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Performance Analysis of Production and Trade of Indian Silk under WTO Regime

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Performance Analysis of Production and Trade of Indian Silk under WTO Regime

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ABSTRACT

India is the second largest producer of silk and also the largest consumer of silk in the world having a strong tradition bound domestic market. In this paper, growth functions were estimated for India's aggregate production and trade parameters using annual data from 1984/85 to 2006/07. To know the temporal price efficiency between the World (China) and Domestic market (India) the co-integration test was done for the period from 1991/92 to 2004/05. The performance analysis was done considering both mulberry and non-mulberry silk sectors at all India level for two sub-periods (Pre-WTO; 1984-85 to 1994-95 and Post-WTO; 1995-96 to 2006-07). The overall growth in production of cocoon and raw silk in India exhibited a decreasing trend with moderate instability. The overall performance of non-mulberry silk was encouraging as the growth rates were positive particularly in case of Eri and Muga. The import of silk goods increased both in quantity terms and in value terms during the study period. The co-integration tests showed lack of integration implying that, there was no long run equilibrium relationship between domestic and world market prices. The analysis of trade competitiveness measures showed country does not possess competitiveness in the production of raw silk.

Key words: Mulberry, co-integration, instability index, nominal protection coefficient, WTO

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Introduction

Asia is the main producer of silk in the world and produces over 95 per cent of the total global output. Though there are over 40 countries on the world map of silk, bulk of it is produced in China and India. India is the second largest producer of silk with 18475 MT (2006-07) and also the largest consumer of silk in the world. It has a strong tradition and culture bound domestic market of silk. In India, mulberry silk is produced mainly in the states of Karnataka, Andhra Pradesh, Tamil Nadu, Jammu & Kashmir and West Bengal, while the non-mulberry silks are produced in Jharkhand, Chattisgarh, Orissa and north-eastern states. About sixty lakh persons are engaged in various sericulture activities in the country. It is estimated that sericulture can generate employment of 11 man days per kg of raw silk production (in on-farm and off-farm activities) throughout the year. This potential is *par-excellence* and no other industry generates this kind of employment, especially in rural areas, hence, sericulture is used as a tool for rural reconstruction. Sericulture also provides vibrancy to village economies where about 57 per cent of the gross value of silk fabrics flows back to the cocoon growers thus; large chunk of income goes back to the villages from the cities.

Emerging scenario

The Indian silk industry is passing through a crucial phase of reorientation and adjustment necessitated by the market forces. Therefore, at this juncture, it will be interesting to examine the extent to which different production and marketing system of the industry are capable of absorbing the changing market signals. It is also necessary to examine to what extent the output of the industry has been changing in terms of quantity and structure as a result of the changing demand patterns. This study addresses itself to some of these important issues relating to the post cocoon sector of the industry.

Against this backdrop, the present study endeavors to assess the performance of silk industry with the changing economic scenario. With the advent of WTO, the import of raw silk in India has increased. To understand this scenario in a better perspective, a comparison is made between the pre and post WTO performance of silk industry using relevant data. The study not

only throws light on various dynamics of silk industry but also helps in understanding the impact of WTO on Indian silk industry.

Methodology

A. Study period and Database

The study covers 22 years period from 1984-85 to 2006-07. Further, the study period is divided into I Period (Pre-WTO period from 1984-85 to 1994-95) and II period (Post-WTO period from 1995-96 to 2006-07) to capture the impact of WTO on the performance of silk industry in India. Time series secondary data on area, production, prices, exports and imports of silk commodities were obtained from various publications of Central Silk Board, India and FAO year books. The international reference prices of silk commodities were collected from various issues of FAO yearbooks. The freight rates for silk were obtained from Central Silk Board publications and from silk traders.

Analytical Tools and Techniques

a. Growth Model: The growth in area, production, exports and imports were analyzed using the exponential growth function.

b. Instability Analysis: In order to study the variability in area, production and export trade, an index of instability was developed as a measure of variability. The formula suggested by Cuddy and Delle Vale (1978) was used to compute the index of instability.

c. Co-integration Technique: To estimate the long run equilibrium relationship with short-term disturbances which stems from the perception of non-stationarity of macro-economic time series data defined in terms of time-variant mean and variances. Co-integration Technique was employed.

In order to test the secular relationship (integration) between domestic and international markets of raw silk, in the present study, India (domestic) and China (international), which are the two major markets, are considered for the analysis using the data from 1992/92 to 2004/05.

d. Nominal Protection Coefficient (NPC)

Nominal Protection Coefficient is a straightforward measure of competitiveness. It is calculated as a ratio between the domestic price to the international price of a comparable grade

of commodity, adjusted for all the transfer costs such as freight, insurance, handling costs, import duties, losses etc.

e. Partial Equilibrium Methods

The welfare gains or losses both to the producers and consumers were estimated using the partial equilibrium method (for details see Lutz Ernst and Scandizzo,1980).

The basic parameter needed in this evaluation was the elasticity of demand. In the present study, the demand elasticity was worked out for the study period. The world reference prices were derived from the international price, adjusted for transport and marketing and trading margins in order to make the domestic commodity comparable with the internationally traded commodity.

Major Findings

1. Growth rates in area, production, export earnings and imports of silk commodities in India

The global trade environment has put a greater onus on the countries to be competitive in their trade endeavors. Growth should be both in quantity and quality in order to capture a significant share in the world market and in production to enhance efficiency and competitiveness. In order to derive the maximum benefits from the new world environment, it is essential to properly assess the available export surpluses of silk goods in the country and to give greater emphasis to production strategy for the commodities for which the country has greater comparative advantage. Hence, growth in area, production of various silk commodities of the state as well as nation was assessed.

a. Growth in area and production of mulberry and non-mulberry silk

Mulberry silk

The overall growth in production of cocoon and raw silk in India exhibited a decreasing trend with moderate instability, which was largely due to the decrease in area (Table 1). The modest growth in production has come from productivity gain as area was coming down. The performance of growth in production of both reeling cocoons and raw silk was impressive in the pre-WTO period as it recorded 5.73 per cent and 7.30 per cent compound annual growth as a

result of area improvement. During post-WTO period, the growth rates in area (-4.85%) and production of reeling cocoons (0.65%) and raw silk (1.67%) showed decreasing trend compared to pre-WTO period. Silk production crisis in the country could be linked to issues like decreasing prices, rising cost of production, hike in use of pesticides with inadequate pest suppression, inability to enhance production due to water scarcity and improper water management, besides export of raw silk by China to India has also contributed to this situation.

All these indicators point out the fact that, the sericulture sector has been under stress in recent years and hence needs vitalization at the earliest. The process of WTO *per se* might not have contributed significantly towards the decline of the industry, but the fact that an important export-oriented commodity is being neglected on the policy front despite clear signals has been reflected in the performance parameters.

Non-Mulberry silk

India, the second largest producer of silk in the world, has unique distinction of being the only country producing all the four commercially known varieties of silk *viz.*, mulberry, tasar, eri and muga. The muga silk produced extensively in the state of Assam is India's monopoly. India has a considerable wealth of non-mulberry silk (Wild silk) spread over to the hilly tracks of Bihar, Orissa, Madhya Pradesh, Andhra Pradesh, West Bengal and Maharashtra states.

The overall performance of non-mulberry (Table 2) is encouraging as the growth rates are positive and moderate particularly in case of Eri and Muga. The performance of production in post-WTO period was impressive in all the three varieties with moderate instability. The reasons for the declining trend over a period of time in case of tasar (both cocoon and raw silk) may be attributed to the non-availability of disease-free-laying (DFLs) and decrease in the forest area or production area. The non-mulberry scenario in the country has undergone sea changes in the twenty-years period. The production of reeling cocoons and raw silk were fluctuating over the years with moderate to high instability.

b. Growth rates in exports and imports

Growth in exports

There has been appreciable increase in agricultural exports after WTO and consequent initiation of economic reforms. This has been largely attributed to devaluation of the Indian

rupee and other trade liberalization measures, which led to the elimination of many structural constraints operating on the demand as well as supply side, which were slowing down export growth (Ramakrishna *et al.*, 2002). As opined by Gulati (2002) and Chand (2004) from 1997 onwards the collapse of world prices of most of the agricultural commodities in the wake of East Asian crisis encouraged Indian agricultural exports, which include silk goods also.

India exports substantial quantum of silk goods and the value of these silk goods is estimated at about 25 per cent of the total raw silk production. India's export consists exclusively of Dress Materials, Readymade Garments, Sarees and Made-up articles for interior decoration (e.g. Bed spreads, Cushion covers, Curtains and Carpets etc.). India's export has satisfactorily progressed during the study period with both quantity and value of export showing high and significant growth and this has been achieved mainly from increased growth observed during post-WTO period (Table 3). This increased growth has also accompanied by higher instability. India's export trade is highly concentrated with the 10 leading buyers around the world *viz.*, USA, UK, Hong Kong, German People Republic, Italy, France, Spain, Saudi Arabia, UAE and Singapore. The share of total Indian exports to these countries is around 80 per cent.

Growth in Imports

While India exported small to moderate quantity of silk, imports have become a regular feature. The growth rates of silk imports showed an increasing trend (Table 4). The import of silk goods in quantity terms increased at a compound growth rate of 9.82 per cent per annum with instability of 31.96 per cent, while the value registered a compound growth rate of 14.83 per cent with instability of 44.23 per cent during the study period. In the pre-WTO period, silk imports in quantity terms have increased at a compound growth rate of 13.69 per cent and 30.12 per cent in value terms. Similarly during post-WTO period, imports have increased at a compound growth rate of 15.10 per cent in quantity and 8.90 per cent in value. The main reason for this could be stagnant production of silk in the country. Moreover, weavers prefer imported raw silk as it is cheaper and also has good quality. And also increase in the domestic demand due to change in preferences of consumer to various value added silk products.

c. Secular (integration) relationship between domestic market and international market prices of silk goods

The results of the co-integration tests showed lack of integration between domestic and world prices, (Which is intrinsic to WTO) in case of raw silk (Table 5 and 6). It implies that, there was no long run equilibrium relationship between domestic and world market prices. It is evident from the result, that a large proportion of silk and silk goods produced was sold in the domestic market itself. There was no significant influence of world prices on the domestic market.

China and Indian silk markets were not co-integrated over the long-term there by not validating the law of one price. This means that, China and India produce different forms of the same product in an economic sense, indicating that there are major distortions in the processing and marketing links between the raw material and the final product.

d. Export competitiveness of Indian raw silk

Competitiveness has been studied by choosing a fairly long period, which covers full range of international prices from 1985-86 to 2004-05. Export competitiveness of raw silk was studied for country after world price was adjusted for domestic costs, NPC under importable hypothesis for India turned out to be around 2.11 during 1985-86 to 1994-95 (Table 7). Subsequently, the gap between domestic and international prices reduced and NPC for the country decreased to 1.30 during 1995-96 to 2004-05 (Table 8). The NPC shows that, disprotection to raw silk because of export restrictions were banished in recent years. The results of trade competitiveness measures indicated that, country does not possess competitiveness in the production of raw silk. This result supports the findings of Gulati (2002). The WTO did not contribute to Indian export competitiveness particularly in case of silk goods (raw silk) is proved beyond doubt.

e. Welfare gain and welfare losses

In order to assess the impact of WTO in sericulture industry on the producers and consumers, an analysis was carried out for the period 2004-05. These are computed based on the elasticities and the estimated nominal protection coefficients. The demand elasticity used for the analysis was 0.29 for mulberry raw silk. It is also assumed that whatever amount produced would be consumed in the country.

The monetary effects of price distortions clearly indicated that the net social losses in production and consumption critically depend on the extent of protection and on the elasticities (Table 9). The net social loss in production of raw silk was higher (Rs.2240.32) under existing WTO provisions. Whereas net social loss in consumption was Rs. 95.50.

At present the share of China in the world silk production stands first followed by India. In coming years, India is expected to dominate the world textile or silk trade. It can be improved by means of reducing the import share, lifting the domestic production; export restrictions and modifying foreign trade policy.

Policy Implications

Many studies in the past have shown high expectation from silk sector in terms of generation of employment and income. Further, the industry has a strong equity orientation as large number of landless labourers, marginal and small farmers constituting around 85 per cent of the total sericulturists depend on this industry for their livelihood and cash requirement. In the non-farm sector a large number of urban poor are also engaged in silk reeling activities. More importantly the money is being transferred indirectly from rich to the poor in the sense that a majority of the silk products are used by richer section of the society as silk products are costly where as the cocoon growers and raw silk makers are from the poorer section of the society. Thus, sericulture industry has its own significance in country like India where income inequality is high

- The silk industry in the country is showing a dismal performance in the post WTO period. This profile of performance can be treated as warning signal for the industry because if the industry starts declining at this rate, it will be difficult to revive the industry in the near future. Therefore, there is a need for appropriate policy intervention to remove the clogs in the system to make it more vibrant in the changed context of WTO regime.
- The declining trend of area under mulberry is a clear signal emanating from the near stagnant or decreasing prices of primary products like silk cocoons and raw silk in the country. The sliding down in the growth of silk industry has to be prevented and it should be vitalized with new growth impetus so as to increase its contribution to the economy.

- In view of dismantling of quantitative restrictions on textile exports, India stands to gain substantially. In order to be competitive in the world market, it is imperative to ensure adequate domestic production of high quality long staple silk yarn, which will also overcome the present quality problems, which are coming in the way of enhancing Indian silk exports.
- Export competitiveness should be enhanced through increased productivity and quality.
- To increase production and exports there is a need to expand production and income enhancing support to the silk industry.

References

CHAND, R., (2004), Emphasizing on modernization, *The Hindu Survey of Indian Agriculture*, Chennai, pp 77-80

CUDDY AND DELLE VALE., (1978), Measuring the instability of time series data, *Oxford Bulletin of Economics and Statistics*

GULATI, A., (2002), Indian agriculture in a globalizing world, *American Journal of Agricultural Economics*, **84** (3): 754-761

LUTZ ERNST AND SCANDIZZO, P., (1980), Price distortions in developing countries: A bias against agriculture, *European Review of Agricultural Economics*, **7**(1): 5-27.

RAMAKRISHNA, G., SIVARAMA KRISHNAN, V. AND SUKAR ABDULHAMID.,(2002), Impact of globalization on growth, poverty and income inequality: A study of Ethiopia and India, *Asian Economic Review*, **45** (2): 326-341

Table 1: Growth rates of area and production of mulberry reeling cocoons and raw silk in India

Description	Intercept	Slope	R Square	t value	Growth Rate (%)	Instability Index (%)
I period (1985/86-1994/95)						
Area (Ha)	12.30	0.0431 (0.0107)	0.6685	4.02	4.41*	8.90
Reeling Cocoons (Tonnes)	11.24	0.0557 (0.0081)	0.8546	6.86	5.73*	6.71
Raw silk (Tonnes)	8.85	0.0701 (0.0070)	0.9259	9.99	7.3*	5.72
II period (1995/96-2006/07)						
Area (Ha)	12.64	-0.0497 (0.0059)	0.8764	-8.42	-4.85*	6.47
Reeling Cocoons (Tonnes)	11.69	0.0065 (0.0046)	0.1660	1.41	0.65	5.10
Raw silk (Tonnes)	9.47	0.0165 (0.0038)	0.6566	4.37	1.67*	4.16
Overall period (1985/86-2006/07)						
Area (Ha)	12.65	-0.0198 (0.0057)	0.3747	-3.46	-1.96*	15.88
Reeling Cocoons (Tonnes)	11.43	0.0193 (0.0034)	0.6131	5.63	1.95*	8.82
Raw silk (Tonnes)	9.05	0.0322 (0.0034)	0.8147	9.38	3.27*	8.64

Note : * Significant at 1 per cent level

: ** Significant at 5 per cent level

: Figures in parentheses denote standard error

Table 2: Growth rates in production of cocoons and raw silk of non-mulberry silk

Particulars	I Period (1985/86-1994/95)						II Period (1995/96-2006/07)						Overall period (1985/86-2006/07)					
	Cocoons			Raw silk			Cocoons			Raw silk			Cocoons			Raw silk		
	Tasar	Eri	Muga	Tasar	Eri	Muga	Tasar	Eri	Muga	Tasar	Eri	Muga	Tasar	Eri	Muga	Tasar	Eri	Muga
Intercept	6.14	6.34	3.17	6.32	5.89	8.87	5.24	7.14	3.53	5.33	6.58	4.21	6.07	6.57	3.25	6.04	6.01	3.88
Slope	-0.0288 (0.0149)	0.0926 (0.0098)	0.0515 (0.0181)	-0.0665 (0.0135)	0.0874 (0.0092)	0.0437 (0.0129)	0.0394 (0.0136)	0.0349 (0.0046)	0.0413 (0.0078)	0.0399 (0.0106)	0.0659 (0.0042)	0.0467 (0.0093)	-0.0295 (0.0084)	0.0494 (0.0040)	0.0345 (0.0044)	-0.0245 (0.0078)	0.0621 (0.0029)	0.0391 (0.0037)
R square	0.3183	0.9164	0.50	0.7500	0.9179	0.5895	0.4576	0.8538	0.7368	0.5882	0.9603	0.7171	0.3834	0.8847	0.7547	0.3323	0.9587	0.8462
t value	-1.93	9.37	2.84	-4.89	9.46	3.39	2.90	7.64	5.29	3.78	15.56	5.03	-3.52	12.39	7.85	-3.15	21.55	10.49
Growth rate (%)	-2.84	9.70*	5.3*	-6.43*	9.13*	4.5*	4.02**	3.55*	4.22*	4.07*	6.82*	4.78*	-2.90*	5.07*	3.51*	-2.42*	6.41*	3.99*
Instability Index (%)	12.2	7.62	15.25	11.34	7.2	10.83	14.45	4.92	8.12	11.27	4.46	9.44	22.81	9.85	11.83	22.68	7.71	10.39

Note: * Significant at 1 per cent level

: ** Significant at 5 per cent level and figures in parentheses denote standard error

Table 3: Growth rates in export of silk commodities

Particulars	I Period (1985/86-1994/95)					II Period (1995/96-2004/05)					Overall period (1985/86-2004/05)				
	Silk goods		Silk waste		Total Value	Silk goods		Silk waste		Total Value	Silk goods		Silk waste		Total Value
	Qty	Value	Qty	Value	Value	Qty	Value	Qty	Value	Value	Qty	Value	Qty	Value	Value
Intercept	5.32	4.93	1.35	0.31	4.94	5.73	6.58	1.10	1.77	6.59	5.20	5.21	0.82	0.47	5.22
Slope	0.0983 (0.0139)	0.1999 (0.0096)	-0.0423 (0.0892)	0.1448 (0.0674)	0.1995 (0.0098)	0.1979 (0.0288)	0.1420 (0.0148)	0.1057 (0.1131)	0.0963 (0.1250)	0.1411 (0.0148)	0.1089 (0.0109)	0.1408 (0.0663)	0.0579 (0.0373)	0.1163 (0.0379)	0.1408 (0.0063)
R square	0.8621	0.9815	0.0272	0.3657	0.9807	0.8545	0.9018	0.0803	0.0560	0.9011	0.8472	0.9614	0.1071	0.3196	0.9618
t value	7.07	20.62	-0.4737	2.14	20.20	6.85	9.58	0.94	0.77	9.55	9.99	22.23	1.55	3.06	22.44
Growth rate (%)	10.33*	12.13*	-4.14	15.6**	22.1*	21.9*	15.25*	11.14	10.11	15.14*	11.51*	15.12*	5.93	12.33	15.12*
Instability Index (%)	11.64	7.53	66.9	45.7	7.65	21.6	13.29	61.03	70.83	13.72	30.6	15.18	75.74	88.79	15.07

Note: * Significant at 1 per cent level

: ** Significant at 5 per cent level

: Figures in parenthesis denote standard error

Table 4: Growth rates of import of silk goods

Description	Intercept	Slope	R Square	t value	Growth Rate (%)	Instability Index (%)
I period (1985/86-1994/95)						
Quantity (Tonnes)	13.92	0.1283 (0.0367)	0.6033	3.488	13.69*	37.76
Value (Rs.)	19.20	0.2632 (0.0175)	0.9657	15.02	30.12*	15.40
II period (1995/96-2004/05)						
Quantity (Tonnes)	14.66	0.1406 (0.0311)	0.7187	4.52	15.10*	25.21
Value (Rs.)	21.44	0.0852 (0.0756)	0.1371	1.02	8.90*	47.78
Overall period (1985/86-2004/05)						
Quantity (Tonnes)	14.04	0.0936 (0.0126)	0.7532	7.42	9.82*	31.96
Value (Rs.)	19.83	0.1383 (0.0216)	0.6955	6.41	14.83*	44.23

Note: * Significant at 1 per cent level

: ** Significant at 5 per cent level

: Figures in parentheses denote standard error

Table 5: Test for stationary of domestic and international price series

Sl. NO.	Price series	Order of integration	Augmented Dickey Fuller (ADF) Value	Dickey fuller 10% critical value
Raw silk				
A	International Market (China)	1	-2.80	-2.57
B	Domestic Market (India)	0	-2.66	-2.57

Table 6: Test for integration of markets

Sl. No.	Country	Augmented Dickey Fuller (ADF) value	Dickey Fuller 10% critical value	CRDW Value
Raw silk				
	International- Domestic Market	-2.058	-2.57	0.954

Note: For CRDW test, critical value at 10 per cent is 0.386

Domestic market - India

International market - China

Table 7: Nominal Protection Coefficients (NPC) for silk commodities
(Raw silk) under importable hypothesis (Pre-WTO period)

Particulars	Place	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
FOB price	China	202.52	199.51	212.08	326.72	532.04	546.59	503.99	695.38	472.13	551.84
Plus freight from Liverpool to India		0.14	0.16	0.22	0.26	0.38	0.49	0.41	0.54	0.68	0.72
Plus insurance @1% of price		2.02	1.99	2.12	3.26	5.32	5.46	5.04	6.95	4.72	5.52
Plus customs @ 5% of price		10.12	9.97	10.60	16.33	26.60	27.33	25.20	34.77	23.61	27.59
Equals CIF price		215.33	212.13	225.5	347.39	565.7	581.18	535.88	739.38	502	586.75
Import Duty		0	0	0	0	0	0	0	0	0	0
Transport Cost		0.825	0.859	0.786	0.80	0.835	0.856	0.90	0.90	0.925	0.957
C&F handling charge		0.82	0.86	0.78	0.80	0.83	0.86	0.90	0.90	0.92	0.96
Wharfage charge		0.031	0.035	0.036	0.04	0.04	0.05	0.054	0.058	0.06	0.061
Service Charge		0.02	0.02	0.023	0.024	0.025	0.027	0.03	0.03	0.03	0.032
Service Tax		0.0016	0.0016	0.0018	0.0020	0.0020	0.0022	0.0023	0.0024	0.0024	0.0026
Equals landed cost		216.49	213.35	226.71	348.67	567.13	582.77	537.45	741.11	503.92	588.76
Reference price		216.49	213.35	226.71	348.67	567.13	582.77	537.45	741.11	503.92	588.76
Domestic price		522.00	564.50	645.50	813.66	843.33	937.50	1384.16	1066.66	957.33	1080.83
NPC		2.41	2.64	2.85	2.33	1.48	1.60	2.57	1.43	1.89	1.83
Average		2.11									

Table 8: Nominal Protection Coefficients (NPC) for silk commodities (Raw silk) under importable hypothesis (Post-WTO period)

Particulars	Place	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
FOB price China	Liverpool	749.07	463.99	590.07	538.42	469.32	551.80	555.38	436.42	436.47	491.99
Plus freight from liverpool to India		0.71	0.74	0.71	0.43	0.51	0.41	0.42	0.43	0.44	0.42
Plus insurance @1% of price		7.49	4.64	5.90	5.38	4.693	5.52	5.55	4.36	4.36	4.92
Plus custom cess@ 5% of price		37.45	23.20	29.50	26.92	23.46	27.59	27.77	21.82	21.82	24.61
Equals CIF price		796.46	493.35	627.4	572.48	499.02	586.71	590.52	464.03	464.09	523.12
Import Duty		0	233.12	2	-	-	-	-	-		-
Transport Cost		0.975	0.985	1	1.01	1.02	1.04	1.06	1.07	1.07	1.08
C&F handling charge		0.97	0.98	1.00	1.01	1.04	1.06	1.07	1.07	1.08	1.09
Wharfage charge		0.062	0.064	0.07	0.07	0.072	0.072	0.073	0.073	0.074	0.075
Service Charge		0.034	0.036	0.038	0.039	0.04	0.04	0.05	0.05	0.060	0.06
Service Tax		0.0028	0.0029	0.0030	0.1131	0.0032	0.0032	0.0036	0.0036	0.004	0.004
Equals landed cost		798.49	728.56	925.69	941.46	821.27	1023.62	971.21	705.99	665.8	750.13
Reference price		798.49	728.56	925.69	941.46	821.27	1023.62	971.21	705.99	665.8	750.13
Domestic price		1183.3	1300.13	1200.00	1126.00	1015.00	1116.00	1061.00	805.00	984.00	915.00
NPC		1.48	1.78	1.29	1.19	1.23	1.09	1.09	1.14	1.47	1.29
Average		1.30									

Table 9: Net monetary effects of price distortion of raw silk production in Indian silk industry.

Sl. No.	Commodity	NSLp (Rs.)	NSLc (Rs.)	NSL (Rs.)	WGP (Rs in lakhs)	WGC (Rs in lakhs)	L on WC (Rs in lakhs)
1	Raw Silk	2,240.32	95.50	2,335.82	18,172.64	774.86	173,97.80

NSLp= Net social loss in production

NSLc= Net social loss in consumption

NSL= Net social loss

WGP= Estimated welfare gain of producers

WGC= Estimated welfare loss of consumers

L on WC = Net effect of trade on the welfare in the country