Volume : 3 | Issue : 3 | March 2014 • ISSN No 2277 - 8160

Research Paper | Management

Structural Change in India: The Impact of Technology on The Textile Industry

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ABSTRACT

This paper mainly focuses on technological changes and its impact on Indian textile industry. This paper covers four segments of Indian textile industry i.e. Spinning, Weaving, Processing and garmenting. The paper examines Technological changes in these segments and their performance in the economy and benefits of the Technology Up gradation Fund Scheme (TUFS) availed by the various sectors of Indian textile industry in the last decade. Results show that the textile industry requires more investment for modernisation and technology up gradation.

KEYWORDS : Structural Change, Textile Industry, Technology

Introduction

Structural change refers to change in the structure of the economy. Structural changes in an economy consists of change in composition of output, change in trade, change in technology, change in education, and change in employment. An economic condition occurs due to changes in the function and operation of industry or market changes. Structural change of an economy refers to a long term macro level shift in the fundamental structure of an economic system. For example, a Agricultural economy is transformed into a manufacturing economy. The current structural change in the world market is globalization.

Fisher (1939) and Clark (1940) look at patterns of change in sectoral employment. The logic of their arguments was such that patterns of production is function of the level of income and that resource and production shifts are an integral part of development. The major determinant of these shifts is the income elasticity of demand. Goods or sectors for which there is a high income elasticity of demand will grow in importance as income grows. Countries start with their production dominated by primary production, then secondary activities start to dominate and finally the tertiary sector dominates. The role of technical progress is crucial in the process of structural change as suggested by Paolo Leon (1967) and Luigi Pasinetti (1981).

Structural change can be initiated by policy decisions or permanent changes in resources, population or the society. The downfall of communism, for example, is a political change that has had far-reaching implications on the economies dependent on the state-run Soviet economy. Structural change in the economy involves changes in the employment structure also.

As an economy grows it will undergo some structural changes. The composition of its GDP and structure of employment will change. This has been the experience of all the developed and developing economies. Indian economy also has been experiencing this structural change. In the current phase of globalisation, changes in technology and policy have led to vertical disintegration of production in many industries. Structural change in the global economy is increasingly related to functional and spatial fragmentation of production and consumption and their reintegration through trade. Consequently, trade in intermediate goods has grown faster than in final goods (Sturgeon and Memedovic, 2010).

Indian textile industry

India's textiles and clothing industry is very important sector and chief support to national economy. It is also one of the largest contributing sectors of India's exports worldwide. The report of the Working Group constituted by the Planning Commission says that the India's exports of Textiles and Clothing would be at USD 64.41 billion by the end of March, 2017. The textiles industry accounts for 14% of industrial production, which is 4% of GDP; employs 45 million people and accounts for nearly 11% share of the country's total exports basket. India is major exporting country as far as textile sector is concerned and not dependent on import. Majority of import takes place for re-export or special requirement.

Exports of textiles and clothing products from India have increased steadily over the last few years, particularly after 2004 when textiles exports quota stood discontinued. India's Textiles & Clothing (T&C) exports registered a robust growth of 25% in 2005-06, recording a growth of US$ 3.5 billion over 2004-05 in value terms thereby reaching a level of US$ 17.52 billion and the growth continued in 2006-07 with Textile and clothing exports of US$19.15 billion recording a increase of 9.28% over the previous year and reached USD 22.15 billion in 2007-08 denoting an increase of 15.7% but declined by over 5% in 2008-09. Exports of Textiles & Clothing grew from USD 21.22 billion in 2008-09 to USD 22.41 billion in 2009-10 and has touched USD 27.47 billion in 2010-11. In the financial year 2011-12(P), exports of textiles and clothing, has grown by 20.05% over the financial year 2010-11 to touch USD 33.31 billion.

Review of literature

Nuimuddin chowdhary (1977) found that Structural change includes size of firm in the industry, technology, product specialization, and trend of quality - mix of cloth output and his findings show that the Industry's capacity is less than required, thus more economic average firm size, composite mills should be rehabilitated. Yoginder.K.Alagh (1987) Industrial economy is now showing greater impact on structural change as compared to earlier periods there is a relatively faster and a relatively slower rate of growth of large number of industries. Sushil Khanna (1989) explores that the low and declining cost of textile machinery in India has a capital-saving possibility to organised and unorganised sectors of Indian textile Industry. Low purchasing power of people made the demand extremely price sensitive. Tirthankar Roy (1998) revealed that in coming next ten years, the textile industry will be changing under progressive liberalisation of world trade.

Objectives of the study

The objectives of the study are as follows:

1. To study the variables of structural change of Indian economy.
2. To study the impact of change in technology on Indian textile industry.

Results and Discussion

Indian textile industry is composed of Spinning sector, weaving sector, Processing sector, Garmenting sector.

1. Spinning sector –

Spinning is the process through which conversion of cotton into yarn takes place for weaving. Spinning sector consists of two major segments, i.e. composite mills and independent mills. The tenth plan has projected a growth rate of 5.5% for production of yarn in which cotton yarn production is expected to grow by 5% and manmade fibre yarn by 6.3%.according to annual report of ministry of textile 2010-11 the spinning technology is urgently required to be upgraded through improved equipments and machineries. The Technology Up gradation Fund Scheme (TUFS) was commissioned on 01.04.1999 initially for a period of 5 years with a view to facilitate the modernization and upgradation of the textiles industry by providing credit at reduced rates to

the entrepreneurs both in the organized and the unorganized sector. The Scheme provides a comprehensive service package from deburring to carding & spinning stage. The overview of Indian textile industry along with installed capacity of textile units is given below;

Table: 1. Overview of Indian Textile industry

Items	2009-10 (units)	2010-11(units)	2011-12 (provisional) (units)
Spinning Mills (Non-SSI)	1673	1757	1761
Composite Mills (Non-SSI)	180	183	196
Weaving Mills (Non-SSI)	183	174	173

Source: Ministry of textiles

Figure: 1. Overview of Indian Textile industry

Source: Ministry of textiles

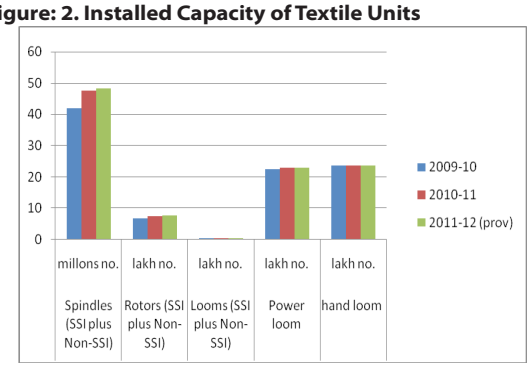
According to Ministry of Textiles, there were 1673 spinning mills (Non-SSI) in the year 2009-10, which increased to 1757 in the year 2010-11, and provisionally increased to1761 in the year 2011-12; composite mills (non-SSI) were 180 in 2009-10, increased to 183 in 2010-11 and provisionally increased to 196 in 2011-12; and weaving mills were 183 in 2009-10, 174 in 2010-11, and provisionally decreased to 173 in 2011-12.

Table: 2. Installed Capacity of Textile Units

Items	Units	2009-10	2010-11	2011-12 (provisional)
Spindles (SSI plus Non-SSI)	Millions no.	42.04	47.57	48.25
Rotors (SSI plus Non-SSI)	lakh no.	6.74	7.49	7.71
Looms (SSI plus Non-SSI)	lakh no.	0.57	0.52	0.52
Power loom	lakh no.	22.46	22.92	22.98
hand loom	lakh no.	23.77	23.77	23.77

Source: ministry of textiles (Year)

Figure: 2. Installed Capacity of Textile Units



Source: Ministry of textiles

It is clear from the table 2 that, there were 42.04 Millions spindles (SSI plus Non-SSI) installed in the year 2009-10 which increased to 47.05 Millions and 48.05 Millions in 2010-11 and 2011-12.6.74 lakhs Rotors (SSI plus Non-SSI) installed in the year 2009-10 ,7.49 lakhs in 2010-11 and 7.71 lakhs in 2011-12.Looms of organised sector are decreased from 0.57 lakhs to 0.52 lakhs from years 2010-11 to 2011-12.Power Looms increased from 22.46 lakhs in the year 2009-10 to 22.92 lakhs and 22.98 lakhs in 2010-11 and 2011-12.The installed capacity of Handlooms is constant for three year to 23.77 lakhs.

2. Weaving sector

India's weaving and knitting sector remains highly fragmented, small-scale, and labour-intensive. This sector consists of about 23.77 lakhs handlooms, 22.92 lakhs powerloom enterprises that operate about .52 lakhs looms. Weaving sector has not performed well due to technological constraints in textile industry.

3. Processing sector

Processing sector is also called as fabric finishing sector which may include printing etc.According to Annual report 2010-11 ministry of textiles the textile-processing segment of the Indian textile industry is highly fragmented and can be broadly divided into four segments:(i) Hand processing units.(ii) Hand processing units with certain exempted power processes.(iii) Independent power processing units.(iv) Processing facilities attached to composite or semi-composite mills.New technologies such as electro-chemical technology, plasma technology, nano technology and sono chemical technology are introduced for better performance of processing segment.

4. Garmenting sector

There is a great potential in Indian garmenting segment of textile industry, increasing purchasing power within the country leads to high growth in readymade garments. India has a 3.28% share in world clothing trade. Over 40% of the India's textile exports consist of apparel. According to the annual report of RBI the garmenting, technical textiles and processing segments of the textiles industry have great potential to add value and generate employment.

Conclusion

Structural change includes various aspects like –change in output, change in technology, change in import structure, and change in export structure. Globalisation is the current structural change in the world market, with the rapid globalisation textile industry requires new technologies for competing in international market. Fashion is also changing very fast in garmenting sector of Indian Textiles.Indian textile industry requires more attention towards technology front. According to Twelfth Five Year Plan the major challenges faced by the textiles processing are availability of water, effluent treatment and disposal of the treated water and solid effluents. The benefits of the Technology Up gradation Fund Scheme (TUFS), have mainly been availed by the Spinning and Composite Sectors. While investments in the spinning sector may be required to ensure yarn availability and domestic value addition of cotton, it is also important to promote forward integration. . A study by CRISIL has recommended that the interest subsidy for spinning should be allowed only when it is accompanied by matching investments in weaving or knitting. Investment for technology up gradation in the downstream segments of weaving and processing is necessary to ensure that maximum quantity of yarn produced in the country is converted into spinning products domestically.

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