: Stable around 2.5%, with slight variations.
* **China**: Lower and steady at around 1.6%–1.8%.
* **Observation**: India allocates a higher share of GDP to military expenditure than China.

**10. Agriculture, Forestry, and Fishing (% of GDP)**

* **India**: Higher than China, ranging from 16% to 18.7%.
* **China**: Significantly lower at 7%–9%, reflecting an industrial focus.
* **Observation**: India relies more on agriculture, whereas China has moved towards industrialization.

**11. Industry (Including Construction) (% of GDP)**

* **India**: Ranges from 25% to 29%, showing slight decline.
* **China**: Much higher at 37%–45%, emphasizing industrial dominance.
* **Observation**: China outpaces India in industrial contributions to GDP.

**Comparative Analysis: GDP Growth and Inflation Predictions for India and China (2012–2023)**

Below is a concise analysis of the trends and predictions for GDP growth and inflation for India and China, along with future implications.

**1. GDP Growth Analysis**

* **India**:
  + - Historical trends show GDP growth fluctuating significantly, with a sharp decline in 2020 (-5.8%) due to the pandemic, but a recovery to 9.7% in 2021.
    - Using the regression model:  
      Y\_Prediction =5.94−0.066t, where t=Year−2017. Predicted growth for 2024 is 5.51%, indicating stabilization but below the historical peak.
* **China**:
  + - GDP growth has generally been more stable, declining steadily from 7.9% in 2012 to 2.2% in 2020, with a slight recovery thereafter.
    - Using the regression model:  
      Y\_Prediction =6.28−0.162t.
    - Predicted growth for 2024 is 5.39%, showing a slower growth trajectory compared to earlier decades.

**Key Observation**: Both countries exhibit declining growth rates, with India recovering more sharply post-2020 but stabilizing at a lower predicted rate than its pre-pandemic average. China's long-term growth deceleration reflects structural transitions in its economy.

**2. Inflation (GDP Deflator) Analysis**

* **India**:
  + - Historical inflation has fluctuated widely, peaking at 7.9% in 2012 and reaching 1.4% in 2023.
    - Using the regression model:  
       Y\_Prediction =4.54−0.037t.
    - Predicted inflation for 2024 is 4.30%, indicating moderate levels compared to historical highs.
* **China**:
  + - Inflation has remained relatively low and stable, averaging around 2%–4%, with a negative value of -0.5% in 2023.
    - Using the regression model:  
      Y\_Prediction =1.86−0.013t.
    - Predicted inflation for 2024 is 1.78%, maintaining its low-inflation trajectory.

**Key Observation**: India’s inflation is relatively higher and more volatile than China’s, reflecting differences in monetary policies and economic structures. China's inflation control aligns with its focus on economic stability.

**3. Future Implications**

1. **Economic Growth**:
   * Both countries are predicted to see moderate GDP growth in 2024, with China slightly trailing India. This suggests a convergence in growth rates due to India's expanding base and China's slowing momentum.
   * India needs to focus on sustaining growth through reforms in infrastructure, innovation, and manufacturing to avoid stagnation.
   * China must navigate challenges from demographic decline and reduced investment returns, shifting towards consumption-led growth.
2. **Inflation Management**:
   * India’s inflation forecasts suggest continued vigilance in monetary policy to avoid overheating the economy.
   * China’s stable inflation supports its position for sustainable economic transitions but may also reflect weaker domestic demand.