Summary and Conclusions
6.1 Introduction

The present study attempts to assess the impact of policy shift on growth, production function, technical efficiency and sources of productivity growth in Indian textile industry. The entire analysis was based on the secondary data collected from the various issues of Annual Survey of Industries, published by Central Statistical Organisation, Government of India.

6.2 Statement of the Problem

The policy makers, planners, administrators and Economists are of the strong view that liberalization would usher in growth, productivity gains, structural change and efficiency improvement in the various sectors of the economy especially in the industrial sector. With this strong conviction in mind, New Economic Policies were introduced in the Indian economy in a massive scale in the year 1991 and are still being continued with renewed vigor and enthusiasm.

The conventional wisdom in favour of Economic Liberalization is that the latter can lead to significant gains in productivity and efficiency. This view has, however, been challenged by the new theories of endogenous growth.

The new growth theories do allow for the possibility that economic reforms may bring about a permanent change in productivity growth. However, the theoretical literature does not yield an unambiguous prediction on the direction of the change (surveys by Rodrik 1988 and 1992, and Tybout 1992). Given this ambiguity, the impact of economic liberalisation policies on productivity growth is ultimately becomes an empirical question.

In June, 1985, Government of India announced a new textile policy regarding creation or contraction of capacities by units in order to increase competition and promote healthy growth. But the studies of Nagaraj (2003 and 2008), Balakrishnan and Sureshbabu (2003) reported that the textile industry’s growth declined during post-reform period.

Further, on January 1, 2005, the Multi-Fibre Agreement (MFA) was completely phased out leading to manifold increase in competition. One of the main factor determining competitiveness would be unit cost, where India has fared poorly in the recent past, and it depends upon factor prices, technical efficiency and productivity levels.

Thus it is evident that the available empirical studies were not categorical regarding the impact of textile policies on Growth, Technical Efficiency and Productivity Growth of the Textile Industry.

Hence, a comprehensive analysis of the existing scenario in terms of Growth, Production Function, Technical Efficiency and Productivity growth of Indian Textile Industries during pre and post-liberalisation period has been embarked upon to answer the following questions.

6.3 Research Questions Raised

1. What are the present theoretical postulates relating to Growth, Technical Efficiency and Productivity Growth?
2. What was the extent of Growth, Technical Efficiency and Source of Productivity Growth in a protected environment?
3. Is there any major shift in these parameters in a liberalised regime?
4. In which regime are the Indian textile industries able to record healthier productivity gains?
5. In the context of widespread technical collaborations after economic reforms, is there any significant improvement in technical progress and technical efficiency change in this industry?

6. Is there any significant impact in productivity gains after the removal of Multi-Fibre Agreement (MFA)?

7. Which theory the thesis proposes to uphold, reject or modify?

6.4 Objectives

This study has been undertaken with reference to the following objectives:

1. To trace the theoretical postulates relating to Growth, Productivity, Technical Progress and Technical Efficiency in Indian Textile Industry,

2. To study inter and intra product group Growth and Structural Break in Growth Acceleration/Deceleration during Pre and Post-reform and Post-MFA Regimes,

3. To analyse Maximum Likelihood Estimates of the Stochastic Production Frontier during all the sub periods,

4. To analyse the distribution of the Technical Inefficiency Effects and appropriateness of the Functional Form,

5. To study Technical Efficiency and Returns to Scale during the above periods,

6. To Decompose total Factor Productivity Growth and

7. To study the Sources of Productivity Growth during Pre and Post-reform and Post-MFA regime.

Since the previous chapters have already elaborated the findings and inferences drawn at appropriate places, this section presents only the major highlights of the study:

6.5 Growth Acceleration/Deceleration and Structural Break during Pre and Post-Reform and Post-MFA Regime

✓ Over the entire period of 29 years commencing from 1980-81 to 2008-09, number of factories grew at an average rate of 2 per cent per annum with a negligible acceleration over time.
The growth rate of gross fixed capital formation was 6 per cent during the period of analysis. Regarding acceleration, even though \( \beta_2 \) is positive we could not draw any inference because \( \beta_2 \) is not statistically significant.

In case of employment, \( \beta_1 \) (growth co-efficient) is negative and \( \beta_2 \) (acceleration co-efficient) is positive and both are statistically significant at 1 per cent level, implying 3 per cent de-growth in employment over time. The acceleration in the de-growth in employment was about 0.16 per cent. Since the parameter which signifies the acceleration in the trend growth is statistically highly significant it is to be inferred that the reduction in employment was deliberate.

Further, it is to be noted that our results fully concurs with the results reported by (Kannan and Raveendran, 2009) and supports the hypothesis of jobless growth in Indian manufacturing with reference to textile industry.

Regarding output, the average annual trend growth was positive at 2 per cent with significant acceleration of 0.15 per cent over time.

One interesting feature noticed in the growth analysis of output is that the trend growth parameter (\( \beta_1 \)) was significant only in 4 product groups but the growth acceleration parameter (\( \beta_2 \)) was significant in 7 out of 9 product groups which led us to infer that eventhough the trend growth was not categorical, the growth acceleration was definite and therefore the emerging conclusion is that the textile industry has recorded a moderate growth acceleration in output during the period of analysis.

The average annual trend growth in number of factories at the aggregate and product group level witnessed wide variations.

Further, it is evident that the intra-industry growth rates had fluctuated with in a small range in a protected environment indicating balanced growth in the establishment of new units.

The growth scenario did not alter much during the period of economic reform also recording a meagre growth rate of just 1.00 per cent. Across the product groups, the growth parameter was statistically significant in all product groups implying that the growth rates were significant.
✓ Surprisingly, during the post-MFA regime, growth of number of factories in the industry witnessed a significant growth of 5.4 per cent per annum.

✓ Uniform intra-industry growth surfaced during post-reform period magnified into an unbalanced growth during post-MFA period because of phasing out of MFA and ensuing competition.

✓ The chow test also confirms that the parameters of pre and post-reform growth estimates are significantly different at the aggregate level as well as in six product groups, which confirms that the growth during post-reform period is more stabilized and firmly footed.

✓ The rate of capital accumulation was very impressive in all the above six product groups in the sense that their growth rates were higher than industry’s growth rate during post-reform period. However the inter product group growth rates varied widely indicating unequal capital intensification.

✓ The rate of capital intensification as evidenced by $\beta_1$ appears to be more uniform and balanced across different product groups since the inter product variations were much less during the second period.

✓ Post-MFA regime appears to be the real liberalized regime as far as textile industry is concerned, since the growth rates of all the product groups were in double digit and 8 out of 9 product groups clocked growth rate above 15 per cent. Thus the rate of capital intensification has been in an unprecedented level during post-MFA regime and the single most reason could be the total phasing out of Multi-Fibre Agreement and ushering in competition.

✓ To face the competition, the entrepreneurs might have embarked upon cost cutting strategies through advanced technology and automated machines warranting heavy investments in capital assets especially in plant and machinery.

✓ It is evident that eventhough structural break surfaced in 1989-90, it was more sustained during post-reform period (1999-00 to 2004-05). From the result it is inferred that the turnaround or significant break in trend rate became visible in 1989-90 and 1999-2000 to 2003-04.
Post-MFA scenario is slightly encouraging in the sense that even though the coefficient was statistically not significant it was positive implying persistence in growth acceleration and the growth acceleration was more sustained in a liberalized regime and same continued during the post-MFA regime also.

Out of the nine product groups, three product groups experienced de-growth and all are statistically significant at 1 per cent level, signifying that the negative growth rates are deliberate and the highest displacement was found in Making of Blankets and Shawls (1722) at 8 per cent.


The post-reform scenario of the industry was slightly better with 0.1 per cent growth in employment, but since $\beta_1$ is not statistically significant, we are unable to draw any definite inference regarding growth of employment in the Indian textile industry.

Thus the micro scenario was totally different from the macro scenario as far as growth of employment in Indian textile industry is concerned.

Compared to pre and post-reform period, the average trend growth of employment in post-MFA regime was surprisingly higher at 11.4 per cent.

The present study showed that in Indian textile industry 7 out of 9 product groups had been able to grow with impressive net job creation during post-MFA regime. However, there is only one product group that grew largely by shedding employment perhaps to stay on course with the changing nature of the product market and domestic competition.
Based on the results, it appears that the post-MFA regime is the real liberalized regime as far as textile industry is concerned. Since the employment growth is high after the abolition of MFA, it has generated additional employment to come out of the syndrome of "jobless growth."

Thus our study does not support the hypothesis of "jobless growth" in Indian textile industry.

As regards employment, the significant change in the trend growth fails to appear beyond 2006-07. From the results it is inferred that the turnaround or significant break in trend rate became visible from the early-1980s. The Indian textile sector employment experienced accelerated growth from the mid-1980s upto beginning of post-MFA regime dispelling the hypothesis of "jobless growth".

The average trend growth of output in textile industry during pre-reform period was 4.4 per cent.

The industry's growth rate marginally improved to 5.1 per cent during post-reform period. The intra-industry growth rates were positive in all product groups and significant in 8 out of 9 product groups, the growth impetus continued during post-reform period also.

In other words the growth momentum gained during pre-reform period accelerated during post-reform period also. It is to be noted that the inter product group variations in growth rates were not much signifying uniformity in growth acceleration.

The textile industry was upbeat during post-MFA regime recording a highly impressive growth rate of 22.4 per cent per annum.

The growth performance of all product groups were statistically significant, and seven out of nine product groups recorded a growth rate of over 25 per cent which is unprecedented in any sense. The results show that post-MFA regime seems to be turning point as for as Indian textile industry is concerned.
The significant change in the trend growth fails to appear only in 2007-08. From the result it is inferred that the turnaround or significant break in trend rate became visible right from early 1980s onwards and continued till 2007-08. The Indian textile sector output experienced accelerated growth right from the beginning of pre-reform period and pervaded through post-reform and post-MFA regime also.

6.6 Stochastic Production Frontier, Technical Efficiency and Returns to Scale during Pre and Post-Reform and Post-MFA Regime

An implication of the non-fulfillment of Hicks-neutrality test is that technical change in Indian textile industry involves a technical bias. The coefficient of (lnL)_t is positive while that of (lnK)_t is negative, which suggests a capital saving bias of technological progress.

Further, in the estimated model 1.5, \( \gamma \) is statistically significant at 1 per cent level and \( \eta \) is negative. A significant \( \gamma \), along with a negative \( \eta \), implies the existence of technical inefficiency that increased over the years.

The null hypothesis (H_0) of the model 1.1 is that the technology in Indian textile industry is Cobb-Douglas (H_0 = \( \beta s = 0 \)), was rejected at 1 per cent significance level for the Indian textile industry during pre-reform period. This indicates that input elasticity and substitution relationships are not constant for firms of different sizes and with different input values in the nine product groups.

In model 1.2, the null hypothesis, that there are no technical change (H_0 = \( \alpha_x = \beta_{rr} = \beta_{rl} = \beta_{rk} = 0 \)), was rejected at 1 per cent level for the Indian textile industry. The implication is that shift of the production frontier over time.

In model 1.3, the null hypothesis, that technical progress is neutral (H_0 = \( \beta_{rk} = \beta_{rk} = 0 \)), was rejected at 1 per cent level. This implies the existence of non-neutral technical progress in Indian textile industry during pre-reform period, given the specified production model.
In model 1.4, the null hypothesis, that there are no technical inefficiency effects 
\( (H_0 = \gamma = \mu = \eta = 0) \), was rejected at 5 per cent significance level. The results 
suggest that the average production function is an inadequate representation of the 
Indian textile industry and underestimates the actual frontier because of technical 
inefficiency effects.

In model 1.6, the null hypothesis, that technical inefficiency is time-invariant 
\( (H_0 = \eta = 0) \), was rejected at 1 per cent significant level. This implies that technical 
inefficiency in Indian textile industry is not time-invariant, given the time-varying 
specification of the stochastic frontier.

For post-reform period, the null hypothesis \((H_0)\) of model 1.1 is that the technology 
in Indian textile industry is Cobb-Douglas \((H_0 = \beta s = 0)\), was rejected at 1 per cent 
significance level. This indicates that input elasticity and substitution relationships 
are not constant for firms of different sizes and with different input values in the 
nine product groups.

In model 1.2, the null hypothesis, that there are no technical change 
\( (H_0 = \alpha_r = \beta_T = \beta_{Tt} = \beta_{TK} = 0) \), was rejected at 1 per cent level. The implication 
is that shift of the production frontier over time.

In model 1.3, the null hypothesis, that technical progress is neutral 
\( (H_0 = \beta_{tl} = \beta_{TK} = 0) \), was rejected at 5 per cent level. This implies the existence of 
non-neutral technical progress.

In model 1.4, the null hypothesis that there is no technical inefficiency effects, 
\( (H_0 = \gamma = \mu = \eta = 0) \), was rejected at 5 per cent significant level. The results 
suggest that the average production function is an inadequate representation of the 
Indian textile industry and underestimates the actual frontier because of technical 
inefficiency effects.

An implication of the non-fulfillment of Hicks-neutrality test is that technical 
change in Indian textile industry involves a technical bias.
In model 1.6, the null hypothesis, that technical inefficiency is time-invariant ($H_0 = \eta = 0$), was rejected at 5 per cent level. This implies that technical inefficiency in Indian textile industry is not time-invariant, given the time-varying specification of the stochastic frontier.

The industry's mean TE score which was 87.84 per cent in 1980-81 declined to 83.72 per cent in 1991-92 thus recording a fall of 4.12 percentage points during the period under review and the declining technical efficiency concurs with the results of the model 1.5.

While inter product groups variations are high, the intra product groups' TE scores indicate utmost consistency signifying the absence of any radical strategy shift at firm level in the management of production units. In other words, it seems the entrepreneurs did follow a safe approach without disturbing the prevailing competitive equilibrium and thus avoiding retaliatory moves from the competitors.

During post-reform period, the mean technical efficiency score marginally improved to 87.27 per cent, thus gaining around 5 percentage points during 1992-2004.

As in the previous sub period, during 1992-2004 also the inter product group TE scores varied widely with an upper range of 93.85 per cent and a lower range of 26.55 per cent. The reasons for such a wide divergence in TE scores can be an area for further research.

While inter product group variations are high, intra product group TE scores indicate utmost consistency signifying the absence of any radical change in the managerial strategies.

The improvement in technical efficiency noticed during the post-reform period continued in the post-MFA period also.

The technical efficiency of Indian textile industry which was falling up to 1991-92 started improving since the reform process gathered momentum. The higher and significant rise in the technical efficiency since 1992 is a clear indication of the positive impact of the reform process including phasing out of MFA on Indian textile industry.
The policy changes during the post-reform period and phasing out of MFA played a significant role in increasing the TE of Indian textile industry during the period under consideration.

The inter product group variations in RTS are less contrary to the behaviour of TE scores in the previous section goes to show that TE scores did not have much impact on the RTS. Intra product RTS values exhibit utmost consistency.

The null hypothesis that textile industry is working under constant returns to scale during post-reform period was tested using T – test and was found statistically insignificant and hence the result is inconclusive.

The results show that textile industry reaped increasing returns to scale (IRS) during pre-reform period, constant returns to scale (CRS) during post-reform period and decreasing returns to scale (DRS) during post-MFA regime. The intra industry analysis of RTS reveals the following features:

In both periods, the RTS estimates were statistically significant and hence in all product groups [except Cotton Spinning and Processing other than in Mills (1711)] the RTS values improved during post-reform period as against pre-reform period.

But in between post-reform period and post-MFA regime the numerical values of all product groups declined considerably during the later period.

Since the numerical values are statistically highly significant especially post-MFA regime, the reduction in RTS should be taken as genuine and hence it is inferred that phasing out MFA resulted in dis-economies of scale to the Indian textile industry.

Phasing out of MFA ushered in competition and exposure to competitiveness could have been one of the reasons for DRS.

6.7 Sources of Productivity Growth in Indian Textile Industry during Pre, Post-Reform and Post-MFA Regime

There were two distinct phases in the pre-reform period (i) 1980-81 to 1985-86 and (ii) 1986-87 to 1991-92. The annual TFP growth rates during the first phase were negative and the annual growth rates during second phase showed distinct
improvement. In 1986-87, almost all product groups experienced reduction in TFP growth with high magnitudes and the turn around occurred in 1987-88 and after that, the annual growth rates showed some improvements. The Government of India announced the new textile policy 1985 and probably the impact of this policy could be the reason for the turnaround. In other words, the overall TFP growth performance during 1980-92 was dotted with violent swings from negative to positive and the closing year of the first sub period ended with a positive growth rate of 5.43 per cent.

The technical efficiency change was negative in all product groups and in all years signifying declining technical efficiency during pre-reform period.

The decline in technical efficiency was due to the rapid changes in economic environment and changes in government policies viz; mild reforms of 1980 and 1985 new textile policy. However, these two policies have not yielded any improvement in the technical efficiency of Indian textile industry during the period 1980-81 to 1991-92.

The annual growth rates of TP for the industry during 1980-81 to 1986-87 was negative indicating technical retrogression and the same trend was reflected in the constituent product groups also. After the introduction of textile policy 1985, there was a turn around in the year 1987-88 and TP gathered momentum which continued till 1991-92.

The mean scale efficiency change for the industry for pre-reform period was 0.14 per cent. This positive scale efficiency change was coupled with increasing returns to scale.

There was efficient allocation of factor inputs in the initial years as the allocative efficiency change was positive, but this efficiency declined steadily and became -3.07 per cent in 1991-92 reflecting inefficient allocation of factor inputs in majority of the product groups during later years.
The intra industry review suggests that all product groups experienced fall in TFP except Cotton Ginning and Baling (0140). Even in case of Cotton Ginning and Baling (0140), the TFP growth is solely because of TP since other three components viz; TEC, SEC and AEC were negative.

The primary reason for the fall in TFP was negative TEC, AEC and SEC. In other words, TP is the only component which is positive in all product groups during 1980-81 to 1991-92.

Eight out of nine product groups recorded better technological progress during the period under review.

It is important to note that the mean TFPG further declined and the negative trend further aggravated to -1.12 per cent from the previous level of -0.05 per cent witnessed during the pre-reform period.

After the 1985 textile policy, we witnessed a turn around in the annual TFPG w.e.f 1987-88 which continued upto 1991-92. But since 1993-94, TFP again indicated de-growth upto 1998-99. The introduction of textile policy 2000, changed the productivity scenario from negative to positive, which trend continued till the close of 2003-04. These swings in TFP suggests that the impact of policies in textile industry fade away after some time and new measures were needed to regenerate the textile industry.

The intra industry reviews suggests that the TFPG of different product groups behave differently and no uniform behavioural pattern emerge since some product groups indicate negative trends and some positive trends.

Regarding the sources of TFPG, TEC was positive in all product groups and in all years. TP also was positive in majority of sectors except very few. The SEC and AEC were the two sources responsible for de-growth in TFP during post-reform period.

At the product group level, most of the product groups were found to have positive productivity growth, whereas the mean TFPG was negative at 1.12 per cent. This contradiction is not common only to Indian textile industry above, where in similar findings were reported in Liang (1995), Liang and Jorgenson (1999), Goldar and Kumari (2003) and Sun (2004).
The productivity growth in the Indian textile industry was more negative (-1.12 per cent) in the post-reform period compared to (-0.05 per cent) estimated for the pre-reform period. The higher productivity deterioration during the post-reform period is an indication of negative effects of reforms process. This conclusion is in line with the findings of Trivedi et al., (2000), Goldar (2000), Balakrishnan et al., (2000), Goldar (2002), Goldar and Kumari (2003), Goldar (2004) and Prakash (2006) which indicated a fall in the growth rate of TFP in Indian manufacturing in the post-reform period.

The post-reform scenario of technical efficiency change was totally different with positive values in all product groups.

However, magnitude of TEC varied across different product groups indicating different degrees of innovation, modernization and technology up-gradation resorted to by different entrepreneurs.

The trend behaviour of TP assumed V pattern viz: gradual technical retrogression in the initial phase and gradual and steady technical progress during the terminal phase mostly because of textile policy 2000.

Eventhough, the temporal pattern of TP was different across the various product groups, it is to be noted that the magnitude was positive in all sectors reinforcing the positive impact of economic reforms as the technology of the textile industry.

The scale efficiency change (which explains changes in returns to scale) declined significantly during the post-reform period as the mean scale efficiency change was 0.04 per cent as against 0.14 per cent for the pre-reform period.

In the initial years of the post-reform period, the annual SEC was positive upto 1998-99 and turned to negative in 1999-2000 which signifies the negative impact of textile policy of 2000 on the RTS parameters, and the negative trend continued till the close of 2003-04.

Across the product groups, scale efficiency change was negative in 7 out of 9 product groups considered in the analysis.
The mean allocative efficiency which reflects the efficient allocation of factor inputs during post-reform period was (-) 2.62. In the initial year of our analysis, the industry’s annual AEC was (-) 2.48 and the same negative trend continued till 2001-02 with higher magnitude in between, signifying inefficient allocation of factor inputs in all years across all product groups. Even though the annual mean values during the 2002-03 and 2003-04 was positive, their magnitude was almost zero.

The details presented here reinforce the general criticisms that the textile entrepreneurs do not pay serious attention to input allocation even during the era of shift competition due to economic reforms and trade liberalisation measures.

The implication is that the total factor productivity has declined considerably after the advent of economic reforms in 1991-92.

It may be noted that this de-growth in TFP of the industry was specifically caused by three product groups viz; Cotton Spinning and Processing other than in Mills (1711), Manufacture of Knitted Textile Products (1730) and Textile Garments and Clothing Accessories (1810).

The positive contribution of TEC and TP did not help to increase the TFP growth, because of a high negative SEC and AEC which pulled down the TFP growth during the post-reform period.

Thus, it is evident that the 1991 Industrial policy and 2000 New textile policy have failed to augment any total factor productivity improvement, even though these policies had some positive effect on the improvement of TEC and TP of this industry.

The negative productivity growth during pre-reform period further worsened in the post-reform period but turned to be positive with higher magnitude in the post-MFA regime.

The similar trend can be observed across the product groups. All the product groups witnessed an impressive increase in productivity growth during post-MFA regime, primarily due to technological progress along with technical efficiency change.

Thus it is evident that phasing out of MFA appears to be advantageous to the Indian textile industry in terms of TFPG.
Technical efficiency change was negative in all sectors during pre-reform period, turned around during post-reform period and the same positive trend continued during post MFA regime also but with a gradually reduced magnitude.

The inference is that reforms had a positive impact on technical efficiency with a declining trend and MFA phase out did not exhibit any significant shift.

The technical progress in Indian textile industry exhibit an interesting trend. During the initial phase of (1980-81 to 1986-87) of pre-reform period there was technical retrogression. Introduction of textile policy 1985, brought about a turn around and TP was seen during phase II (1987-88 to 1991-92).

Again it was retrogression during the initial years of post-reform period (1991-92 to 1996-97). Probably the New Textile Policy of 2000, changed the course of TP and the progress continued during the post-MFA regime also with higher magnitude.

In other words, the magnitude of the mean TP of the industry as well as TP of the individual product groups was much higher during post-MFA regime compared to the earlier two periods goes to show that the technical progress of the Indian textile industry was very impressive after the phase out of MFA and emergence of competition.

The scale efficiency change underwent a dramatic change in the post-MFA regime.

All product groups experienced negative scale efficiency change confirming decreasing returns to scale in the Indian textile industry. Phase out of MFA resulted in intense competition especially from China and therefore that should be responsible for diseconomies of scale.

In pre-reform period, the allocative efficiency which indicates efficient allocation of factor inputs was not that much impressive in the individual product groups as well as at the industry level.

During post-reform period mean AEC of all constituent product groups and mean AEC of the industry in all years were negative signifying inefficient input allocation. The situation deeply aggravated during this period with the mean AEC of the industry touching (-) 2.62 per cent.
But compared to the above two sub periods, the scenario in the post-MFA regime was better with mean value assuming positive sign and some product groups indicating higher AEC. As in the case of TP, TEC, SEC, allocative efficiency was also comparatively better in Indian textile industry because of phase out of MFA.

Phasing out of MFA has a better impact on the TFP growth of the Indian textile industry. The table reveals that the significant source of TFP growth is TP (6.65 per cent) AEC (0.61 per cent) and TEC (0.35 per cent) also positively contributed to the growth of TFP during post-MFA regime. The similar trend could be noticed in the product groups also.

Phasing out of MFA led to a significant productivity gain in the Indian textile industry. During the post-MFA period, the policy change resulted in the up-gradation of technology and modernization of the machineries leading to better technical progress which further augmented productivity growth in Indian textile industry.

It could be observed from the table that the negative TFP growth of (0.05 per cent) pre-reform period further worsened to -1.12 per cent in the post-reform period and became positive during the post-MFA regime (6.97 per cent). This can be considered as a significant improvement in TFP growth facilitated by MFA phase out.

The technical efficiency change was negative (0.44 per cent) in pre-reform and turned positive in the liberalised environment (0.45 per cent) and the same trend continued in the post-MFA regime (0.35 per cent) also. In case of technical progress, there was significant improvement during post-reform period (0.63 per cent) which further augmented in the post-MFA regime (6.65 per cent).

The other two components, SEC and AEC, were almost neutral in the pre-reform period and the trend continued in the post-reform also. While the AEC was negative (2.62 per cent) during the post-reform period, it turned positive (0.61 per cent) in the post-MFA regime. The marginally positive SEC (0.04 per cent) became negative (-0.64 per cent) in the same period.
Across the product groups, seven out of nine product groups could increase TFP growth during post-reform period compared to pre-reform period, and same trend continued in the post-MFA regime. The TFP growth in the remaining two product groups worsened in the liberalised regime and improved in the post-MFA regime.

The technical efficiency change marked an impressive growth in the Indian textile industry as a whole and product groups in particular during the post-reform period and post-MFA regime.

In case of technical progress, four out of nine product groups recorded decline during post-reform period compared to pre-reform period but improved in all product groups during the post-MFA regime.

The behavioural pattern of SEC and AEC were mixed during all the three sub-periods.

The emerging conclusion is that TFP growth and its components recorded impressive gains during post-MFA regime and hence the phase out of MFA and the ensuing competition augurs well for the Indian textile industry.