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Towards Studies on Current Scenario in Export and Import of Silk Goods in India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The present study an endeavor export and import silk goods data collect and analysis of annual compound growth rates. China is the biggest consumer of silk in the world next to India second consumer of raw silk and silk fabrics. The study area covers whole country. The analysis was carried out for the period from export and import of silk goods during 1985 to 2017. Compound growth rate of quantity of export silk commodities for significant was 31.66 per cent during the period I (1985-86 to 1987-88). For overall period (1985 to 2016) moderately significant growth in quantity (2.44%), but the growth of value (10.02%) was significant. In import, highest CGR was 29.39 per cent in quantity and 32.02 per cent in value during the period IV (1997-98 to 2001-02). Overall Period (1985-6 to 2016-17) revealed that, highly CGR of quantity and value. In import, the significant and CGR was Uzbekistan, Japan, Korea RP and others during the period II (2007 to 2011). The overall period (1980-81 to 2016-17) there was a negatively significant in the country like China, Brazil and Japan, while, Uzbekistan, Korea RP and Others. The study finally indicated, the significant growth of export and import in all the country *viz.* USA, HK, UK, UAE, Germany, Spain and others during from 1985-86 to 2016-17. The overall period (1985-86 to 2016-17), growth rate was found in significant like scarves, Dress materials, and others (spun silk).

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1. INTRODUCTION

India has the sole characteristic of being the only nation in the world which cultures all the five known commercial varieties of silk namely mulberry, tropical tasar, oak tasar, eri and muga [1]. In the before time period of the century, Japan was ruling the world raw silk market by producing 70 per cent of world's total production. However, in the middle seventeen years the Japanese silk production started decreased and Chinese silk production significantly raised steadily and small breach formed due to the withdrawal of Japan [2]. Currently China is the largest producer in the world silk followed by India. In India is biggest buyer of silk production in the world and constitutes about 8 per cent of global market output. India is among the emerging countries of the world, it has a favourable climatic condition which allows it to rear of silkworm. All the five commercial silk types such as mulberry silk, Eri silk, Muga silk, Oak Tasar and Tasar silk are produced by the country, but highest involvement constitutes mulberry silk. Mulberry silk is most famous and popular in five traditional states like Karnataka, Tamil Nadu, Andhra Pradesh, West Bengal and Jammu Kashmir. The mulberry silkworm is completely domesticated silk type and has achieved better profit from research on mulberry and silkworm varieties than the others. Sericulture is a cottage based industry which included both on farm and off farm activities India has wonderful potential for silk increase but yet unexploited, but growth is not far away [3]. After few decades of planning and with the establishment of central silk board Bangalore, sericulture has shown a raised trend. The present study an endeavor export and import silk goods data collect and analysis of annual compound growth rates.

2. MATERIALS AND METHODS

2.1 Growth Model

The growth in export and import like quantity and value were analyzed using the exponential growth model in the form

$$Y = a\, b^t\, e \qquad (2.1)$$

Where,

Y= Dependent variable

a = Intercept
b = Regression coefficient
t = Time variable
e = Error term

The compound growth rate was obtained from the logarithmic form of the equation (1) as below:

$$\ln Y = \ln a + t \ln b$$

The per cent compound growth rate (g) was derived using the relationship g = (Anti ln of b - 1) x100

Pattern of growth rates over the years was identified using the 'b' coefficient. If coefficient was statistically significant and positive then growth of the estimated parameters over the years was accelerating. If it was negative, it was implied that, growth was decelerating over the years.

For the assessment of way of silk export and import trade, the data about pertaining to export and import of mulberry raw silk (silk goods and silk fabrics) were collected for 30 years from 1985-86 to 2015-16.

The secondary data were collected from website www.indiastat.com and furthermore from the data support of Department of Sericulture, Tamil Nadu, Karnataka, West Bengal; CSR&TI, Mysore; KSSR&DI, Bangalore; APSSR& DI, Andhra Pradesh and Deportment of Statistics, India, Central Silk Board, Bangalore (Annual Reports, Technical Reports, Journals, Personal collections, *etc.*), Internet, CSB website. The study periods were divided into Period I (1980-81 to 1987-88), Period II (1988-89 to 1997-98), Period III (1991-92 to 1996-97) Period IV (1997-98 to 2001-02), Period V (2002-03 to 2006-07), Period VI (2007-08 to 2010-11), Period VII (2011-2015) and over all Period (1980-81 to 2016-17) for assessment of annual compound growth rates. To work out the compound growth rates of exports and imports, exponential growth functions were calculated [4,5,6,7].

3. RESULTS AND DISCUSSION

3.1 Trends in Export and Import of Silk Goods

Annual compound growth rate of export of silk goods (value in rupees and quantity in MT): Compound growth in export of Indian silk goods is presented in Table 1 The result

Table 1. Annual compound growth rate of export and import of silk goods

Details	Exports				Imports			
	Quantity(MT)		Value (Crore)		Quantity(MT)		Value (Crore)	
	CGR (%)	t-value	CGR (%)	R^2 (%)	CGR (%)	t-value	CGR (%)	R^2 (%)
Period I 1985-86 to 1987-88	31.66**	28.19	28.51**	99.02	27.71**	93.10	4.41**	72.12
Period II 1988-89 to 1997-98	3.83*	2.28	13.64**	79.33	10.44**	44.74	11.80**	60.28
Period III 1991-92 to 1996-97	4.84*	1.57	5.26*	67.81	8.96**	18.64	8.93^{NS}	30.82
Period IV 1997-98 to 2001-02	13.63**	1.71	31.45**	79.28	29.39**	83.05	32.02**	95.18
Period V 2002-03 to 2006-07	3.02*	1.44	9.50**	95.95	-10.17**	67.66	2.99^{NS}	23.11
Period VI 2007-08 to 2010-11	-2.64^{NS}	-0.40	-3.49 ^{NS}	21.88	-7.77*	72.81	-7.99^{NS}	19.53
Period VII 2011-12 to 2016-17	0.20^{NS}	0.04	-1.83 ^{NS}	6.93	11.59^{NS}	22.88	14.19^{NS}	21.62
Overall period (1985-86 to 2016-17)	2.44*	5.36	10.02**	81.33	7.69**	72.53	6.88**	81.80

***Significance at one per cent, *Significance at five per cent, NS-Non-significant*

Table 2. Country- wise import of silk goods earning (Metric tonnes)

Details	Period I (2001-02 to 2006-07)		Period II (2007-08 to 2010-11)		Period III (2011-12 to 2015-16)		Overall period IV (2001-02 to 2015-16)	
	Quantity (MT)		Quantity (MT)		Quantity (MT)		Quantity (MT)	
	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)
China RP	4.12^{NS}	15.13	-11.00 ^{NS}	75.16	-11.96**	81.04	-4.04*	57.95
Uzbekistan	33.22 ^{NS}	10.23	11.14*	87.18	-22.61 ^{NS}	55.87	-6.64 ^{NS}	5.20
Brazil	14.35 ^{NS}	13.39	-8.21**	77.49	-34.80**	69.50	-21.40**	44.03
Japan	-0.91 ^{NS}	0.01	15.53*	65.12	-65.07**	78.82	-18.30**	24.88
Korea RP	20.75^{NS}	6.83	10.93*	63.97	-68.00**	74.70	-12.90 ^{NS}	14.79
Others	-22.48^{NS}	26.77	42.03**	97.32	0.09 ^{NS}	0.0002	6.73 ^{NS}	19.90

***Significance at one per cent, *Significance at five per cent, NS-Non-significant*

Table 3. Country- wide export of silk goods earning (value in crore)

Periods	USA		HK		UK		UAE		Germany		Spain		Others	
	Value (Crore)		Value (Crore)		Value (Crore)		Value (Crore)		Value (Crore)		Value (Crore)		Value (Crore)	
	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)
Period I 1985-86 to 1987-88	-12.50^{NS}	67.24	35.89^{NS}	20.19	39.68**	99.54	30.11*	77.60	71.79**	98.90	63.75**	99.99	40.09^{NS}	66.49
Period II 1988-89 to 1997-98	18.25**	78.82	15.72*	62.88	9.70**	77.32	13.42**	79.14	7.44**	76.85	11.96**	54.38	16.92**	75.23
Period III 1991-92 to 1996-97	6.92^{NS}	47.24	0.72^{NS}	0.73	2.93*	35.22	4.23^{NS}	9.81	3.44^{NS}	45.63	15.14**	84.16	10.55**	69.77
Period IV 1997-98 to 2001-02	32.01*	69.67	-3.82^{NS}	14.23	17.28**	69.65	78.17**	85.48	5.92^{NS}	17.28	65.82*	73.14	30.36*	75.28
Period V 2002-03 to 2006-07	4.88**	65.13	-12.89^{NS}	52.48	18.63**	98.95	3.69^{NS}	6.49	7.10*	72.83	25.36**	86.57	9.43*	61.99
Period VI 2007-08 to 2010-11	-12.76*	87.79	65.21**	77.36	-9.51**	99.19	11.46*	59.88	-2.28^{NS}	5.41	-18.54^{NS}	71.57	5.39*	84.09
Period VII 2011-12 to 2016-17	-8.45*	86.70	11.42^{NS}	12.54	-11.41**	95.08	17.61**	70.40	-6.11^{NS}	35.57	-4.71*	59.50	-1.91^{NS}	7.21
Overall period (1985-86 to 2016-17)	6.45**	48.64	7.30**	51.72	7.81**	70.33	16.83**	94.59	2.69**	24.36	12.04**	68.74	20.28**	84.60

***Significance at one per cent, *Significance at five per cent, NS-Non-significant*

Table 4. Exports of variety- wise silk goods over the periods from 1977-78 to 2016-17

Periods	Saree		Scarves		Dress materials		Ready-mades		Others	
	Quantity (MT)		Quantity (MT)		Quantity (MT)		Quantity (MT)		Quantity (MT)	
	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)	CGR (%)	R^2 (%)
Period I 1985-86 to 1987-88	8.92**	86.17	0.31 ^{NS}	0.10	20.72**	96.99	14.72**	70.35	9.20**	88.89
Period II 1988-89 to 1997-98	-1.10^{NS}	1.99	2.59 ^{NS}	6.57	5.34**	74.74	4.32 ^{NS}	15.35	2.86	23.24
Period III 1991-92 to 1996-97	-3.58 ^{NS}	14.14	16.01	51.33	4.74*	54.64	4.07 ^{NS}	13.62	16.20 ^{NS}	60.00
Period IV 1997-98 to 2001-02	-1.96 ^{NS}	0.81	-18.32**	98.00	34.71*	79.93	7.16 ^{NS}	12.20	10.19**	93.95
Period V 2002-03 to 2006-07	40.92*	43.98	45.88**	94.15	-6.65 ^{NS}	21.18	-4.91 ^{NS}	2.67	11.45 ^{NS}	9.95
Period VI 2007-08 to 2010-11	-6.53 ^{NS}	7.70	-0.21 ^{NS}	0.06	-3.99 ^{NS}	69.72	-23.13**	96.21	25.67 ^{NS}	1.47
Period VII 2011-12 to 2016-17	-3.07 ^{NS}	8.09	3.78 ^{NS}	9.42	48.64 ^{NS}	40.36	10.00**	68.64	14.48 ^{NS}	66.07
Overall period (1985-86 to 2016-17)	-4.49**	48.18	6.69**	63.68	4.26**	28.18	1.70 ^{NS}	6.80	69.53**	51.75

***Significance at one per cent, *Significance at five per cent, NS-Non-significant*

indicated that, positive significant and highest compound growth rate of quantity of silk goods was 31.66 per cent during the period I (1985-86 to 1987-88). Highly significant and highest compound growth rate of value of silk goods was 31.45 per cent during the period III (1991-92 to 1996-97), respectively. During the overall period (1985-86 to 2015-16), though there was moderately significant growth in quantity (2.44%), but the growth of value (10.02%) was significant.

Annual compound growth rate of import of raw silk (Quantity in MT and Value in rupees): The CGRs of import of raw silk in terms of quantity and value are presented in Table 1 Compared with all the seven periods, positive significant and highest compound growth was 29.39 per cent in quantity and 32.02 per cent in value during the period IV (1997-98 to 2001-02). The analysis of growth rate for the overall Period (1985-6 to 2016-17) revealed that, there was a highly significant growth rate of quantity (7.69%) and value (6.88%), respectively.

Annual country- wide compound growth rate of import of raw silk (quantity in MT): The analysis of growth performance across the country-wide import of raw silk quantity term was registered non-significant against China RP, Uzbekistan, Brazil, Japan, Korea RP and others during the period I (2001-02 to 2006-07). Figures for significant growth rates were Uzbekistan (11.14%), Japan (15.53%, Korea RP (10.93% and others (42.03%) during the period II (2007-08 to 2010-11). The overall period (1980 to 2017) encountered negatively significant figures in countries like China (-4.04%, Brazil (-21.40%) and Japan (-18.30%, while, Uzbekistan (-6.64%), Korea RP (-12.90%) and Others (6.73%) was a non-significant, respectively (Table 2).

Annual country-wide compound growth rate of export of silk goods (value in rupees): The country-wide compound growth rate of export of silk goods during the 1985-86 to 2016-17 are furnished by Table 3. In USA, positive significant and highest compound growth of value of raw silk was 18.25 per cent during the periods II (1988-89 to 1997-98). The significant and highest compound growth of value of raw silk was obtained from Hong Kong (65. 21%) during the period VI (2007-08 to 2010-11). In UK, positive and highest compound growth of value of raw silk was 39.68 per cent in during the periods I (1985-86 to 1987-88). Highest compound growth of value of raw silk was UAE (78.17%) during the period VI (1997-98 to 2001-02). Positive and highest compound growth of value of raw silk was 71.79 per cent in Germany and 63.75 per cent in Spain during the period I (1985-86 to 1987-88), respectively. The growth rate found significant in all the country like USA (6.45%), HK (7.30%), UK (7.81%), UAE(16.83%), Germany (2.69%), Spain (12.04%) and others (20.28%) during from 1985-86 to 2016-17.

Annual item-wise compound growth rate of export of silk goods (Quantity in MT): The item-wise export of Indian silk goods in terms of quantity was given by Table 4. In Saree, positive significant and highest compound growth of quantity of silk fabric was 8.92 per cent in during the periods I (1985-86 to 1987-88). The significant and highest compound growth of quantity of scarves was 45.88 per cent during the period V (2002-03 to 2006-07). In Dress materials, positive and highest compound growth of quantity was 20.72 per cent in during the periods I (1985-86 to 1987-88). Highest compound growth of quantity was Ready-mades (14.72%) during the period VI (1985-86 to 1987-88). Positive and highest compound growth of quantity of others silk fabrics was 10.19 per cent during the period IV (1997-98 to 2001-02), respectively. The overall period (1985-86 to 2016-17), growth rate was found to be significant in scarves (6.69%), Dress materials (4.26%) and others (69.53%). However, there was a non-significant observation in ready-mades (1.70%) and negatively significance in saree (-4.49%).

4. CONCLUSION

Trade in agricultural commodities can play a vital role in promoting profitable growth especially in less developed countries (LDC). Compound growth rate of quantity of export silk commodities was significant (31.66 per cent) during the period I (1985-86 to 1987-88). Due to fact that period under review the World Bank assisted Karnataka Sericulture Project (KSP) and area, production and productivity of mulberry, cocoon and raw silk were significantly raised. Hence, the increases in exportsof silk commodities. For the overall period (1985-86 to 2015-16) moderately significant growth in quantity (2.44%), but the growth of value (10.02%) was significant. In import, highest compound growth was 29.39 per cent in quantity and 32.02 per cent in value during the period IV (1997-98 to 2001-02). The overall period (1980-81 to 2016-17) there was a negatively significant in the country like China, Brazil and Japan, while, Uzbekistan and Korea RP. In export, significant in all the countries like USA, HK, UK, UAE,

Germany, Spain and others during from 1985-86 to 2016-17. The overall period (1985-86 to 2016-17), growth rate was found in significant like scarves, Dress materials, and others. However, there was a non-significant record in ready-mades and negatively significant in saree.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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