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Productivity Trends and Determinants of Indian Textile Industry: A Disaggregated Analysis

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ABSTRACT

Purpose: The textile industry is major contributor towards the economy of the nation. Textile Export Committee identified labour productivity and capital productivity as major determinants of Indian textile industry. So the present paper is an attempt to study productivity trends and growth performance of textile industry at disaggregated level. The present paper is divided in to three sections. Section-I of the paper focus upon the growth performance of Textile industry and its groups Textile and Textile Products. The growth performance has been measured in terms of number of factories, gross value added, number of employees and capital stock. Section-II of the paper makes an attempt to analyse the productivity trends i.e. labour productivity and capital productivity at disaggregated level and also analyses the effects of determinants such as labour productivity (LP), capital productivity (CP), unit labour cost (ULC), exchange rate (ER) and real effective exchange rate (REER) on the export competitiveness (EC).

Design/Methodology: The present study examines the productivity trends and effects of determinants on export competitiveness at disaggregated level. The textile industry has been divided in to two groups 'Textile' and 'Textile Products'. Regression analysis has been done using E views 8 to analyse the impact of various determinants on export competitiveness of textile industry and its 02 groups textile and textile products. The goodness of fit is also tested by examining serial correlation, heteroskedasticity and normal distribution among the residuals.

Findings: Sharp decline in the growth rate of labour productivity and capital productivity in 'Textile Products' group is observed which appeared to be a big concern, given the fact that the global market is getting more competitive and it requires to be more productive and capital intensive. The results of regression analysis showed high r square values in all the three groups namely 'textile industry', 'textile' group and 'textile products'

group. The regression model is also found to be good fit as all the conditions of good regression model are satisfied.

JEL Classification: J24; F31; H54.

Keywords: Labour productivity, Capital Productivity, Exchange Rate.

1. INTRODUCTION

Textile industry stands out with an exceptional importance in the worldwide economy as textile and clothing are amongst the foremost manufactured products. For developing countries textile industry has become an appropriate preference towards the path to industrialization. The textile industry has played a significant part in the in the initial hours of industrialization phases in Japan, Britain, North America and East Asian economies, including Hong Kong, the Republic of Korea and Taiwan which depended a great deal on textile & clothing exports from 1950 till 1980. The emerging economies like India, Bangladesh, Sri Lanka and Pakistan have come forward as major textile exporters in the past years. The textile industry of India comprises of business occupied in spinning natural & man-made fibers into yarns and threads which are then changed into fabrics. Finally, the process of dyeing and finishing takes place. Indian textile industry is a significant contributor towards the economic development of the nation. The textile industry contributes to 14 per cent of industrial production, 4 per cent of GDP, 13 per cent in total export basket, 27 per cent to the foreign exchange and 5 per cent in world textile exports. It also makes available employment to over 45 million people. Textile industry is a very varied industry, with its products being used by almost everyone. Availability of abundant raw material and lower cost skilled human resources not only provides competitive advantage but also helps out the industry to be in command of costs and also minimises the lead-time. India is one of the largest producers of cotton in the world and is also rich in resources of fibers like polyester, silk, viscose etc. Textile industry of India comprises of several competitive commodities like textile yarn and thread. Such commodities are most potential commodities and can accelerate the pace of exports (Sharma & Dhiman, 2014). Textile industry is also called as "Traditional Industry" and is also regarded as leg of economy of the industry. It occupies an important place in the economy as it has significant contribution towards industrial production, employment and exports (Dhiman & Sharma, 2016). The industry is labour-intensive and it provides employment to those with simple skills, including women. The countries such as Vietnam, Sri Lanka, Bangladesh, and Mauritius, have high output growth in this sector (Chakrabarty, 2014).

The presence of certain determinants effect the performance of exports. Labour cost is one of the major variables influencing the competitiveness of industry. Theoretically lower labour cost increases the export competitiveness. Labour costs impact textile export performance in various ways among developing countries in Asia. Theoretically more the labour costs, poorer the performance of export (Wang, 2013). Labour cost also impacts the demand of Indian products across the borders. In 2002, the average cost of labour in clothing industry in India was the lowest i.e $ 0.38 per hour as compared to China ($ 0.68 per hour), Sri Lanka ($ 0.48 per hour) and Bangladesh ($ 0.39 per hour) (USITC, 2004). The other variables including GDP, REER, per capita GDP and population growth rate of the importers have major influence. The devaluation of Indian Rupee would improve exports as the buyers would enjoy cheaper textile products (Sharma and Dhiman, 2015). Apart from this variable productivity is another vital driving factor in enhancing the competitiveness of any industry. Several researchers have indicated the lower productivities

in Indian textile industry. Lower productivity of Indian firms has curtailed the advantages of low wages (Uchikawa, 1999). Similar finding were reported by (Bheda, 2002; Joshi & Singh, 2010).and confirms that productivity level of Indian firms is significantly lower than the productivity in the western countries. This lower productivity can be enhanced by improving technical efficiency. Some researchers have also focussed on the causes of lower productivity of Indian garment firms. Some of the causes highlighted are poor technology, less number of machine per firm, less investment per machine, and poor infrastructure (Joshi et. al., 2005; Rangrajan, 2005). Issues related to labour productivity also need to be addressed in order to ensure competitiveness of exports. Labour productivity can be enhanced by automation as it will reduce the labour requirement and will also enhance the overall quality of the product.

Very few studies in India are undertaken by the researchers on examining the productivity levels of textile industry. Previous studies have focussed on diverse problems like productivity trends in cotton industry (Chadrasekharan and Sridharan, 1993), firm size, nature of ownership, and technical efficiency (Kumar and Pillai, 1996), productivity level in textile production (Bheda, 2002), and productivity and cost in Indian textile industry (Hashim, 2005). However a few studies have been found highlighting the growth and productivity trends of entire textile industry at both aggregate and disaggregate levels. Hence the present study is a footstep in this direction and attempts to examine the growth behaviour of textile and textile products and productivity trends in terms of labour and capital.

2. OBJECTIVES OF THE STUDY

1. To examine the growth performance of Indian textile industry at aggregate and disaggregate level.
2. To examine the labour and capital productivity trends of textile industry.
3. To analyze the impact of select determinants on export competitiveness of Indian textile industry.

3. RESEARCH METHODOLOGY

The present study uses the time series secondary data gathered from a variety of government published sources. The major data sources for various aspects of textile industry and its groups is collected from Annual Survey of Industries (various issues), Directorate General of Commercial Intelligence and Statistics (DGCI&S), Kolkata; Economic Survey (various issues), UN Comtrade database, Office of Economic Advisor and Reserve Bank of India. The present study takes in to account the period of 24 years (1991-92 to 2014-15) for examining the growth and productivity trends of textile industry. E Views 8 has been used for analysis purpose.

Techniques of Analysis

Compounded Annual Growth Rates (CAGR): CAGR indexes is calculated using exponential function for three periods 1991-92 to 2014-15; two sub-periods i.e. 1991-92 to 2002-03 and from 2003-04 to 2014-15.

$$Y_i = a(b_i)^t$$

$$\text{Log } Y_i = \log a + t \log (b_i)$$

where,

Y_i = export value/volume/unit price of ith item,

t = time variable.

The Annual Growth rate (r) can hence be calculated using the formula,

$$r = [\text{anti log } (\log b_i) - 1] \times 100$$

or

$$= (b - 1) \times 100$$

where, b = Slope of semi-logarithmetic trend

Augmented Dickey Fuller (ADF) Tests for Stationarity: The most important prerequisite to proceed for time series analysis is to check whether the data is stationary or not. In the present study stationarity is tested using ADF tests.

Regression Analysis: In order to access the effects of select variables on export competitiveness regression analysis has been carried out using *e* views 8. The equation for multiple (step-wise) regression analysis can be written as follows:

$$Y = a + b_1LP + b_2CP + b_3ULC + b_4ER + b_5REER$$

Here, Y is the dependent variable, i.e. the share of textile exports to output and a is the intercept which gives the autonomous change in Y (the dependent variable). The regression coefficients like b_1, b_2, b_3, b_4 and b_5 provides the measure of change in Y for a unit change in the corresponding independent variable, i.e. LP, CP, ULC, ER and REER respectively.

The fit of the regression model is also checked by using *Breusch-Godfrey Serial Correlation LM Test; Breusch-Pagan-Godfrey Heteroskedasticity Test and* Jarque-Bera test to check the normal distribution among residuals.

Variable Selection: The growth of Indian textile industry and its groups 'Textile' and 'Textile Products' has been examined in terms of various aspects like number of factories, gross value added, number of employees and capital stock for the whole period i.e. 1991-92 to 2014-15; two sub-periods i.e. 1991-92 to 2002-03 and from 2003-04 to 2014-15.Following variables are considered for the analysis.

Output: Output has been measured in terms of real gross value added, i.e. gross value added at 1993-94 prices. GVA measures the values of goods and services produced in an industry of the economy.

Labour: Labour input was measured in terms of number of persons employed.

Capital input: Capital input was measured by subtracting depreciation from gross fixed capital and deflating the resultant value by wholesale price index for industrial machinery for textiles.

Export Competitiveness: There are various indicators for measuring export competitiveness. The first indicator is ratio of India's textile exports to world's textile exports indicates how much Indian textile industry is contributing to world textiles needs. This ratio is very small in value i.e. about three percent. The share of the industry of a country in world exports of that industry may depend upon developments at the global level, like rise/fall in production elsewhere, in other major exporting countries, hence the indicator

may not reflect true competitiveness. Moreover, the ratio being very small in magnitude may not capture the effect of determinants adequately.

The second indicator is the ratio of India's textile exports to its total exports may also not able to reflect the correct competitiveness index as the total exports includes the exports of other commodities also and hence the relative increase or decrease in exports of other commodities will influence the share of textile exports in total exports.

The third indicator, i.e. the ratio of India's textile exports to its total output is a relatively better indicator as it reflects the capacity of the country to export textiles out of our domestic production. This ratio can be increased either by producing more or by reducing our domestic consumption of textiles or by following suitable polices. Because of these features of this indicator, it has been used as an indicator of competitiveness to study the determinants of competitiveness of Indian textile industry and its groups- 'Textiles' and 'Textile Products.

Labour Productivity: LP was measured as ratio of gross value added (V) to the number of persons employed (L).

Capital Productivity: CP has been measured as ratio of gross value added (V) to capital stock (K) and represents amount of output produced per unit of capital

Unit Labour Cost: Unit labour cost was measured as the quotient of labour cost per employee to value added per employee. Labour cost was taken as the sum of wages and salaries, employer's contribution as provident fund and other funds and staff welfare expenses.

Theoretically, Increase in labour and capital productivity is expected to increase the export competitiveness of a country. A larger or stronger REER indicates that the home country is less competitive, while less or weak REER indicates that the home country is more competitive. So, depreciation of REER indicates an increase in competitiveness, while appreciation of REER indicates loss of competitiveness. Nominal exchange rate appreciation is harmful to export competitiveness; therefore, depreciation of exchange rate is expected to increase competitiveness of exports. In case of Unit Labor Cost (ULC), competitiveness of exports is expected to increase with decrease in ULC and vice-versa.

Growth Performance of Indian Textile Industry

The growth performance of the India textile industry and its two groups 'Textile' and 'Textile Products' has been examined by growth in number of factories, gross value added, number of employees and capital stock from 1991-92 to 2014-15 (see Figure 1, 2 and 3).

Number of Factories: The number of factories in 1991-92 and 2002-03 was 14612 and 16071 respectively. The compounded annual growth rate for this period was −0.28 percent. However with the impact of economic reforms the number of factories grew to 28599 in 2014-15. CAGR of 6.36 per cent was reported for sub-period 2003-04 to 2014-15. For the whole period i.e. 1991-92 to 2014-15 CAGR amounted to 2.11 percent for number of factories.

Gross Value added: Gross value added (V) was 8425 crores in 1991-92 and reached 20538 crores in 2002-03 with CAGR of 7.81 percent. The GVA kept increasing and grew at 13.65 percent and 10.87 percent for the periods 2003-04 to 2014-15 and 1991-92 to 2014-15 respectively.

Number of Employees: A stable trend was found in the growth of number of employees. In 1991-92 the numbers of employees were 1442000 and reached to 1801000 till 1997-98, thereafter slight decline has been observed till 2004-05 with 1714000 employees. CAGR was 0.04 percent for 1991-92 to 2002-03 and improved to 2.23 percent for the sub period 2003-04 to 2014-15. CAGR of 1.74 percent has been observed for the entire period i.e. 1991-92 to 2014-15.

Capital Stock: Capital stock has observed fluctuations and declined from 29603 crores in 1999-00 to 22732 crores in 2005-06. Thereafter significant increase has been observed till 2014-15 and CAGR was 11.48 percent for the period 2003-04 to 2014-15 and 6.47 percent for the entire period.

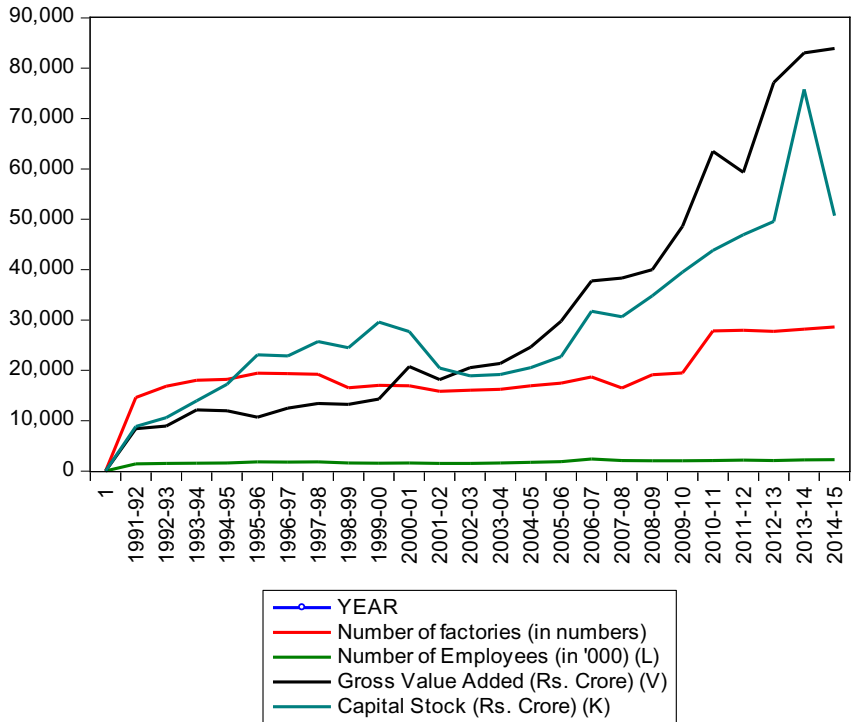

Figure 1: Growth Performance of Indian Textile Industry

Growth Performance of Indian 'Textile' Group

Number of Factories: The number of factories in 1991-92 and 2002-03 was 10840 and 12764 respectively. The compounded annual growth rate for this period was 0.14 percent. However the number of factories grew to 18743 in 2014-15. CAGR of 3.97per cent was reported for sub-period 2003-04 to 2014-15. For the whole period i.e. 1991-92 to 2014-15 CAGR amounted to 1.92 percent for number of factories.

Gross Value added: Gross value added (V) was 6970 crores in 1991-92 and reached 16620 crores in 2002-03 with CAGR of 7.77 percent. The GVA kept increasing and grew at 12.16 percent and 10.40 percent for the periods 2003-04 to 2014-15 and 1991-92 to 2014-15 respectively.

Number of Employees: A stable trend was found in the growth of number of employees. In 1991-92 the numbers of employees were 1264000 and reached to 1431000 till 1997-98, thereafter slight decline has been observed till 2005-06 with 1337000 employees. CAGR was −1.06 percent for 1991-92 to 2002-03

and improved to 1.19 percent for the sub period 2003-04 to 2014-15. CAGR of 0.66 percent has been observed for the entire period i.e. 1991-92 to 2014-15.

Capital Stock: Capital stock has observed fluctuations again and declined from 23115 crores in 1997-98 to 17850 crores in 2005-06. Thereafter significant increase has been observed till 2014-15 and CAGR was 12.27 percent for the period 2003-04 to 2014-15 and 6.23 percent for the entire period.

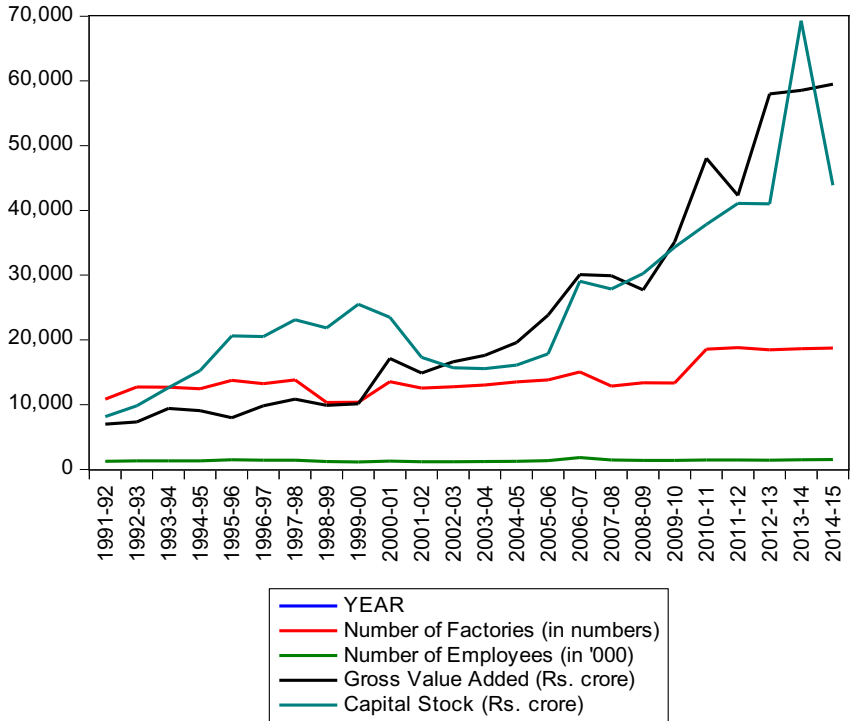

Figure 2: Growth Performance of Indian 'Textile' Group

Growth Performance of Indian 'Textile Products' Group

Number of Factories: The number of factories declined in 1991-92 from 3772 crores to 3307 crores in 2002-03. The compounded annual growth rate for this period was -2.02 percent. However the number of factories grew to 9856 in 2014-15. CAGR of 13.27 per cent was reported for sub-period 2003-04 to 2014-15. For the whole period i.e. 1991-92 to 2014-15 CAGR amounted to 2.54 percent for number of factories.

Gross Value added: Gross value added (V) was 1455 crores in 1991-92 and reached 3918 crores in 2002-03 with CAGR of 7.84 percent. The GVA kept increasing and grew at 18.63 percent and 12.41 percent for the periods 2003-04 to 2014-15 and 1991-92 to 2014-15 respectively.

Number of Employees: A stable trend was found in the growth of number of employees. In 1991-92 the numbers of employees were 178000 and reached to 440000 till 1999-00, thereafter slight decline has been observed till 2003-04 with 379000 employees. CAGR was -5.18 percent for 1991-92 to 2002-03 and 4.9 percent for the sub period 2003-04 to 2014-15. CAGR of 5.41 percent has been observed for the entire period i.e. 1991-92 to 2014-15.

Capital Stock: Capital stock has observed fluctuations again and declined from 4228 crores in 2000-01 to 2782 crores in 2007-08. Thereafter significant increase has been observed till 2014-15 and CAGR was 7.57 percent for the period 2003-04 to 2014-15 and 8.19 percent for the entire period.

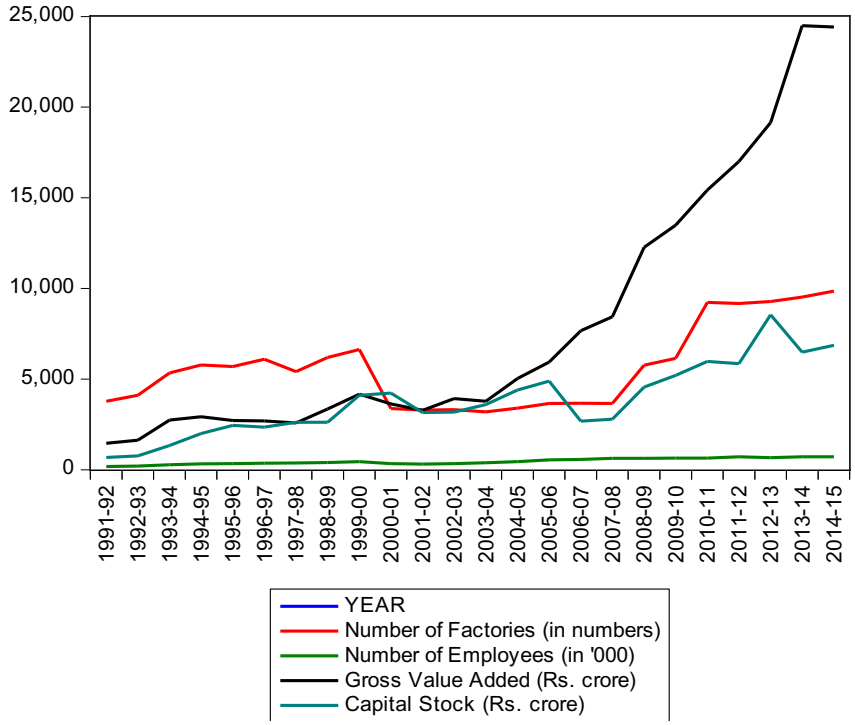

Figure 3: Growth Performance of Indian 'Textile Products' Group

Productivity Trends and Determinants of Indian Textile Industry

Labour and Capital Productivity trends in Indian textile industry and its 02 groups 'textile' and 'textile products' are examined from 1991-92 to 2014-15. Exchange Rate and REER are same for textile and textile products.

Labour Productivity: Labour productivity of industry has witnessed an increasing trend from ₹58426 in 1991-92 to ₹73893 in 1994-95. Thereafter it declined to ₹58565 in 1995-96. After this period significant increase has been observed and labour productivity increased to ₹372542 in 2014-15. The use of technology can be attributed for this increase in the productivity.

Capital Productivity: Capital productivity represents the amount of output produced per unit of capital. From 1991-92 to 1999-00 slight fluctuation are observed but thereafter capital productivity has increased from ₹0.75 to ₹1.65 in 2014-15.

Export Competitiveness: The ratio of exports of Indian textile industry to its output increased from 33.83 percent in 1991-92 to 53.33 percent in 2014-15 (with fluctuations in between).

Unit Labour Cost: Unit Labour Cost (ULC) increased from ₹0.37 lakh in 1991-92 to ₹0.45 lakh in 1999-00. There after declining trend has been observed which is a god indicator for export competitiveness and reached to 0.32 lakh in 2014-15.

Exchange Rate and Real Effective Exchange Rate: Exchange rate of rupee in terms of dollars increased from ₹24.47 in 1991-92 to ₹61.14 in 2014-15, indicating depreciation of Indian rupee. Real Effective Exchange Rate (REER) has shown fluctuations. REER was 103.84 in 1991-92 and reached to 94.52 in 1998-99. Thereafter fluctuations are observed and reached 111.2 in 2014-15.

Productivity Trends of Indian 'Textile' Group

Labour Productivity: Labour productivity of industry has witnessed an increasing trend from ₹55142 in 1991-92 to ₹69677 in 1994-95. Thereafter it declined to ₹53764 in 1995-96. After this period significant increase has been observed and labour productivity increased to ₹386979 in 2014-15.

Capital Productivity: From 1991-92 to 2001-02 slight fluctuation are observed but thereafter capital productivity has increased from ₹1.05 in 2002-03 to ₹1.35 in 2014-15.

***Unit Labour Cost*:** Unit Labour Cost (ULC) increased from ₹0.41 lakh in 1991-92 to ₹0.55 lakh in 1999-00. Theerafter declining trend has been observed which is a god indicator for export competitiveness and reached to 0.29 lakh in 2014-15.

Productivity Trends of Indian 'Textile Product' Group

Labour Productivity: Labour productivity of industry has witnessed an increasing trend from ₹81742 in 1991-92 to ₹90966 in 1994-95. Thereafter it declined to ₹83750 in 1998-99. After this period significant increase has been observed and labour productivity increased to ₹341505 in 2014-15.

Capital Productivity: From 1991-92 to 2005-06 slight fluctuation are observed in textile products but thereafter capital productivity has increased from ₹2.86 in 2006-07 to ₹3.55 in 2014-15.

***Unit Labour Cost*:** Unit Labour Cost (ULC) increased from ₹0.17 lakh in 1991-92 to ₹0.40 lakh in 2014-15.

Augmented Dickey Fuller (ADF) Tests for Stationarity

In the present study stationarity of the series is tested using ADF tests. ADF test is applied for 'textile industry - Model 1'; 'textile' group - Model 2 and 'textile products' group- Model 3. The series for three models is stationary at first difference. The results of ADF tests are given in Table 1.

Null Hypotheses: H_0: Series has unit root.

Table 1
Augmented Dickey Fuller (ADF) Unit Root Tests of Variables: At First Difference

Variables	*Time*	*Model 1*		*Model 2*		*Model 2*	
		t-statistic	*p-value*	*t-statistic*	*p-value*	*t-statistic*	*p-value*
EC	1991-92 to 2014-15	–5.76	0.0001	–9.58	0.0000	–7.35	0.0000
LP	1991-92 to 2014-15	–6.22	0.0000	–5.61	0.0002	–4.93	0.0007
CP	1991-92 to 2014-15	–7.6000	0.0000	–8.73	0.0000	–7.95	0.0000
ULC	1991-92 to 2014-15	–6.58	0.0000	–7.41	0.0000	–5.20	0.0004
ER	1991-92 to 2014-15	–5.31	0.0003	–5.31	0.0003	–5.31	0.0003
REER	1991-92 to 2014-15	–5.89	0.0001	–5.89	0.0001	–5.89	0.0001

*Indicates significant at the 1 % level of significance
Source: Calculated by author.

Since the corresponding *p*-values for all the three models i.e. Textile industry, textile group and textile products group is less than 5%. Hence the null hypothesis is rejected and can be concluded that all determinants are stationary at first difference for three models.

4. IMPACT OF DETERMINANTS ON EXPORT COMPETITIVENESS OF TEXTILE INDUSTRY

Regression Analysis

This section of the paper analyses the impact of select determinants on the export competitiveness of textile industry and its 02 groups i.e. 'textile' and 'textile products'. The results of regression analysis for three models have been calculated by taking Export Competitiveness (EC) as DV and other variables as independent variables. The values of R Square and Adjusted R Square in all the three models are high which indicates the percentage variations in dependent variables are due to other independent variables. The *p*-values are also found to be statistically significant at 5 per cent.

Table 2
Regression Analysis

Variables	*Model 1*	*Model 2*	*Model 2*
R-squared	0.840758	0.888457	0.733039
Adjusted R-squared	0.796524	0.857472	0.658883
F-statistic	19.00709	28.67441	9.885095
Prob(F-statistic)	0.000001	0.000000	0.000113

Tests for Goodness of Fit

The fit of the regression model is also checked by using Breusch-Godfrey Serial Correlation LM Test; Breusch-Pagan-Godfrey Heteroskedasticity Test and Jarque-Bera test to check the normal distribution among residuals. The results of these tests for the three models are given in Table 3.

Null hypothesis formulated to perform the tests are mentioned below:

Table 3
Tests for goodness of Fit

Tests	*Null Hypothesis*	*Model 1 p-value*	*Model 2 p-value*	*Model 3 p-value*
Breusch-Godfrey Serial Correlation LM Test	H_o: Residuals are not serially correlated.	0.90	0.24	0.89
Breusch-Pagan-Godfrey Heteroskedasticity Test	H_o: Residuals are not heteroskedastic.	0.56	0.77	0.14
Jarque-Bera test	H_o: Residuals are normally distributed.	0.34	0.69	0.06

Since the *p*-values in all the three models are less than 5 percent so null hypothesis is accepted in all the above three cases. Since all the three conditions in the regression models i.e. high R square value, no serial correlation, no heteroskedasticity and normal distribution among the residuals are satisfied. Hence we can conclude the regression model to be a good fit.

5. CONCLUSION

From the above analysis it can be concluded that growth rate of factories, number of employees and capital stock was negative in Indian textile industry and 'Textiles' group while factories and employees in 'Textile Products' group showed a positive growth rate. The positive growth rate of employees in 'Textile Products' group indicated its more employment generating potential or more labour-intensive nature of this group as compared to 'Textile' group. Gross value added (GVA) grew at slower pace in Indian textile industry and its two groups. The comparison of textile and textile products showed that growth rate of GVA in 'Textile Products' group is more than 'Textiles' group indicating better performance of 'Textile products' group. Also capital productivity in 'Textiles' group grew at a faster pace, while the growth rate of capital productivity in 'Textile Products' group was negative. On the whole, the capital productivity in Indian textile industry increased. Sharp decline in the growth rate of labour productivity and capital productivity in 'Textile Products' group is observed which appeared to be a big concern, given the fact that the global market is getting more competitive and it requires to be more productive and capital intensive.

Export competitiveness is influenced significantly with the introduction of Labour productivity (LP), Capital Productivity (CP), Unit Labour Cost (ULC), Exchange Rate (ER) and Real Effective Exchange Rate (REER). Adjusted R squared change in all the three models i.e. textile industry, 'textile' group and 'textile products' group is high indicating the influence of IDVs on DV. The regression model is also found to be fit as all the conditions of good regression model are satisfied.

References

Bheda, R. (2002). Productivity in Indian apparel industry: paradigms and paragon. *Journal of Textile and Apparel, Technology and Management*, 2 (3), 1-9.

Chakrabarty. (2014). Textile and Clothing Exports from India – An Analysis of Select Issues. A dissertation presented in part consideration for the degree of Ph.D., IIFT, New Delhi.

Dhiman, R. & Sharma, M. (2017). Export Competitiveness of Indian Textile Industry: Revealed Comparative Advantage Analysis. *International Journal of Applied Business and Economic Research, 15* (9): 295-305.

Dhiman, R. & Sharma, M. (2016). Examining the Growth Trends, Direction and Competitiveness of Indian Textile Exports in Global Trade. *Advances in Management*. (pp 193-200). Bloomsbury Publications: India. ISBN: 978-93-86349-55-2.

Dhiman, R., & Sharma, M. (2016). Textile Exports in South Asia and its determinants: A Literature Review. *Frontiers of New Era for Indian Economy*. (pp 244-251). Bharti Publications: New Delhi.

Dhiman, R., Kumar. R., Gupta, S. & Kumar. M. (2016). Recent Trends in the Bilateral Trade Engagement of India and Canada. *International Journal of Applied Business and Economic Research,* 14 (3): 229-254.

Dhiman, R., & Sharma, M. (2017). Export Competitiveness of Indian Textile Industry: Revealed Comparative Advantage Analysis. *International Journal of Applied Business and Economic Research*, 15 (9): 295-305.

Hashim, D. A. (2005). Post MFA: Making the Textile and Garment Industry Competitive. *Economic and Political Weekly*, 8, January 117- 127.

Joshi, P., Ishtiaque, S.M. and Jain, S.K. (2005). Competitiveness of Indian clothing in WTO era. *Asian Textile Journal*, pp. 66-77.

Joshi, R.N. & Singh, S.P. (2010). Estimation of total factor productivity in the Indian garment industry. *Journal of Fashion Marketing and Management: An International Journal,* 14 (1), 145-160.

Kumar, P. S. & Pillai, N. C. (1996). Technical Efficiency in the Spinning Mills of Kerala. *Productivity*, 37 (1), 117-124.

Rangrajan, K. (2005). International trade in textiles and clothing, post-MFA challenges and strategies considerations for India. *Foreign Trade Review*, 39 (4), 3-23.

Sharma, M. & Dhiman, R. (2014). Study of Post Reform Period of Indian Exports: A Review. *Review of Business & Technology Research*. 11(1), 836-841.

Sharma, M. & Dhiman, R. (2015). Determinants Affecting Indian Textile Exports: A Review. *Biz and Bytes. A Journal of Management & Technology***.** 6(2), 193-199.

Uchikawa, S. (1999). Economic reforms and foreign trade policies: case study of apparel and machine tool industries. *Economic and Political Weekly*, 34(48), 138-48.

Wang (2013). *The determinants of textile and apparel export performance in Asian countries*. A dissertation presented in part consideration for the degree of Master of Science, Iowa state University.