

Global Steel Production Per Capita Analysis

Based on World Steel Association Data and Demographic Statistics, a
Preliminary Estimate

Fabio Miani, University of Udine, Italy
Using DeepSeek LLM

November 4, 2025

Abstract

This report analyzes steel production per capita across the top 50 steel-producing countries and the European Union, utilizing data from the World Steel Association and current demographic statistics. The analysis reveals significant disparities in industrial development, economic structure, and steel intensity across different regions and economic development stages.

Contents

1	Introduction	2
1.1	Background	2
1.2	Data Sources	2
2	Global Overview	2
2.1	Top 50 Steel Producing Countries	2
2.2	Key Findings	2
3	Steel Production Per Capita Analysis	3
3.1	Top 20 Countries by Steel Production Per Capita	3
3.2	Analysis by Development Category	3
3.2.1	Highly Industrialized Economies	3
3.2.2	Emerging Economies	3
4	Regional Analysis	4
4.1	European Union	4
4.2	Asia-Pacific Region	4
4.3	Americas	4
5	Methodology and Data Considerations	4
5.1	Calculation Method	4
5.2	Data Limitations	5
5.3	Statistical Notes	5

6 Conclusions and Implications	5
6.1 Key Observations	5
6.2 Economic Development Patterns	5
6.3 Future Trends	5
7 Complete Top 50 Steel Producing Countries	6

1 Introduction

1.1 Background

Steel production per capita serves as a key indicator of industrial development, infrastructure investment, and economic maturity. This metric provides insights into a country's manufacturing capacity, construction activity, and overall economic structure.

1.2 Data Sources

- **Steel Production Data:** World Steel Association (worldsteel) - 2023/2024 statistics
- **Population Data:** World Bank, United Nations - Latest available estimates
- **Methodology:** Steel production per capita = Annual crude steel production / Population

2 Global Overview

2.1 Top 50 Steel Producing Countries

The global steel industry remains concentrated, with the top 10 producers accounting for approximately 75% of world production. China dominates global output, but per capita analysis reveals different patterns of steel intensity.

2.2 Key Findings

- Significant disparities in steel production per capita across countries
- Correlation between industrialization stage and steel intensity
- Impact of export-oriented vs domestic market-focused production
- Influence of infrastructure development cycles

3 Steel Production Per Capita Analysis

3.1 Top 20 Countries by Steel Production Per Capita

Table 1: Top 20 Countries/Economies by Steel Production Per Capita (kg/person)

Rank	Country/Economy	Steel Production (Mt)	Population (M)	Per Capita (kg/p)
1	Taiwan	25.4	23.9	1,063
2	South Korea	71.4	51.7	1,381
3	Czech Republic	4.5	10.5	429
4	Austria	7.8	9.1	857
5	Germany	40.1	83.3	481
6	Japan	87.0	125.7	692
7	Finland	3.8	5.5	691
8	Belgium	7.2	11.7	615
9	Slovakia	4.8	5.4	889
10	European Union*	152.5	448.4	340
11	China	1,019.0	1,425.7	715
12	Italy	23.7	59.1	401
13	Poland	8.1	37.7	215
14	United States	80.7	331.9	243
15	Turkey	40.4	85.3	474
16	France	14.2	68.0	209
17	Spain	13.7	47.4	289
18	Canada	13.5	38.2	353
19	United Kingdom	7.2	67.3	107
20	Brazil	34.2	215.3	159

3.2 Analysis by Development Category

3.2.1 Highly Industrialized Economies

- **South Korea, Taiwan, Japan:** Export-oriented economies with high per capita steel production
- **Germany, Austria:** Advanced manufacturing bases with significant automotive and machinery sectors
- **European Union:** Moderate per capita production reflecting diverse economic structures

3.2.2 Emerging Economies

- **China:** High absolute production but moderate per capita relative to population size
- **Turkey, Brazil:** Growing domestic markets with increasing steel intensity
- **India:** Low per capita despite large absolute production (rapid growth potential)

4 Regional Analysis

4.1 European Union

Table 2: European Union Member States Steel Production Per Capita

Country	Production (Mt)	Population (M)	Per Capita (kg/p)
Germany	40.1	83.3	481
Italy	23.7	59.1	401
France	14.2	68.0	209
Spain	13.7	47.4	289
Poland	8.1	37.7	215
Austria	7.8	9.1	857
Belgium	7.2	11.7	615
Czech Republic	4.5	10.5	429
Slovakia	4.8	5.4	889
Netherlands	6.8	17.5	389

4.2 Asia-Pacific Region

- **China:** Dominant producer with evolving consumption patterns
- **Japan & South Korea:** Mature markets with high per capita production
- **India:** Rapid growth potential with low current per capita consumption
- **Taiwan:** Specialized export-oriented production

4.3 Americas

- **United States:** Moderate per capita with stable domestic demand
- **Brazil:** Largest producer in Latin America with growth potential
- **Canada & Mexico:** Integrated with North American supply chains

5 Methodology and Data Considerations

5.1 Calculation Method

Steel production per capita is calculated using the formula:

$$\text{Steel Production Per Capita} = \frac{\text{Annual Crude Steel Production (kg)}}{\text{Population}}$$

5.2 Data Limitations

- Population estimates may vary between sources
- Steel production data reflects crude steel output
- Regional aggregates (like EU) include internal trade patterns
- Temporary production disruptions may affect annual figures

5.3 Statistical Notes

- All production data based on latest available annual statistics
- Population data from most recent reliable estimates
- Conversion factors: 1 tonne = 1,000 kg
- Regional totals may not equal sum of components due to rounding

6 Conclusions and Implications

6.1 Key Observations

1. Steel production per capita varies by over 10x between top and bottom of ranking
2. Export-oriented economies show highest per capita production
3. Population size significantly impacts per capita metrics for large countries
4. Industrial structure strongly correlates with steel intensity

6.2 Economic Development Patterns

The analysis reveals distinct patterns related to:

- Industrialization stage and economic maturity
- Export competitiveness in steel-intensive industries
- Infrastructure development cycles
- Urbanization rates and construction activity

6.3 Future Trends

- Emerging economies expected to show fastest per capita growth
- Developed economies focusing on high-value, specialized production
- Environmental considerations influencing production methods
- Digitalization and Industry 4.0 transforming steel manufacturing

References

1. World Steel Association. (2024). *World Steel in Figures 2024*.
2. World Bank. (2024). *World Development Indicators*.
3. United Nations. (2024). *World Population Prospects*.
4. European Steel Association. (2024). *European Steel in Figures*.

Data compiled from publicly available sources. Analysis based on latest complete annual data.

7 Complete Top 50 Steel Producing Countries

Table 3: Complete List of Top 50 Steel Producing Countries by Per Capita

Country	Production (Mt)	Population (M)	Per Capita (kg/p)
Taiwan	25.4	23.9	1063
South Korea	71.4	51.7	1381
Czech Republic	4.5	10.5	429
Austria	7.8	9.1	857
Germany	40.1	83.3	481
Japan	87.0	125.7	692
Finland	3.8	5.5	691
Belgium	7.2	11.7	615
Slovakia	4.8	5.4	889
European Union	152.5	448.4	340
China	1019.0	1425.7	715
Italy	23.7	59.1	401
Poland	8.1	37.7	215
United States	80.7	331.9	243
Turkey	40.4	85.3	474
France	14.2	68.0	209
Spain	13.7	47.4	289
Canada	13.5	38.2	353
United Kingdom	7.2	67.3	107
Brazil	34.2	215.3	159
Iran	30.6	89.2	343
Russia	75.8	144.1	526
Mexico	18.2	128.9	141
Ukraine	6.2	43.8	142
India	125.0	1428.6	88
Vietnam	20.0	98.9	202

Table 3: Complete List (continued)

Country	Production (Mt)	Population (M)	Per Capita (kg/p)
Saudi Arabia	9.1	36.9	247
South Africa	5.8	60.4	96
Malaysia	6.5	33.6	193
Egypt	9.8	110.9	88
Argentina	5.2	45.8	114
Thailand	4.1	71.7	57
United Arab Emirates	3.5	9.4	372
Qatar	2.8	2.7	1037
Kazakhstan	4.3	19.6	219
Indonesia	15.6	277.5	56
Bangladesh	1.2	169.4	7
Pakistan	4.5	240.5	19
Algeria	3.2	45.4	70
Nigeria	0.8	223.8	4
Philippines	1.5	117.3	13
Colombia	1.3	51.5	25
Chile	1.7	19.5	87
Peru	1.4	34.1	41
Australia	5.6	26.0	215
New Zealand	0.9	5.1	176
Sweden	4.4	10.4	423
Norway	1.2	5.5	218
Denmark	0.8	5.9	136
Switzerland	1.1	8.7	126