

Organizational Behaviour

Elixir Org. Behaviour 104 (2017) 45765-45772

Elixir
ISSN: 2229-712X

Econometric Analysis of the Performance of SSI Sector in India During 1980-81-2014-15

Debesh Bhowmik

International Institute for Development Studies, Kolkata.

ARTICLE INFO

Article history:

Received: 19 January 2017;

Received in revised form:
26 February 2017;

Accepted: 4 March 2017;

Keywords

SSI sector,
Export,
Employment, GDP,
Cointegration,
Vector error correction,
Causality.

ABSTRACT

In this paper, author attempts to establish relationship among output, employment, average productivity of labour and export of SSI sector in India and GDP in India during 1980-81-2014-15 through simple regression analysis, causality test, cointegration and vector error correction models. The paper concludes that output of SSI sector has been increasing at the rate of 10.12% per year and exponentially at the rate of 0.554% per year during 1980-81-2014-15. The series is stationary, stable and divergent as indicated by ARIMA and AR models. Average productivity, employment and export of SSI sector have been rising at the rates of 1.68%, 8.43%, and 13.34% per year respectively during the same period. One per cent increase in export led to 0.48% increase in GDP per year during the specified period. Production, employment, average productivity and export of SSI showed two cointegrating vectors whose vector error correction model is stable, divergent and insignificant error correction process. India's GDP, SSI sector's output, employment, average productivity and export have two cointegrating vectors but its vector error correction model is stable, divergent and insignificant error correction having problem of autocorrelations. New policy recommendations of RBI and new government policy on MSME are likely to accelerate the performance of SSI and its contribution to the national economy.

© 2017 Elixir All rights reserved.

I. Introduction

The promotion of the small-scale sector in India has been an important thrust of industrial policy since independence though the focus of concern changed with the priorities of each five year plan. A Small Scale Industries Board was set up in 1954. Small Scale Industries and Agricultural & Rural Industries and the Small Industries Development Organisation (SIDO) which was under the Development Commissioner, Small Scale Industries were set up in 1956. At the State level, the Commissioner/ Directorate of Industries were the main institutional authority for SSIs. This structure has remained, though several other institutions have come into being in the 1970s and 1980s, particularly at the State level.

The Karve Committee Report (1955) was one of the earliest of these exercises which recommended a protective environment for the growth of small industries in India. Since then, policies targeted for the SSI sector have aimed at fostering its growth through positive policy interventions in the areas of finance, technology, infrastructure and extension services, among several other requirements of the sector. Supportive policies through the 1960s, 70s and 80s took the form of reservation of products exclusively for the SSI sector (836 products are reserved exclusively for SSIs at present) grant of fiscal concessions and government procurement of supplies from the sector. Due to liberalization, globalization and privatisation, SSI sector has so far been insulated to a large extent from pressures of competition both domestically and internationally. There are at least 3 lakh units declared as sick and out of production, accounting for 10 percent of the recorded units.

The sector now employs 17 million persons and is the second largest employer of India's workforce after agriculture. It now accounts for 95% of all industrial units in the country and 40% of total output. About 7,500 products are manufactured in the small-scale sector. The export share is 35%. The composition of exports shows the largest shares of SSIs are in the industry groups: hosiery and garments (29.0%), food products (21.4%) and, leather products (18%). The industry groups which have recorded high growth rates and a large share in total production of SSIs are: textile products, wood, furniture, etc., paper and printing, and metal products. The total number of SSI working units in the country is estimated to be around 3 million. In terms of ownership, the vast majority of SSI units are proprietary concerns (80.5%) with only 16.8% functioning as partnerships and private limited. A UNIDO study defines clusters as 100 registered small-scale units. There are estimated 350 SME clusters in India which contribute directly and indirectly to 60% of India's exports. The location-wise distribution of clusters shows 65% concentrated in cities and metros and only 13% in small towns and rural areas. There is scope for encouraging the development of clusters in rural areas and rural-based artisan centres. The micro, small and medium enterprises (MSMEs) currently employ 12 crore individuals and contribute 15 percent to GDP.

II. Objective

In this paper, the author tried to find out the growth of output, employment, average productivity and export of small scale industries in India during 1980-81-2014-15 and relate among them with GDP in India by causality, cointegration and VEC models.

How much Indian GDP is affected by those factors was also calculated by the author during the specified period. The new policy of the Government of India on MSME is an added area of this paper.

III. Methodology and data

Semi-log linear and exponential model were used to calculate growths of output, employment, average productivity, and export of SSI sector during 1980-81-2014-15. Double log multi-variable models were used to show relationship between GDP, output, employment, average productivity and export of SSI sector of India in the same period. Granger Causality, Johansen cointegration and Vector Error Correction Models were used to relate among them. The data of production, employment, average productivity of labour, exports of SSI sector in India and GDP at factor cost of India during 1980-81-2014-15 were collected from the Reserve Bank of India.

IV. Literature review

Rao and Kiran(2014) studied that the sector has characterized by low investment, operational flexibility, location wise mobility and import substitution. The Sector has been undergone a metamorphic change in the era of globalization. Many changes have taken place both national and international markets. The sector is playing a prominent role in ensuring the inclusive growth and regional balance. The sector is consistently registered a higher growth rate than the rest of industrial sector. There are over 6000 products ranging from traditional to high-tech items manufactured by this sector. Besides, the sector is facing challenge in the form of competition and opened opportunities due to improved technology, collaborations government intervention. Malapati(2011) showed that small-scale industries have been playing a momentous role in overall economic development of a country like India where millions of people are unemployed or underemployed. This sector solves these two problems through providing immediate large-scale employment, with lower investments. According to Dr. Manmohan Singh, "the key to our success in employment lies in the success of manufacturing in the small scale sector." In a country like India, where capital is scarce and unemployment is wide spread, growth of small-scale industries is vital in order to achieve balanced economic growth. The strength of small-scale enterprises lies in their wide spread dispersal in rural, semi-urban and urban areas, fostering entrepreneurial base, shorter gestation period, and equitable distribution of income and wealth. Susmita Mohan(2014) described that in Kerala the amount of investment and the value of production has increased but, with respect to the amount of employment and the number of enterprises, a marginal decline has been observed. The total number of small enterprises does not show a real progress. If the potential of SSI is properly harnessed, it can help in accelerating the pace of socio-economic development and balanced regional growth apart from creation of employment opportunities. It is very essential to develop the industrial sector of Kerala mainly through the development of SSI sector. Hussain(2004) showed that the growth, production, export potentiality of SSI sector of India are high. Baiyuei(2004) explained that paper highlights the role and performance of small-scale industries in the economy with the parameters of number of units, production, employment and exports. The Report of Loksava Secretariat (2014) showed the export, credit and sick industries and government policies of SSI sector of India. Garg(1996) analysed the growth of SSI sector especially after 1980 and examined structure of fiscal incentives which improved the growth of SSI sector.

Vanipriya and Venkatramaraju (2011) studied that Small scale industry is widely recognized as a powerful instrument for socio economic growth and balanced sectoral development. One of the distinctive characteristics of small scale sector is that the development of these industries would create broader employment opportunities assisting entrepreneurship and skills development and ensure better use of scarce financial resources and appropriate technology. The small enterprises have by now established their competence to manufacture a wide variety of sophisticated goods in different product lines requiring a high degree of skill and precision. Chowdhury and Saini (2015) indicate that small manufacturers are affected in the globalization era and facing lot of problems to run their businesses. It has been observed that units from all surveyed industries irrespective of age and turnover believed that liberalization has resulted into more competition, increased quality consciousness, difficulty in marketing, dumping of cheaper goods by other countries, reduction in profit margin and high level of customer satisfaction. Small units are not using latest machinery to manufacturer quality product with latest design as per international standards.

There is absence of clear policies relating to marketing and human resource management. Most of the units do not have separate marketing and human resource departments. Small manufacturers are unable to attract the professionals because of their financial limitations. Another problem of the small units is that there is lack of cluster association for the small industry. The operational cluster associations are ineffective and not helping much to the industry. The domestic and foreign markets have become highly competitive due to the process of liberalization. Sonia and Kansal(2009) showed the growth of output, employment and export of SSI sector of the Indian economy after reform. Jena(2009) emphasized in the Vishesh Krishi and Gramin Udyog Yojana (VKGUY) including other incentives and concessions, the export obligation period for cottage and tiny industrial sector in SEZ Schemes the export oriented Small Scale Industries and the clusters approach for development of small and medium scale industries and potentiality of export. Shivani Mishra(2012) threw light on the role of MSME to uplift the social disadvantage group and highlighted the MSME status in the era of globalization and also mentioned review for the same. Lastly she suggested that apart from governmental role it is also responsibility of MSME sector to be empowered about awareness, access and usage of government policy and programme. This proactive approach helps MSME sector to sustain in liberalization era.

V. Econometric observations on small scale industries in India.

Production of SSI in India during 1980-81-2014-15 has been increasing at the rate of 10.12% per year significantly.

$$\text{Log}(x_1) = 6.066699 + 0.10126t$$

$$(35.307) * (12.16) *$$

$R^2 = 0.817$, $F = 147.94$ *, $DW = 0.2298$, where x_1 = output of SSI sector, * = significant at 5% level. In Fig-1, the trend line of SSI output is shown as upward rising.

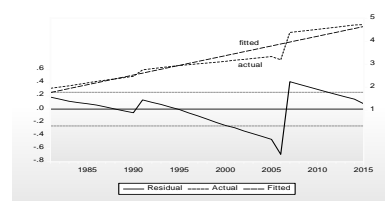


Fig1. The trend line of output of Indian SSI.

Source-Computed by author

Even the SSI production has been increasing exponentially at the rate of 0.554% per annum during 1980-81-2014-15 which is significant at 5% level. The estimated equation is shown below.

$$X_1 = e^{-2.836 + t^{0.554}}$$

$R^2=0.918$, $DW=0.52$, the t values of 2.8368 and 0.554 are 7.362 and 33.7196.

This trend line is plotted in Fig-2

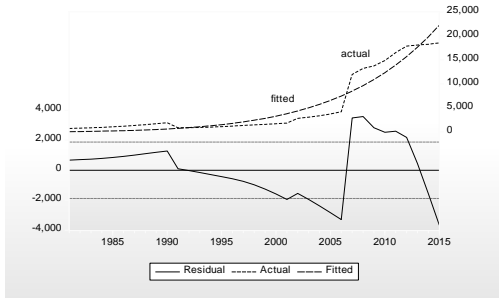


Fig 2. Exponential trend line of SSI production

Source-Computed by author

The estimated AR(2) process in the model of ARMA Maximum Likelihood method of the SSI production during 1980-81-2014-15 is highly good fit and stable but its AR(1) is significant and AR(2) process in insignificant and thus the model is divergent.

$$X_{1t} = 8.107859 + 1.168611x_{1t-1} - 0.187227x_{1t-2} + 0.06178\sigma_t^2$$

(5.55)* (3.66)* (-0.608) (7.27)*

$R^2=0.95$, $F=203.61^*$, $DW=2.01$, Inverted AR root=0.98 and 0.19 respectively.

Similarly the ARIMA(1,1,1) model of SSI production is estimated as stable, stationary and divergent because its AR(1) is significant and convergent but its MA(1) is insignificant and divergent and its root is imaginary .The estimated equation is a good fit and is given below.

$$X_{1t} = 8.119189 + 0.9800x_{1t-1} + \epsilon_t + 0.1557\epsilon_{t-1} + 0.0621\sigma_t^2$$

(5.50)* (7.30)* (0.396) (7.26)*

$R^2=0.95$, $F=202.26^*$, root of AR=0.98 , root of MA=-0.16 Average productivity of SSI in India during 1980-81-2014-15 has been increasing at the rate of 1.68% per year significantly

$$\text{Log}(x_3) = 4.3707 + 0.016822t$$

(33.40)* (2.65)*

$R^2=0.1758$, $F=7.04$, $DW=0.289$, *=significant

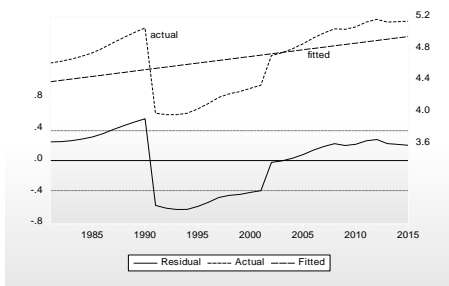


Fig 3. Trend line of average productivity of labour in SSI.

Source-Computed by author

SSI production (x_1) and average productivity of labour(x_3) are related exponentially during 1980-81-2014-15 at 5% significant level whose estimation is given below.

$$X_1 = e^{-3.146 + x_3^{0.4967}}$$

$R^2=0.84$, $DW=0.79$, and t values of -3.146 and 0.496 are -2.596 and 26.719.

It is depicted in Fig-4,

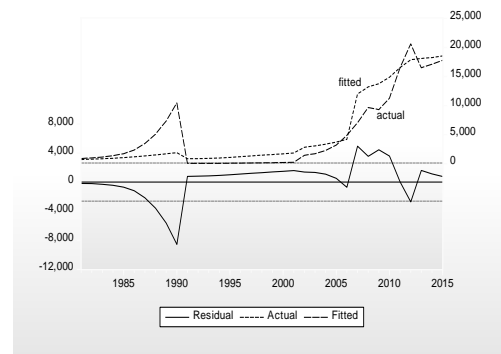


Fig 4. Exponential relation between x_1 and x_3 .

Source-Computed by author

The employment in SSI sector in India has been stepping up at the rate of 8.43% per year during 1980-81-2014-15 which is significant at 5% level.

$$\text{Log}(x_2) = 1.6939 + 0.084339t$$

(19.12)* (19.65)*

$R^2=0.92$, $F=386.24^*$, $DW=0.627$, *=significant at 5% level , x_2 = employment of SSI sector, *=significant

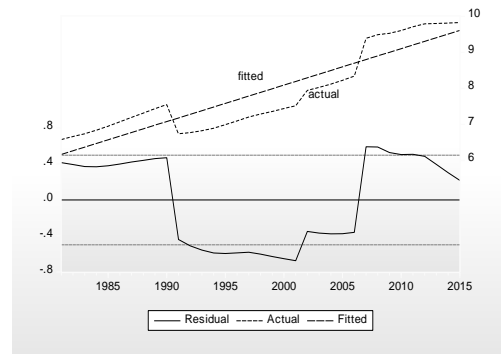


Fig 5. Trend line of employment in SSI sector.

Source-Computed by author

The export of SSI sector in India has been stepping up at the rate of 13.34% per year during 1980-81-2014-15 which is significant at 5% level.

$$\text{Log}(x_4) = 7.079066 + 0.133441t$$

(91.65)* (35.66)*

$R^2=0.97$, $F=1271.67^*$, $DW=0.2368$, x_4 =export of SSI sector, *=significant at 5% level

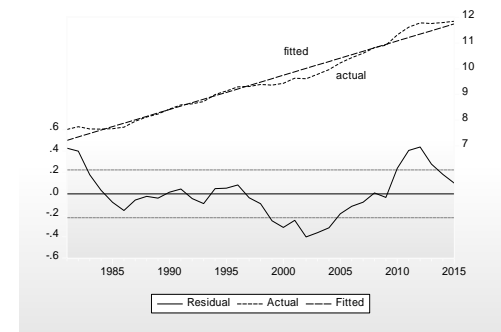


Fig 6. Trend line of export in SSI sector.

Source-Computed by author

The export of SSI sector as percent of India's total export has been increasing at the rate of 1.614% per year during 1980-81-2014-15 which is significant at 5% level. The estimated equation is given below.

$$\text{Log}(x_5) = 3.181993 + 0.016142t$$

(86.32)* (9.03)*

$R^2=0.71$, $F=81.6^*$, $DW=0.788$, *=significant at 5% level, x_5 = export of SSI sector as percent of India. In Fig-7, its trend line

is plotted and it is steadily increasing upward.

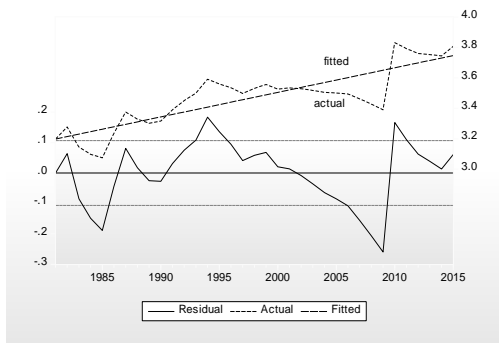


Fig- 7.Trend line SSI export as per cent of India.

Source- Computed by author.

It is estimated that one per cent rise in export of SSI sector per year during 1980-81-2014-15 in India led to 0.48% increase in GDP in India per year which is significant at 5% level.

$$\text{Log}(x_6) = 5.503044 + 0.485317 \text{log}(x_4)$$

$$(5.95)^* \quad (5.03)^*$$

$R^2 = 0.43$, $F = 25.30^*$, $DW = 2.09$, $*$ = significant at 5% level, x_6 = GDP at factor cost

The export of the small scale industries is significantly related with production, employment and average productivity of labour of small scale industries in India during 1980-81-2014-15. One percent increase in production, employment and average productivity of labour per year led to 4.6396% increase, 3.10316% decrease and 4.6847% decrease in exports of SSI respectively which are significant at 5% level.

$$\text{Log}(x_4) = 4.738787 + 4.639628 \text{log}(x_1) - 3.10316 \text{log}(x_2)$$

$$(9.35)^* \quad (3.84)^* \quad (-2.59)$$

$$-4.68472 \text{log}(x_3) + u_i$$

$$(-3.81)$$

$R^2 = 0.969$, $F = 325.22^*$, $DW = 0.64$, $*$ = significant at 5% level, where x_1 = SSI production, x_2 = employment, x_3 = average productivity of labour, x_4 = SSI export. The fitted and actual lines in SSI export are depicted in Fig-8.

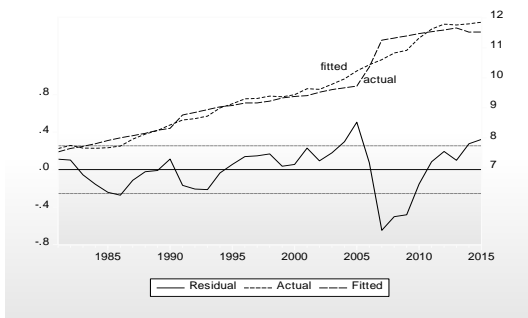


Fig 8. The estimated export in SSI.

Source-Computed by author

SSI production and employment, production and average productivity, average productivity and employment, average productivity and SSI export showed bidirectional causality but production and export, employment and export showed unidirectional causality as tested by Granger Causality Test which is shown below.

Table1 . Granger Causality Test.

| Null hypothesis | Observation | F statistic | prob |
|------------------------------------|-------------|-------------|--------|
| X_2 does not Granger cause x_1 | 34 | 0.69124 | 0.4121 |
| X_1 does not Granger cause x_2 | | 2.56536 | 0.1194 |
| X_3 does not Granger cause x_1 | 34 | 0.5676 | 0.4569 |
| X_1 does not Granger cause x_3 | | 1.71726 | 0.1997 |

| | | | |
|------------------------------------|----|---------|--------|
| X_4 does not Granger cause x_1 | 34 | 0.02677 | 0.8863 |
| X_1 does not Granger cause x_4 | | 16.360 | 0.0003 |
| X_3 does not Granger cause x_2 | 34 | 1.46098 | 0.2359 |
| X_2 does not Granger cause x_3 | | 1.73235 | 0.1978 |
| X_4 does not Granger cause x_2 | 34 | 1.30647 | 0.2618 |
| X_2 does not Granger cause x_4 | | 16.1489 | 0.0003 |
| X_4 does not Granger cause x_3 | 34 | 1.37076 | 0.2506 |
| X_3 does not Granger cause x_4 | | 1.60286 | 0.2149 |

Source-Computed by author

Johansen cointegration test for SSI export(x_4), production (x_1), employment(x_2), average productivity of labour(x_3) suggests that there are two cointegrating equations as verified by Trace Statistic and Max Eigen Statistic. In Table-2, their values are given.

Table 2. Cointegration Test.

| Hypothesized no. of CEs | Eigen value | Trace Statistic | 0.05 critical value | Probabilities** |
|-------------------------|-------------|---------------------|---------------------|-----------------|
| None* | 0.67629 | 72.4744 | 47.8561 | 0.0001 |
| At most1* | 0.571125 | 35.2525 | 29.797 | 0.0106 |
| At most2 | 0.15846 | 7.3151 | 15.7947 | 0.5413 |
| At most3 | 0.04796 | 1.6218 | 3.841 | 0.2028 |
| | | Max Eigen Statistic | | |
| None* | 0.67629 | 37.2219 | 27.584 | 0.0021 |
| At most1* | 0.571125 | 27.9374 | 21.131 | 0.0047 |
| At most2 | 0.15846 | 5.6932 | 14.264 | 0.6528 |
| At most3 | 0.04796 | 1.62188 | 3.841 | 0.2028 |

Source-Computed by author, $*$ =rejection of the hypothesis at 0.05

The estimated equations of the Vector Error Correction Model are given below.

$$[1] \Delta x_{1t} = 544.3293 + 3.6477 \Delta x_{1t-1} - 483.6213 \Delta x_{2t-1} - 53.339 \Delta x_{3t-1}$$

$$(266.04)^* \quad (3.37)^* \quad (3.35)^* \quad (-2.60)^*$$

$$-0.07601 \Delta x_{4t-1} + 0.300 \text{EC}$$

$$(-1.44) \quad (0.77)$$

$R^2 = 0.397$, $F = 2.97$, $*$ = significant

$$[2] \Delta x_{2t} = 4.7311 + 0.02928 \Delta x_{1t-1} - 3.947 \Delta x_{2t-1} - 0.4270 \Delta x_{3t-1}$$

$$(2.67)^* \quad (4.07)^* \quad (-4.11)^* \quad (-3.13)^*$$

$$-0.00093 \Delta x_{4t-1} + 0.0043 \text{EC}$$

$$(-2.67)^* \quad (1.69)$$

$R^2 = 0.41$, $F = 3.76$

$$[3] \Delta x_{3t} = 1.3264 - 0.00013 \Delta x_{1t-1} + 0.1021 \Delta x_{2t-1} + 0.0068 \Delta x_{3t-1}$$

$$(0.27) \quad (-0.006) \quad (0.039) \quad (0.0185)$$

$$+0.000125 \Delta x_{4t-1} + 0.00089 \text{EC}$$

$$(0.1316) \quad (0.126)$$

$R^2 = 0.0069$, $F = 0.0379$,

$$[4] \Delta x_{4t} = -847.11 - 6.5858 \Delta x_{1t-1} + 963.52 \Delta x_{2t-1} + 105.48 \Delta x_{3t-1}$$

$$(0.64) \quad (-1.23) \quad (1.35) \quad (1.04)$$

$$+0.8959 \Delta x_{4t-1} - 1.373 \text{EC}$$

$$(3.46)^* \quad (-0.71)$$

$R^2 = 0.458$, $F = 4.56$

Equation 1 and 2 are good fit but equations 3 and 4 are not. In all equations error corrections are insignificant. Δx_{1t} , Δx_{2t} and Δx_{4t} are significantly related with previous period. Although the model is stable (all the roots lie inside the unit root circle) but it is diverging because all the impulse response

functions are moving away from the equilibrium after shock. They are shown in Fig-9 and Fig-10 respectively.

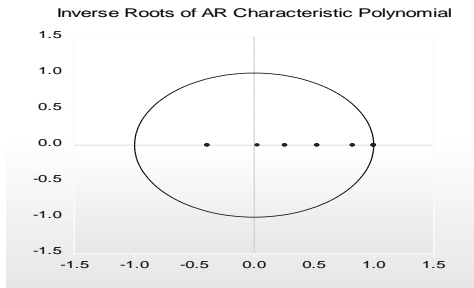


Fig 9. Unit root circle.

Source-Computed by author

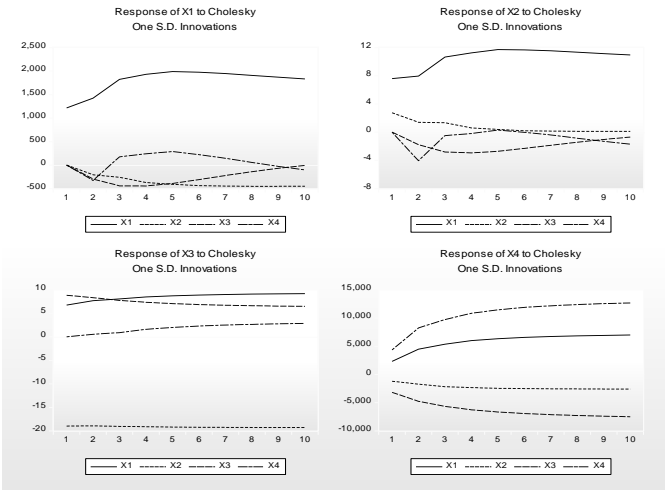


Fig10. Impulse response functions.

Source-Computed by author

Johansen cointegration test among production, employment, average productivity, export of SSI sector with the GDP growth rate of India showed two cointegrating equations as tested by Trace statistic and Max Eigen Statistic.(Table-3).

Now, we require to fit the vector error correction model for stability and equilibrium analysis. The estimated equations are given below.

$$[1] \Delta x_{1t} = 344.3614 + 3.6498 \Delta x_{1t-1} - 483.7807 \Delta x_{2t-1} - 53.576 \Delta x_{3t-1} - 0.076025 \Delta x_{4t-1} - 3.89E-05 \Delta x_{6t-1} + 0.299EC$$

(2.009) (3.31)* (-3.28)* (-2.56)*
(-1.46) (-0.07) (0.75)

$$R^2=0.35 \quad F=2.408 \quad AIC=17.26 \quad SC=17.58, * = \text{significant}$$

$$[2] \Delta x_{2t} = 4.742 + 0.029 \Delta x_{1t-1} - 3.953 \Delta x_{2t-1} - 0.4306 \Delta x_{3t-1} - 0.000938 \Delta x_{4t-1} - 6.12E-07 \Delta x_{6t-1} + 0.00443EC$$

(-2.64)* (-0.17) (1.69)

$$R^2=0.41 \quad F=3.04 \quad AIC=7.23 \quad SC=7.55$$

$$[3] \Delta x_{3t} = 1.2258 - 0.000386 \Delta x_{1t-1} + 0.1353 \Delta x_{2t-1} + 0.008 \Delta x_{3t-1} + 0.000857 \Delta x_{4t-1} + 4.27E-07 \Delta x_{6t-1} + 0.00045EC$$

(0.16) (0.04) (0.06)

$$R^2=0.0066, F=0.029, AIC=9.24, SC=9.56$$

$$[4] \Delta x_{4t} = 834.055 - 6.64 \Delta x_{1t-1} + 970.018 \Delta x_{2t-1} + 106.94 \Delta x_{3t-1} + 0.9007 \Delta x_{4t-1} - 0.00024 \Delta x_{6t-1} - 1.417EC$$

(3.42)* (-0.095) (-0.73)

$$R^2=0.45, F=3.69, AIC=20.45, SC=20.72$$

$$[5] \Delta x_{6t} = -8125.12 - 69.633 \Delta x_{1t-1} + 9226.75 \Delta x_{2t-1} + 755.29 \Delta x_{3t-1} + 4.609 \Delta x_{4t-1} - 0.494 \Delta x_{6t-1} - 31.795EC$$

(0.25) (-2.89)* (-0.24)

$$R^2=0.25, F=1.46, AIC=28.88, SC=29.20$$

Table 3. Cointegration Test.

| Hypothesized no of CEs | Eigen value | Trace Statistic | 0.05 CV | Prob |
|------------------------|-------------|---------------------|----------|--------|
| None* | 0.680039 | 91.62434 | 69.81889 | 0.0004 |
| At most1* | 0.571610 | 54.01894 | 47.85613 | 0.018 |
| At most2 | 0.437863 | 26.04418 | 29.79707 | 0.1274 |
| At most 3 | 0.149857 | 7.035843 | 15.49471 | 0.5735 |
| At most4 | 0.049585 | 1.678274 | 3.841466 | 0.1952 |
| | | Max Eigen Statistic | | |
| None* | 0.680039 | 37.60540 | 33.87687 | 0.0171 |
| At most1* | 0.571610 | 27.97476 | 27.58474 | 0.0446 |
| At most2 | 0.437863 | 19.00833 | 21.1362 | 0.0966 |
| At most 3 | 0.149857 | 5.357569 | 14.2646 | 0.6962 |
| At most4 | 0.049585 | 1.678274 | 3.841466 | 0.1952 |

Source-Computed by author, *=denotes rejection of the null hypothesis at 0.05 level, **=Mackinnon-Staug-Michelis(1999) p value

Equation Δx_{2t} is a good fit and equation Δx_{1t} is partially good. $\Delta x_{1t}, \Delta x_{2t}, \Delta x_{4t}$ and Δx_{6t} are significantly related with previous period but the speed of error corrections are slow except for Δx_{6t} although all are insignificant which means any external shock could not rebound the system to equilibrium. Therefore, this VECM is stable but diverging.

The stability is observed by unit root circle where all roots lie inside the circle which is shown in Fig-11.

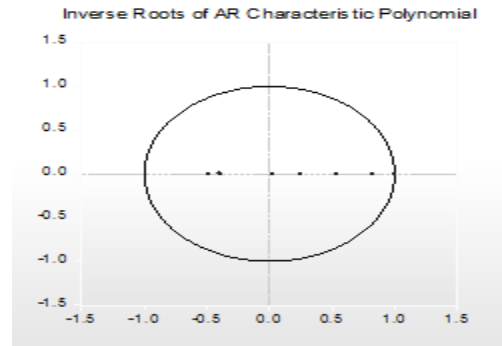


Fig 11. Unit root circle test.

Source-Computed by author

The diverging error correction process is observed from impulse response functions which are shown below in Fig-12

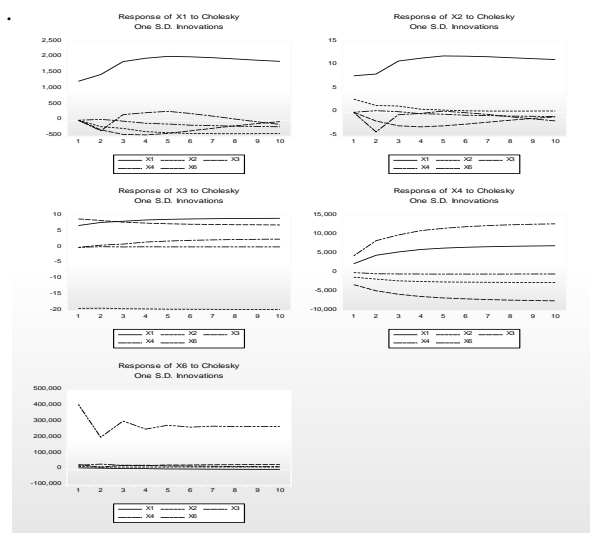


Fig 12. Impulse response functions.

Source-Computed by author

The residuals of the VECM suffer from auto correlation problems which are shown in Fig-13.

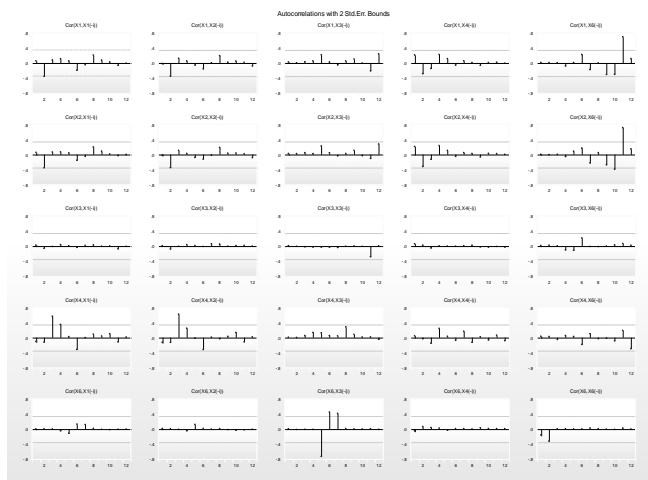


Fig 13. Autocorrelation problems.

Source-Author

VI. Limitations and future scope

This model can be explained in pre-reform and post reform period to compare improvement of SSI sector .How much industrial production and growth affect GDP of India can be comparable with the SSI sector during the same period so that importance of the sector could be found. Commodity wise exportable and their contributions to the GDP is a scope for future research area.

VII. Some recommended policy issues

[A]RBI advised to take necessary steps with regard to:-

- [1] Fixation of self –set target by the banks for SSI.
- [2] Enhancement of composite loan limit for SSI from Rs. 25 lakh to Rs, 50 lakh.
- [3] Incorporating credit requirement in the identified clusters in the banks' Annual Credit Plans for the year 2003-04.
- [4] Adequate publicity by the banks to various schemes/facilities extended to SSI sector like availability of collateral-free/composite loan.
- [5] Banks were advised to review the steps required for improving the flow of credit and bankers' confidence in SSI lending and enhancing awareness on facilities/ incentives/ guidelines of the banks.
- [6] Finance Minister announced on 9th January, 2004 creation of a Small and Medium Enterprises (SME) Fund under SIDBI, initially of Rs. 10,000 crore to address inter alia the problem of inadequacy of financial resources at competitive rates for the Small Scale Sector.
- [7] The RBI has constituted a working group on Flow of Credit to SSI sector under the chairmanship of Dr. A.S. Ganguly, Director, and Central Board of the RBI as per the announcement made by the Governor, RBI in the Mid-Term.

[B]They have suggested the following policies

- Definition of SSIs based on the Turnover limit along with the fixed assets.
- Single Taxation Law each for all Direct and Indirect Taxes.
- Single Comprehensive Labour Policy.
- Reservation (Procurement) Policy - Price Preference and Purchase Reservation should be continued for SSIs.
- Compulsory Registration for SSIs and thereby creating authenticated data and statistics on SSIs.
- Benchmarking of SSI Associations and compulsory registration of SSI units with such Associations.
- Quality Improvements - Testing Centres and Laboratories and availability of various standards specifications.

- Infrastructure development like work sheds, etc. at affordable cost including practical rule.
- Updated Industrial Training Centres in all districts for industrial needs.
- Maintaining Stability of Raw material prices.
- Credit Flow and Awareness of schemes among SSIs.
- Promotion of Clusters.
- Sick Unit Rehabilitation Scheme.
- Easy Exit Policy for Sick Units.

[C]New policy of Indian government

The Government of India has enacted the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 whose properties and policies are given in details,

- (i) A micro enterprise is an enterprise where investment in plant and machinery does not exceed Rs. 25 lakh;
- (ii) Its investment in plant and machinery is more than Rs. 25 lakh but does not exceed Rs. 5 crore; and
- (iii) Its investment in plant and machinery is more than Rs.5 crore but does not exceed Rs.10 crore.

- (iv) A micro enterprise is an enterprise where the investment in equipment does not exceed Rs. 10 lakh;
- (v) It's investment in equipment is more than Rs.10 lakh but does not exceed Rs. 2 crore; and
- (vi) A medium enterprise is an enterprise where the investment in equipment is more than Rs. 2 crore but does not exceed Rs. 5 crore.

(vii) Prime Minister's Task Force on MSMEs (Chairman: Shri T.K.A. Nair, Principal Secretary), banks have been advised to achieve a 20 per cent year-on-year growth in credit to micro and small enterprises, a 10 per cent annual growth in the number of micro enterprise accounts and 60% of total lending to MSE sector as on preceding March 31st to Micro enterprises.

To ensure credit availability to micro enterprises within the MSE sector, banks should ensure that:

- (a) 40 per cent of the total advances to MSE sector should go to micro (manufacturing) enterprises having investment in plant and machinery up to Rs. 10 lakh and micro (service) enterprises having investment in equipment up to Rs. 4 lakh.
- (b) 20 per cent of the total advances to MSE sector should go to micro (manufacturing) enterprises with investment in plant and machinery above Rs. 10 lakh and up to Rs. 25 lakh, and micro (service) enterprises with investment in equipment above Rs. 4 lakh and up to Rs. 10 lakh. Thus, 60 per cent of MSE advances should go to the micro enterprises.
- (c) Public sector banks have been advised to open at least one specialized branch in each district.
- (d) As on March 2014 there are 2887 specialized MSME branches.
- (e) A composite loan limit of Rs.1crore can be sanctioned by banks to enable the MSME entrepreneurs to avail of their working capital and term loan requirement through Single Window in terms of our Master Circular on lending to the MSME sector dated July 1, 2014.

(f) Cluster based approach to lending provides a full-service approach to cater to the diverse needs of the MSE sector .A cluster based approach may be more beneficial (a) in dealing with well-defined and recognized groups (b) availability of appropriate information for risk assessment (c) monitoring by the lending institutions and (d) reduction in costs.

(g) UNIDO has identified 388 clusters spread over 21 states in various parts of the country. The Ministry of Micro, Small and Medium Enterprises has also approved a list of clusters under the Scheme of Fund for Regeneration of Traditional Industries

(SFURTI) and Micro and Small Enterprises Cluster Development Programme (MSE-CDP) located in 121 Minority Concentration Districts. Accordingly, banks have been advised to take appropriate measures to improve the credit flow to the identified clusters.

(h) The Ministry of MSME, and SIDBI set up the Credit Guarantee Fund Trust to facilitate flow of credit to the MSE sector without the need for collaterals/ third party guarantees to project viability and secure the credit facility purely on the primary security of the assets financed. The Guarantee Trust would make good the loss incurred by the lender up to 85 per cent of the outstanding amount in default.

(i) With a view to facilitating credit flow and enhancing the comfort-level of the lending institutions, the credit rating of MSME units done by reputed credit rating agencies should be encouraged. Banks are advised to consider these ratings as per availability and wherever appropriate structure their rates of interest depending on the ratings assigned to the borrowing SME units.

[D]Other special steps

(1) In case of dispute with regard to any amount due, a reference shall be made to the Micro and Small Enterprises Facilitation Council, constituted by the respective State Government.

(2) A debt restructuring mechanism for units in MSME sector has been formulated and advised to all commercial banks. Prudential guidelines on restructuring of advances have also been issued.

(3) The sick MSE of debt re-structuring would need to be rehabilitated and put under nursing. It will be for the banks/financial institutions to decide whether a sick MSE unit is potentially viable or not. The rehabilitation package should be fully implemented by banks within six months from the date the unit is declared as potentially viable/viable.

(4) The decision on viability of the unit should be taken at the earliest but not later than 3 months of the unit becoming sick under any circumstances.

(5) As such for micro (manufacturing) enterprises, having investment in plant and machinery up to Rs. 5 lakh and micro (service) enterprises having investment in equipment up to Rs. 2 lakh, the Branch Manager may take a decision on viability and record the same, along with the justification.

(6) For sick units declared unviable, with credit facilities of Rs. 1 crore and above, a Committee approach may be adopted.

(7) Rural Self Employment Training Institutes (RSETIs) have been set up by various banks all over the country through Ministry of Rural Development and State Governments. RSETIs ensure that a list of candidates trained by them is sent to all bank branches of the area and co-ordinate with them for grant of financial assistance under any Govt. sponsored scheme or direct lending.

(8) Banks have been advised to set up the Financial Literacy Centres (FLCs) which provide assistance to the MSE entrepreneurs in regard to financial literacy, operational skills, including accounting and finance, business planning etc.

VIII. Conclusions

The paper concludes that output of SSI sector has been increasing at the rate of 10.12% per year and exponentially at the rate of 0.554% per year during 1980-81-2014-15. The series is stationary, stable and divergent as indicated by ARIMA and AR models. Average productivity, employment and export of SSI sector have been rising at the rates of 1.68%, 8.43%, and 13.34% per year respectively during the same period. One per cent increase in export led to 0.48% of

GDP per year during the specified period. Production, employment, average productivity and export of SSI showed two cointegrating vectors whose vector error correction is stable, divergent and insignificant error correction process. India's GDP, SSI sector's output, employment, average productivity and export have two cointegrating vectors but its error correction model is stable, divergent and insignificant error correction having problem of autocorrelations. New policy recommendations of RBI and new government policy on MSME are likely to accelerate the performance of SSI and its contribution to the national economy.

References

- Bala, N. (2000). *Economic Reforms and Growth of Small Scale Industries*, New Delhi, Deep & Deep Publications.
- Bansal, S. K. (1992). *Financial Problems of Small Scale Industries*, New Delhi, Anmol Publications.
- Basem, M. Lozi. (2008). Small-Scale Industries in the Globalization Era: The case of Jordan, *Journal of Business and Public Affairs*. www.scientificjournals.org/journals2008/articles1348.pdf
- Bayiuei, Srinivasulu. (2004). The role and performance of small scale industries in Indian Economy, *The IUP Journal of Managerial Economics*.
- Bhavani, T.A. (2002, July). Small-Scale Units in the Era of Globalisation: Problems and Prospects, *Economic and Political Weekly*, Special Article.
- Chowdhury, Mamata., & Saini, Anjali. (2015, Jan-June). Globalisation and Its Impact on the Performance of Small Scale Industries in India, *International Journal of Trade and Commerce*, 4(1), 160-171.
- Datt, R., & Sundaram, K. P. M. (1999). *Indian Economy*, (39th Edn.). New Delhi, S. Chand & Company.
- Desai, Vasanta. (2007). *Management of Small Scale Industry*, Mumbai, Himalaya Publishing House, 564-565
- Garg, C.C. (1996, October). Growth of Small Scale Industries in India-some policy issues, Working Paper-10, NIPFP Government of India. (2010). Report on Prime Minister Task Force on Micro, Small and Medium Enterprise. Ministry of Micro, Small and Medium Enterprise, New Delhi.
- Government of India. (2012-17). Report on Working Group on Micro, Small and Medium Enterprise Growth for 12th Five year Plan.
- Grant, Thornton. (2010, April). Vision 2020: Implication for MSME (Online)
- Hussain, Syed Vazith. (2004, Jan). Performance of small scale industries in India and the challenges ahead, *Indian Journal of Industrial Relation*, 39(3), 391-401.
- Jain, Neelam. (2004, March). Small Scale Industries in the new Millennium, *SEDME*, 30(1).
- Jena, R.K. (2009, May). Small Scale Industries in the Path of growth and promoting exports. DGCIS.
- Kumar, Nallabala Kalyan., & Sardar, Gugloth. (2011, Jan-June). Competitive Performance of Micro, Small and Medium Enterprise in India. *Asia Pacific Journal of Social Science*, 8 (1).
- Loksava Secretariat. (2014). Growth and performance of Medium and Small Scale Industries. New Delhi
- Malapati, Venkataramanaiah. (2011, June). The Performance of Small Scale Industries in India: An Overview, ssrn.com
- Mishra, Shivani. (2012, July). Small Scale Industries: Striving and Friving in the era of globalization, *International Journal of Enterprise Computing and Business Systems*, 2(2).

- Mohan, M.Susmitha.(2014, April).Growth and Performance of Small Scale Industries in India with special reference to Kerala, *Facts for You*.
- Pandey, Adya., &Prasad, Shivesh. (2007). Routes of Survival of SSI in India and its Futurity – A Study of Pre and Post Reform Period, *MPRA Paper No. 965*, University Library of Munich, Germany.
- Raghurama, A. (2004,June). Small Scale Industries in Kerala-Competitiveness and Challenges Under Globalization, *SEDME*, 31(2), 7- 17.
- Rao,Uma Maheswara.(2014).Performance of Small Scale Industries in India,*International Journal of Academic Research*, 1(1),www.ijar.org.in
- Rajyalakshmi, N. (2004, April-June). Productivity Awareness Among SSI Units: A Case Study, *The Indian Journal of Commerce*, 57(2), 64- 72.
- Rathod, C. B. (2007,June). Contribution of Indian Small Scale Entrepreneurs to Economic Growth in India: Opportunities and Challenges in Global Economy, Prabandh- *Journal of Management & Research*, 23,1- 12.
- Reserve Bank of India.(2009). *Handbook of Statistics on Indian Economy* (2008-09),Reserve Bank of India, Mumbai.
- Sonia.,&Kansal,Rajib.(2009,June).Globalisation and its Impact on Small Scale Industries in India,*PCMA Journal of Business*,1(2),135-146
- Subrahmanya, M.H. (2004,May).Small Industry and Globalization: Implications, Performance and Prospects, *Economic and Political Weekly*, Vol. XXXIX, No. 18, 826-1834.
- Subrahmanya, Bala M. H. (2006, August). Global TNCs and Local SMEs: How to Promote Linkages? Why? *The Chartered Accountant*, 243-24
- Sudan, F. K. (2005,July).Challenges in Micro and Small Scale Enterprises Development: Some Policy Issues, Synergy: I. T. S. *Journal of IT and Management*, 3(2),67-81
- Topandasani, Rajkumar, S. (2011,July).Performance of Small Scale Industries in India, *Southern Economist*, 50(6), p 7
- Vanipriya,R.,&Venkatrumaraju,D.(2011,September).Growth of Small Enterprises in India, *International Journal of Scientific and Engineering Research* ,2(9).