



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2019; 5(3): 346-348
www.allresearchjournal.com
Received: 13-01-2019
Accepted: 20-02-2019

Renu Tyagi

Associate Professor,
Department of Economics,
MMH College, Ghaziabad,
Uttar Pradesh, India

Pramilla

Assistant Professor,
Department of Economics,
SGND Khalsa College,
University of Delhi, Delhi,
India

Ajay Gupta

Assistant Professor,
Department of Economics,
Shyam Lal College (EVE),
University of Delhi, Delhi,
India

Corresponding Author:

Ajay Gupta

Assistant Professor,
Department of Economics,
Shyam Lal College (EVE),
University of Delhi, Delhi,
India

Role of Indian steel industry in growth of Indian economy

Renu Tyagi, Pramilla and Ajay Gupta

Abstract

In current article, an attempt has been made for identifying the relationship between performance of Indian steel industry and Indian Economy. Metals have repeatedly proved itself as significant source behind different stages of industrialisation among various civilizations across the globe. Steel has established its position as highly significant during all such industrialisation. Now per capita consumption is being counted as one the key factor for measuring the economic growth of nation. The Steel industry in India is growing at a rapid speed with demand increment and opportunity creation and attraction to the international players. The study period is 2000-2018 and linear regression model has been used to analyse the data. The study shows that there is a statistical significant relationship between Indian steel industries in the growth of Indian economy.

Keywords: Steel industry, growth, Indian economy, GDP, production

Introduction

Steel is considered as the most extensively used metal in manufacturing industry, primarily due to its character of high corrosion resistance. Steel has found the status of most valuable raw material due to wide usage in many complex industries dealing with various reactive/non-reactive elements due to user friendly features of strength, weight and durability available at affordable cost.

India is now considered as the second largest steel producing and consumption country across globe.

Steel has played as significant role in growth of gross domestic product of India.. India's consumption of finished steel increased from 6.5 MT in 1968 to 98.71 MT in 2018, while GDP (at constant price, 2010) grew from USD 0.25 trillion in 1968 to USD 2.7 trillion 2018.

Growth of steel industry with economy

In 2018, the steel industry has direct contribution of around 2% to the GDP of the Indian economy. The indirect contribution is much higher, owing to the inter-linkages to other industrial segments.

India produced 110.92 MT of crude steel in 2018-19 (Up from 103.13 MT in 2017-18), giving direct employment to more than 2.5 million people, directly and indirectly. India is continuously strengthening its steel industry considerably since 2000. It became a net exporter in 2016-17 and had a surplus trade of 2.14 MT in 2017-18. However, the current global economic downturn, trade war, technological innovations, coupled with trade protectionism in similar areas, have adversely impacted the positive growth pattern.

China is the world's largest producer of crude steel with above 50% contribution to global crude steel production. India ranks second contribution of 5.9% of global crude steel production. Increase in global crude steel consumption is constantly being met by increase in production. In 2018, the global crude steel consumption was 1712.1 MT, as compared to 1632.5 MT in 2017. Per capita consumption of crude steel was 224.5 kg in 2018 as compared to 216.3 kg in 2017.

Steel sector is open for 100% foreign direct investment (FDI) via automatic route as per Indian government regulations. This has attracted various global steel manufacturing companies to consider India as a lucrative investment option in steel industry.

Objective

This research Study focuses on relationship between growth and development of Steel I Industry in India with GDP of the Country.

Research methodology

Data collection

This study is based upon secondary data. The relevant data is collected from different articles, journals, business associations, annual report of steel industry and world steel association.

Period of study

The referred period of study is 18 years, from 2000-2018.

Research technique

Linear Regression Model approach is used to analyse the relationship between Indian Crude Steel Production and GDP of India.

$$GDP \text{ in USD} = \beta_0 + \beta_1 (\text{Crude Steel Production}) + \mu_0$$

Where β_0 = Intercept

β_1 = Slope Co-efficient

μ_0 = Error term with mean Zero and variance constant

Hypothesis testing

The following hypothesis has been applied to study the relationship between Indian Crude Steel Production and GDP of India.

H_0 : There is no significant relationship between Indian Crude Steel Production and GDP of India.

H_1 : There is significant relationship between Indian Crude Steel Production and GDP of India.

Data analysis and interpretations

Table 1: Showing detail of crude steel production and GDP of India.

Year	Indian crude steel production MT	Indian GDP in USD billion dollars
2000	26.9	476.64
2001	27.3	493.93
2002	28.8	523.77
2003	31.8	618.37
2004	32.6	721.59
2005	38.1	834.22
2006	49.5	949.12
2007	53.1	1238.7
2008	57.8	1224.1
2009	62.8	1365.37
2010	68.3	1708.46
2011	73.5	1823.05
2012	77.3	1827.64
2013	81.2	1856.72
2014	87.3	2039.13
2015	89.4	2103.59
2016	95.5	2294.12
2017	101.4	2651.47
2018	106.5	2701.11

Source: World Steel Association, www.Statistica.com

Table 2

Regression statistics	
Multiple R	0.994
R Square	0.988
Adjusted R Square	0.987
Standard Error	82.892
Observations	19

Table 3

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	95,66,773.143	95,66,773.143	1,392.308	0.000
Residual	17	1,16,809.723	6,871.160		
Total	18	96,83,582.866			

Table 4

	Coefficients	Standard error	t-Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-256.002	49.389	-5.183	0.000	-360.204	-151.801	-360.204	-151.801
Indian crude steel production MT	27.176	0.728	37.314	0.000	25.640	28.713	25.640	28.713

In this study, Indian Crude steel production MT is taken as exogenous variable and Indian GDP in USD Billion Dollars is taken as indigenous variable. We look forward to the contribution of Indian crude steel production in growth of Indian economy. We can represent it in linear regression model.

$$GDP \text{ in USD} = \beta_0 + \beta_1 (\text{Crude Steel Production}) + \mu_0$$

Where β_0 = Intercept

β_1 = Slope Co-efficient

μ_0 = Error term with mean Zero and variance constant

$$GDP \text{ in USD} = 256.002 + 27.176 * (\text{Crude Steel Production}).$$

It can be concluded that if there is 1% change in Crude Steel Production, then there will be 27.18% change in GDP.

$\beta_0 = 256.002$ shows the estimated value of GDP when crude steel production is zero.

It is clear that multiple R = 0.994 which shows that Indian Crude steel production and GDP of India is highly co-related.

R Square = 0.988 shows that most of the observed variations in India's GDP can be explained by Indian Crude Steel Production.

Larger R Square produces bigger values of F-ratios that shows that stronger the relationship between Indian GDP and Indian Crude Steel Production. The bigger the F value, F statistics in ANOVA table also determines the overall significance of Regression model.

F = 1392.308, $P < 0.05$ level and regression model is good fit of data. From the above study, we reject H_0 and conclude that Indian Crude steel production is statistically significantly predict the Indian GDP.

Challenges

The growth path of the steel industry has facing many challenges. The Indian steel industry is often regarded as uncompetitive compared to global standards.

The return on investments decline significantly, particularly during recession as steel is intermediate product for various price sensitive industries which resort alternative materials if steel prices increases above tolerance level, leading to decrease in demand. Steel demand witnessed significant increase after 2004, leading to increase in existing capacities in steel industry. Such capacity increase resulted in overcapacity in 2015 leading to lower returns for next 3 years and some companies faced bankruptcy. Today, financial institutions have become reluctant of extending finance to this sector.

Steel industry being highly capital intensive and relative long gestation period primarily due to regulatory approvals, high interest cost still remains a major challenge for competitiveness of the industry. Indian govt. has tried to reduce this factor by taking various measures including several reduction in repo rate by Reserve Bank of India so that Indian steel industry can compete at global level.

Conclusion

The Indian steel Industry has around 2% contribution to GDP of India and it has shown significant growth in last decade. The steady growth of steel production indicates that India is on path of higher growth in coming decade.

The liberalisation and other measures taken by the Government has given a clear roadmap for private sector in steel industry, especially for foreign companies. The resulted in modernising/expansion for existing units as well as setting up of new manufacturing facilities for foreign companies along with latest global technologies.

References

1. <https://www.statista.com/statistics/268750/global-gross-domestic-product-gdp/>
2. <https://www.statista.com/statistics/263771/gross-domestic-product-gdp-in-india/>
3. World Steel Association, <https://worldsteel.org>
4. <https://steel.gov.in/>
5. <https://pib.gov.in>
6. <http://jpcindiansteel.nic.in>
7. <https://www.ibef.org>
8. Dr. Brindha K, Ms. Suseelamani K. Financial performance of Selected Companies of Iron and Steel industry in India, International Journal of Management, Technology And Engineering. 2018;8(11):2249-7455. ISSN NO: 2249-7455.
9. Burange LG. The performance of Indian Iron and Steel Industry and Competitiveness of the Firms, 2008. <https://www.researchgate.net/publication/280727004>
10. Dr. Shrabanti Pal. A study on performance and prospective of Indian Steel Industry from national perspective under globalisation, August, 2013. <https://www.researchgate.net/publication/275970070>