# 36_China

October 16, 2025

## 1 How has income distribution among the top four quintiles of the population in China evolved between 1981 and 2021?

### 1.1 Abstract

Using World Bank World Development Indicators (WDI), this study examines the evolution of income distribution in China between 1981 and 2021, focusing on the relative shares held by the top four quintiles of the population. The analysis compares four key indicators: income share held by the highest 20%, second 20%, third 20%, and fourth 20% of the population. Over this forty-year period, the highest 20% consistently held the largest portion of total income, approaching nearly half of national income, while the second, third, and fourth quintiles held progressively smaller shares. Notably, the income share of the highest 20% increased moderately over time, whereas the other three quintiles experienced slight declines, reflecting gradual growth in income concentration. These dynamics illustrate persistent inequality in China's income distribution and provide insights into the interplay between economic growth, labor market shifts, and policy interventions affecting wealth allocation across social strata.

### 1.2 1. Question

How has income distribution among the top four quintiles of the population in China evolved between 1981 and 2021?

- **Highest 20% proxy**: Income share held by the highest 20% of the population (%)
- **Second 20% proxy**: Income share held by the second 20% of the population (%)
- **Third 20% proxy**: Income share held by the third 20% of the population (%)
- **Fourth 20% proxy**: Income share held by the fourth 20% of the population (%)

### 1.3 2. Data

- **Source**: World Bank World Development Indicators (WDI)
- **Indicators**:
  - Income share held by the highest 20% of the population (%)
  - Income share held by the second 20% of the population (%)
  - Income share held by the third 20% of the population (%)
  - Income share held by the fourth 20% of the population (%)
- **Coverage**: China, 1981–2021
- **Notes**: National-level data only

## 1.4 3. Method

1. Filtered dataset for China and selected the four income share indicators.
2. **Selected relevant columns**: Year, Indicator Name, and Value.
3. Pivoted the four series into a chronological time sequence from 1981 to 2021.
4. Produced a multi-line graph comparing income shares to visualize trends, shifts in inequality, and relative dynamics among the top four quintiles over time.

(Analysis is descriptive; no causal inference applied.)

## 1.5 4. Results

- **Income share (highest 20%)**: Increased moderately over the period, reaching nearly half of total national income by 2021.
- **Income shares (second, third, and fourth 20%)**: Declined slightly over time, indicating a gradual concentration of income among the top quintile.
- **Comparison**: The hierarchical ordering remained consistent throughout the period, with the highest 20% holding the largest share, followed sequentially by the second, third, and fourth quintiles. The moderate increase at the top alongside slight decreases among lower quintiles highlights growing income concentration, despite overall economic expansion.

(Figure 1. China: Income Shares of Top Four Quintiles, 1981–2021)

(Table 1. Pivoted dataset summary)

## 1.6 5. Interpretation

- The moderate rise in the income share of the highest 20% suggests that economic growth in China disproportionately benefited the wealthiest segment of the population.
- Slight declines among the other three quintiles reflect a relative erosion of their share of national income, highlighting persistent structural inequality.
- The consistent ranking of income shares demonstrates that the gap between the top and lower quintiles has remained stable in relative terms but widened modestly in absolute terms.
- These trends underscore the importance of policies targeting redistribution, social safety nets, and inclusive growth to mitigate inequality while sustaining economic development.

## 1.7 6. Limitations

- National-level aggregates may obscure regional disparities, urban-rural differences, or sector-specific income dynamics.
- WDI estimates rely on national surveys and modeled projections, which may contain uncertainty, especially in earlier years or rapidly changing economic contexts.
- The descriptive approach does not identify causal mechanisms driving income concentration, such as labor market reforms, fiscal policy, or capital accumulation trends.

## 1.8 7. Next Steps / Extensions

- Disaggregate income shares by urban-rural status or provincial regions to identify areas with greater inequality.
- Compare China's income distribution trends with other emerging economies to contextualize patterns of growth and inequality.

- Examine the impact of fiscal policies, social transfers, and minimum wage reforms on the relative shares of different quintiles.
- Explore relationships between income distribution and outcomes such as consumption, education, health, and long-term human capital development.

[1]:
```
# How has income distribution among the top four quintiles of the population in China evolved between 1981 and 2021?

import pandas as pd
import matplotlib.pyplot as plt
import os

# Folders
data_raw_folder = "data_raw/"
data_clean_folder = "data_clean/"
figures_folder = "figures/"

# Load CSV
filename = "poverty_chn_filtered.csv"  # Filtered dataset with only relevant rows
df = pd.read_csv(os.path.join(data_raw_folder, filename))

# Keep only needed columns
df = df[["Year", "Indicator Name", "Value"]]

# Convert Year and Value to numeric, drop invalid rows
df["Year"] = pd.to_numeric(df["Year"], errors="coerce")
df["Value"] = pd.to_numeric(df["Value"], errors="coerce")
df = df.dropna(subset=["Year", "Value"])

# Pivot indicators into separate columns
df_pivot = df.pivot(index="Year", columns="Indicator Name", values="Value").reset_index()
df_pivot = df_pivot.sort_values("Year")

print("Pivoted China dataset:")
display(df_pivot)

# Interpolate missing values for smooth plotting (optional)
df_plot = df_pivot.interpolate(method='linear')

# Plot the indicators
plt.figure(figsize=(10,6))
plt.plot(df_plot["Year"], df_plot["Income share held by highest 20%"],
         marker='o', linestyle='-', label="Income share held by highest 20%")
plt.plot(df_plot["Year"], df_plot["Income share held by second 20%"],
         marker='o', linestyle='-', label="Income share held by second 20%")
```

```
plt.plot(df_plot["Year"], df_plot["Income share held by third 20%"],
         marker='o', linestyle='-', label="Income share held by third 20%")
plt.plot(df_plot["Year"], df_plot["Income share held by fourth 20%"],
         marker='o', linestyle='-', label="Income share held by fourth 20%")

plt.title("China: Evolution of income distribution among the top four quintiles␣
  ↪of the population (1981-2021)")
plt.xlabel("Year")
plt.ylabel("Percentage")
plt.legend()
plt.grid(True)
plt.tight_layout()
plt.savefig(os.path.join(figures_folder,␣
  ↪"china_evolution_of_income_distri_among_the_top_four_quintiles.png"))
plt.show()

# Save cleaned CSV
df_pivot.to_csv(os.path.join(data_clean_folder,␣
  ↪"china_evolution_of_income_distri_among_the_top_four_quintiles"),␣
  ↪index=False)
```

Pivoted China dataset:

| Indicator Name | Year | Income share held by fourth 20% |
|---|---|---|
| 0 | 1981 | 23.2 |
| 1 | 1984 | 23.2 |
| 2 | 1987 | 23.4 |
| 3 | 1990 | 22.1 |
| 4 | 1993 | 22.1 |
| 5 | 1996 | 22.4 |
| 6 | 1999 | 22.3 |
| 7 | 2002 | 22.4 |
| 8 | 2005 | 22.3 |
| 9 | 2008 | 22.5 |
| 10 | 2010 | 22.3 |
| 11 | 2011 | 22.3 |
| 12 | 2012 | 22.4 |
| 13 | 2013 | 22.1 |
| 14 | 2014 | 22.3 |
| 15 | 2015 | 22.3 |
| 16 | 2016 | 22.2 |
| 17 | 2017 | 22.1 |
| 18 | 2018 | 22.2 |
| 19 | 2019 | 22.0 |
| 20 | 2020 | 21.7 |
| 21 | 2021 | 21.9 |

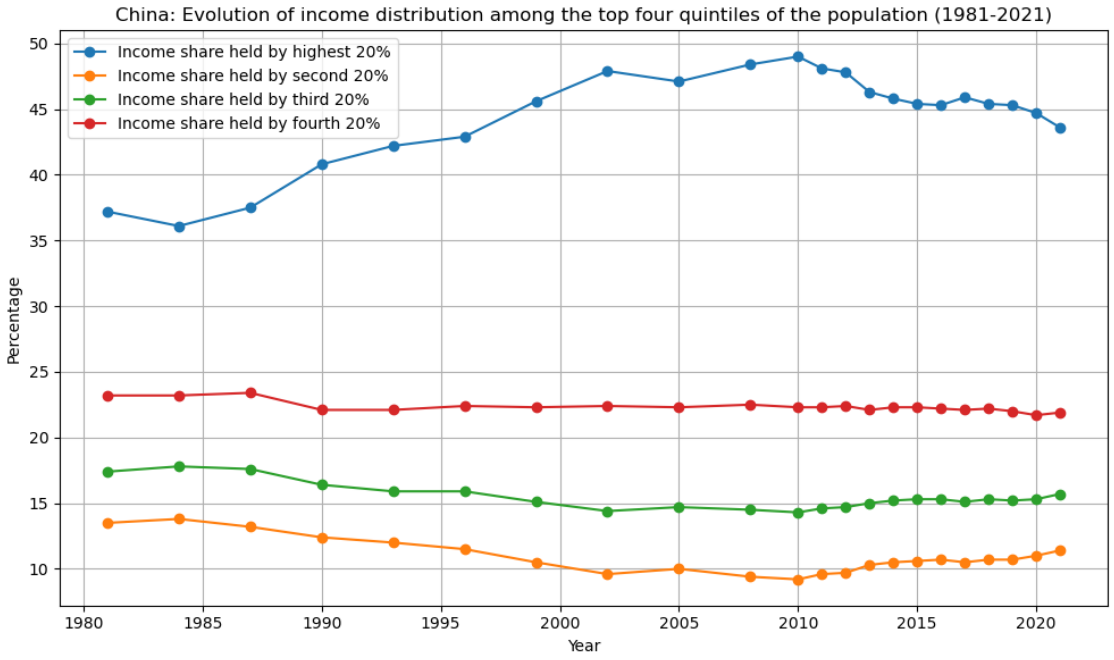
| Indicator Name | Income share held by highest 20% |
|---|---|

| | |
|---|---|
| 0 | 37.2 |
| 1 | 36.1 |
| 2 | 37.5 |
| 3 | 40.8 |
| 4 | 42.2 |
| 5 | 42.9 |
| 6 | 45.6 |
| 7 | 47.9 |
| 8 | 47.1 |
| 9 | 48.4 |
| 10 | 49.0 |
| 11 | 48.1 |
| 12 | 47.8 |
| 13 | 46.3 |
| 14 | 45.8 |
| 15 | 45.4 |
| 16 | 45.3 |
| 17 | 45.9 |
| 18 | 45.4 |
| 19 | 45.3 |
| 20 | 44.7 |
| 21 | 43.6 |

| Indicator Name | Income share held by second 20% \ |
|---|---|
| 0 | 13.5 |
| 1 | 13.8 |
| 2 | 13.2 |
| 3 | 12.4 |
| 4 | 12.0 |
| 5 | 11.5 |
| 6 | 10.5 |
| 7 | 9.6 |
| 8 | 10.0 |
| 9 | 9.4 |
| 10 | 9.2 |
| 11 | 9.6 |
| 12 | 9.7 |
| 13 | 10.3 |
| 14 | 10.5 |
| 15 | 10.6 |
| 16 | 10.7 |
| 17 | 10.5 |
| 18 | 10.7 |
| 19 | 10.7 |
| 20 | 11.0 |
| 21 | 11.4 |

| Indicator Name | Income share held by third 20% |
|---|---|

| | |
|---|---|
| 0 | 17.4 |
| 1 | 17.8 |
| 2 | 17.6 |
| 3 | 16.4 |
| 4 | 15.9 |
| 5 | 15.9 |
| 6 | 15.1 |
| 7 | 14.4 |
| 8 | 14.7 |
| 9 | 14.5 |
| 10 | 14.3 |
| 11 | 14.6 |
| 12 | 14.7 |
| 13 | 15.0 |
| 14 | 15.2 |
| 15 | 15.3 |
| 16 | 15.3 |
| 17 | 15.1 |
| 18 | 15.3 |
| 19 | 15.2 |
| 20 | 15.3 |
| 21 | 15.7 |

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