Backward Linkages in the Ready Made Garment Industry of Bangladesh: Appraisal and Policy Implications

Mohammed Rakib Ibne Habib*

In global apparels market, international buyers will place an order with price competitiveness along with lead time. For Bangladesh, lead time is fast emerging as a serious bottleneck. Backward linkages are playing major part of a garment industry to reduce lead time and offer competitive price in the international market. It is inevitable that one of the major issues of success in readymade garment (RMG) industry in Bangladesh intensely depends on backward linkages status, support, and strategic formulation. This paper will briefly discuss the present condition of backward integration comparison to other countries, impact of lead time, why lead time get priorities, process of short lead time and how central backward linkages and central bonded house influence on price competitiveness and alternative solution of backward linkages in the short-run considered central bonded warehouse (CBW) in the RMG sector. Finally this paper will focus on policy implication on backward Linkage sub-sectors, scheme of intensifying central bonded warehouse (CBW) facility, procedure for short lead time in respect of free trade apparel market.

Keywords: development of backward integration, status and condition of backward linkage in garment, central bonded warehouse, lead time, cost plus pricing.

Introduction

The performance of the readymade garment (RMG) sector has been one of the most notable success stories of the Bangladesh economy over two decades. Nearly two million women workers directly and more than ten million habitants indirectly associated with this industry. Over the past 20 years, the number of manufacturing industry has grown up from 180 to over 3600 units. The sector alone fetches in an average over 76% of the total export earning of the country (BGMEA, December 2006-2007). Today the RMG export sector is a multi-billion-dollar manufacturing and export industry in the country. The overall impact of the readymade garment exports is certainly one of the most significant social and economic developments in contemporary Bangladesh. Because the economy of Bangladesh largely

*Mohammed Rakib Ibne Habib (rakibhabib@yahoo.co.uk), is a manager marketing and merchandising in the Liberty Garment Industries Ltd, Dhaka, Bangladesh and at present writing international article to change a new teaching career.
depends on the RMG sector, in short, this sector still now is considered as the life-blood of the Bangladesh’s economy and playing an indispensable role in the social stability of the country.

What is Backward Linkage in Respect of RMG Sector in Bangladesh?

Backward linkage means the use by one firm or industry of produced inputs from another firm or industry (Deardorff, 2001). That means the finished garment is relies on three steps from route level fibers/cotton to yarn (thread, wool), second stage from yarn to grey-fabric and final stage from gray fabric to dyeing, printed of finished fabrics. The combination of 3 steps is integrated link to each other, the below Figure 1 shows steps from fiber to finished fabrics, that mean that starting from raw material to finished products all these steps are essential for backward linkages integration.

Out of three steps, Bangladesh is only capable of knitting, finishing in knitwear sectors but far behind in producing yarn, fabrics which is a major factor for woven section. Only success came to accessories where 80% demand of our country was fulfilled.

The success of the garment industry very much depends on how effectively RMG sector backward and forward linkages operates. If the manufacturer has effective control over the supply of raw materials, components and ancillary services needed to produce final product, then the production flow is likely to be interrupted. If the company has developed an effective marketing service which provides right signal, and if marketing and distributing system as whole is effective so that the products reach the target markets, and are sold at planned, then the sales revenue for the company is likely to be maximum. This means that, to minimize cost of production and maximize sales revenues, both backward and forward linkages are needed to be integrated. Here the issue of developing backward linkages is discussed with reference to the desirability of having control over the supply of inputs of RMG industry, mainly, fabric, yarn and processing status (Hafiz, 2004).

Objectives of This Study

The chief objective of the study was to assess the importance and development strategy of Backward Linkages in the Readymade Garment Industry of Bangladesh. The following research questions were addressed in this study to meet the research objective:

1. What is the situation of backward linkage sub-sector in the RMG sector in Bangladesh?
2. What is the present condition of backward linkages in Bangladesh in comparison to other neighboring countries?
3. Why RMG sector in Bangladesh require further improvement in backward Linkages sub-sector in Post MFA situation?
4. Why the central bonded warehouse (CBW) is important as an alternative

Figure 1. Steps from Fibers/Cotton to Finished Fabrics

<table>
<thead>
<tr>
<th>Fibers/Cotton</th>
<th>Yarns</th>
<th>Grey fabrics</th>
<th>Finished Fabrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinning</td>
<td>Weaving or Knitting</td>
<td>Dyeing, Printing, Finishing</td>
<td></td>
</tr>
</tbody>
</table>

Sources: BGMEA (2005)
solution of backward linkages?
5. What is the impact on lead time using long term strategy (development of backward integration) or short term alternative strategy (expansion of CBW)?
6. Why lead-time/delivery time get important issue for apparel marketing?
7. How backward integration and CBW will influence on cost-plus pricing?

Methodology

The nature of the study was descriptive. Both quantitative and qualitative analysis was adopted to analyze the data which was generated on the basis of document and secondary data. The documents and secondary data were generated from various sources, per se, statistical information from Garments Manufacturers and Exporters Association in Bangladesh; reports from government and non-government periodicals and research journal; information from national daily newspapers and business magazines; web sites; national/international conferences papers, printed material related to textile and apparel industry of Bangladesh.

The researcher preferred documentary and secondary data for the study as it offered a number of benefits than findings collected data from primary sources. Some of such benefits are outlined as follows (Bryman, 2002):

- Cost and time effective as secondary information offers easily access to good quality of data for a tiny friction of the resources involved in carrying out a data collection exercise of the researcher.
- Many of the data sets that employed most frequently for secondary analysis provide extremely high quality data.

It is quite clear from the out-line benefits point that the researcher used secondary and documentary data sets for the analysis. It is important to point out that the criteria-authenticity, credibility, representativeness and meaning- prescribed by J. Scott (1990) was kept in author’s mind while using documents and secondary sources of information.

Result and Discussion

Answer to the Research Question 1: What is the Situation of Backward Linkage Sub-Sector in The RMG Sector In Bangladesh?

Although the RMG industry in Bangladesh flourishes in the 80’s and 90’s, there has been little development in the backward linkage sector (Habib, 2002). RMG manufacturers usually import fabric from different countries as locally produced raw materials cannot compete with imported materials in terms of price or in terms of quality.

At present, only 25%-30% value addition takes place to the RMG products as manufacturer’s import bulk of the raw materials. On the contrary, almost 70% value addition takes place to the jute products exported to different countries. The garment industry should need to increase at least 50% value addition through enhancement of backward integration in the RMG market.

Backward linkages sub-sector for RMG industry includes cotton production, spinning (cotton and synthetic yarn), weaving and knitting, dyeing and painting, and accessories and all of the above sub-sectors reflect the present condition of the backward integration in the RMG in Bangladesh.

Cotton (Fiber)

Cotton is the main sources of yarn producing. Production of cotton in Bangladesh is very limited margin. Bangladeshi spinning mills depends on
imported cotton from International market. India, Pakistan, Turkey, China, Uzbekistan, USA are the main production where Bangladesh largely dependant on the above countries. Bangladesh Cotton Development Board (BCDB) undertakes cotton promotions activities but achievement is not satisfactory. BCDB is striving for higher production of cotton with a production range of 1,03,620 bales in four cultivating zones in south-western part of the country (The Daily Star, Regional News). Cotton production is need vast land where in Bangladesh land is scarcity only 1,44,000 sq. kilometers of land. Farmer prefers agriculture more profitable than cotton production. So in the context of cotton production in Bangladesh is dreadful. This implies that Bangladesh has to depend on import of cotton which is in turn, involve large amount of foreign exchange. Bangladesh is not even in a position to move towards synthetic fiber production as it involves capital intensive-technology.

**Spinning Mills (from Cotton to Yarn)**

From fiber/cotton to yarn garment industry need spinning mills. It is difficult to accurately determine the percentage of demand for yarn met locally because of the amount of yarn production varies with the efficiency of the spindles. Bangladesh Textile Mills Corporation (BTMC) and Bangladesh Textile Mills Association (BTMA) mills have spindles with different efficiency levels and there is no numeric data available on the efficiency levels of the spindles according to Chowdhury (2002). But According BTMA, in year 2000 statistics, there are 148 spinning units (Private 107 and Public 41 units), installed capacity 3.6 million, with annual production 443 million kg (BTMEA, 2001). Number of spinning mills increased to 202 (private sector: 176, Public sector:26), installed capacity:43,34,796 spindles with annual production capacity of 50 million kgs of yarn. The statistical figure of cotton and blends yarn requirement is presented in Table 1:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Handloom</strong></td>
<td>57,400 tons</td>
</tr>
<tr>
<td><strong>Power loom</strong></td>
<td>9,000 tons</td>
</tr>
<tr>
<td><strong>BTMA and BTMC</strong></td>
<td>11,600 tons</td>
</tr>
<tr>
<td><strong>Knitting</strong></td>
<td>14,000 tons</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>92,000 tons</td>
</tr>
<tr>
<td><strong>Plus 2% waste</strong></td>
<td>1,840 tons</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>93,840 tons</td>
</tr>
</tbody>
</table>

Sources: Chowdhury (2002)

At present 63% average efficiency of the spindles and derives that 75% of the local requirement can be produced. However, this requirement calculation includes only demand by producers who operate in the local market. Demands by the RMG producers are not counted.

According to a report submitted by the Sub-Committee of the Parliamentary Standing Committee on Textile (May 1999) to meet the demand (2000) domestically, Bangladesh will have to established 148 Spinning Mills with 25000 spindles each, (Siddiqi, 2005) and again to attain self sufficiency in yarn to fulfill the domestic and export needs in year 2005, Bangladesh will need to established additional 98 spinning mills. So it shows that capacity of spinning mills in Bangladesh not able to cover demand of yarn that needed to produce fabric for RMG sector. The total demand for yarn by RMG produces and producers operating in the local market is more than the existing production capacity and there is requirement for an enormous increase in capacity if Bangladesh wants to ensure adequate supply of yarn locally.

Handloom products may be suitable for the domestic market, but RMG producers
cannot consider handloom as competitive because of consistent and large quantity demand for quality fabrics. On the other power loom originally set to serve the domestic market but to upgrade as per export quality it very difficult and costly.

A part from increase in capacity, the quality of yarn also needs to be improved. Most of the spinning mills are equipped with outdated machinery and characterized by poor maintenance and repairing. RMG producers cannot sacrifice quality and therefore they will prefer imported yarn to local yarn as long as yarn is inferior to imported yarn.

**Weaving and Knitting Mills**
(from Yarn to Fabrics)

The next stage is weaving and knitting where yarn produces fabrics. Fabric is main raw material for making garment, and is about 75% cost of the garment. Hand loom and power loom both may be suitable for the domestic market, but large quantity demand for quality fabrics not been possible from hand loom production. But in case of power loom it may increase production capacity to satisfy part of the RMG sector provided large amount of investment needed.

But in the long run, Bangladesh weaving mills need high volume of yarn to fulfill demand for domestic and exported market. In year 2000 fabric requirement 830 min meters of fabric, soon after year 2005, demand of fabric increases almost double, and just after 5 years time requirement increase to 1600 mil meter. To fulfill huge amount of fabric shortfall, the weaving industry needs to increased capacity by developing number of weaving industries. New and reconditioned machines both needs to be added in this sector. Huge amount of cost involvement required, that is almost $3.9 bn that includes ($2.7 billion - new machines and $1.2 billion -reconditioned) (Bhattacharya, 2001). To established new spinning mills shortage of yarn production can be fulfilled and hence demand and supply gap in weaving and knitting sub sector overcome sharply.

**Dyeing, Printing, Finishing**

This is the final stage where the fabric either can be used for domestic market or RMG sector for export purposes. Dyeing, printing and finishing units in Bangladesh are currently able to process all of the locally produced grey. According to Bangladesh Textile Mills Association (BTMA, 2001). Bangladesh knitting, knit dyeing and finishing sub-sector had total 282 (number of merchandized dyeing and finishing: 99 and number of semi-merchandized dyeing and finishing: 183) of semi-merchandized and merchandized dyeing, printing units with annual production capacity (fabric) 680 million mtrs. On the other hand in case of knitting sector had total 155 units (number of domestic support of existing units 23 and export oriented units 132). Existing knitting, knit dyeing and finishing sub-sector cover demand for local and major portion of export RMG sector in Bangladesh.

But due to increase demand in RMG sector to attain self-sufficiency in fabric in year 2005 Bangladesh need to established another 481 units of dyeing, printing and finishing units with 10 million meters of fabric capacity of each unit (Hafiz, 2000). Dyeing, printing and finishing factors are depended mostly on imported fabric as Bangladesh’s weaving sector can not full fill demand of the RMG’s export fabric requirement. This sector dramatically improved over the five years due to relatively small investment is necessary. But only a few units can do proper dyeing having particularly deficiencies with color shading. Again, as the current dyeing facilities are mostly dependent on imported
fabrics, their expanding is not dependent on any of the other sector which impedes the growth of backward linkage sub-sectors.

To develop dyeing, printing, finishing sub-sector, it is mandatory to build up modern units with appropriate technology, set up bonded warehouse that can fulfill demand of fabric until local grey production can meet the quality and quantity, stock of dyes and chemical that must fulfill demand of dyeing, printing, finishing sub-sectors. This sub-sector can contribute significantly to reduce lead time and price. It is suggested that dyeing, printing, finishing sub-sector has relatively better advantage than other backward integration sub-sector compare with spinning, weaving sectors. This statement is supported by both Dr. Martelli and Gherzi where researcher identified finishing phase having comparative advantage in Bangladesh and recommended future investment in it (BGMEA, 2004).

Accessories

Only in case of accessories Bangladeshi garment industry is in quite good position, and 80% of those items, which generally are known as accessories zips, buttons, thread, stiffeners, inter-linings, packaging materials, etc. are available locally and meet the requirements of the international buyers. A considerable amount of backward linkage has therefore already taken place into this export support sector and this sector maintains its success in local and RMG sector.

Answer to the Research Question 2: What is the Present Condition of Backward Linkages in Bangladesh in Comparison to Other Neighboring Countries?

Here, the researcher has compared the condition of backward linkage in regards to Bangladeshi garment industry and the garment industry of India, Pakistan and Sri Lanka. The data in table 2 (a), (b) and (c) respectively represent the situation of backward linkage with other three neighboring countries which is important to explore the effect of backward linkages on Bangladeshi garment industry.

The issue of developing backward linkages mainly depends on fabric, yarn and processing facilities. The components of backward linkages differ according to the type of apparels produced, namely (Hafiz, 2004):

1. Woven garments;
2. Cut-and-sew knitting garments and

Different countries have different levels of self-sufficiency in input supply or degree of backward integration. Table no-6 presents the comparative status of the level of self-sufficient in input supply of Bangladesh (The Ministry of Commerce, 2002).

Data on the status of backward linkage presented in Table 2 (a) clearly state that Bangladesh is only 20% self-sufficient in spinning, weaving and processing, i.e., it domestically produces only 20% finished fabrics, and imports the rest or 80% to keep the export-oriented RMG industry running, whilst India and Pakistan almost 100% self-sufficient. But position of Sri Lanka is as same as Bangladesh. Findings of the product categories cited in Table 2 (b) reveal that Bangladesh has shown higher level of self-sufficiency in all level of cut and sew knitted garments. Except Sri Lanka both India and Pakistan have higher level of self-sufficiency. It is found from the Table 2 (c) that in case of knitting Bangladesh has achieved 100% of self-sufficiency only in processing and garmenting, but in other two categories its self-sufficiency is significantly lower than that of the three countries.

After analyzing the data presented in Tables 2 (a), (b) and (c), it can be strongly said that Bangladesh is still far behind compare to other countries backward
Table 2. The Comparative Status of Backward Linkages in Four Countries

(a) Woven Garments

<table>
<thead>
<tr>
<th></th>
<th>Bangladesh</th>
<th>India</th>
<th>Pakistan</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinning</td>
<td>20</td>
<td>100</td>
<td>100</td>
<td>20</td>
</tr>
<tr>
<td>Weaving</td>
<td>20</td>
<td>95</td>
<td>100</td>
<td>20</td>
</tr>
<tr>
<td>Processing</td>
<td>20</td>
<td>95</td>
<td>100</td>
<td>20</td>
</tr>
<tr>
<td>Garmenting</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

(b) Cut and Sew Knitted Garments

<table>
<thead>
<tr>
<th></th>
<th>Bangladesh</th>
<th>India</th>
<th>Pakistan</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinning</td>
<td>70</td>
<td>100</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>Weaving</td>
<td>95</td>
<td>100</td>
<td>100</td>
<td>70</td>
</tr>
<tr>
<td>Processing</td>
<td>95</td>
<td>100</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>Garmenting</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

(c) Knitwear

<table>
<thead>
<tr>
<th></th>
<th>Bangladesh</th>
<th>India</th>
<th>Pakistan</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinning</td>
<td>10</td>
<td>100</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>Weaving</td>
<td>20</td>
<td>100</td>
<td>100</td>
<td>70</td>
</tr>
<tr>
<td>Processing</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Garmenting</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

linkages sub-sectors. Overall backward linkages garment status is really poor than requirement. At present, roughly 80% of the fabric required by the RMG is imported. In addition, the existing supply cannot even meet the demand by producers operating in the domestic market. The huge gap between total demand for fabrics and supply must be gradually reduced to ensure the survival of the RMG industry in long run. Strictly speaking complete backward integration is necessary to make the garment industry of Bangladesh more competitive with the neighboring countries.

Answer to the Research Question 3: Why RMG Sector in Bangladesh Require Further Improvement in Backward Linkages Sub-Sector in Post MFA Situation?

After abolition of quota 2005, RMG sector in Bangladesh is facing stiff competition to export garment in world apparel market. Moreover increase competition from neighboring countries that included India, Pakistan, China and Thailand from where Bangladesh imports fabrics to meet the fabric demands of its RMG sector. All the above competitive countries have stronger backward linkage support as they able to utilize more of their locally produced yarn and fabric internally, resulting in the price competition in the export market, putting pressure on the Bangladeshi garment sectors. This statement can be supported with the view of Ahmed Khadker Habib cited Hafiz G A Siddiqi, (Siddiqi, 1999) who describes:

"Particularly India, Pakistan, China and Thailand which are at a relatively higher stage of development and are richer compared to Bangladesh will in the near future move to the production of high-technology higher-value items where return on investment will be much higher than that in RGM."

Bangladesh RMG sector need more development in backward linkages sub-sectors to reduce dependency on imported raw materials and intermediates goods to meet their exported target in the world market. Again the price competitive is vital with this backward linkage support.
otherwise it is not possible to survive in the world apparel market in the Post MFA era. Recent example, China with strong backward integration maintain competitive price in the RMG sector showing high performance in the RMG market. Supporting this statement by (William, 2005), The USA market captured by China garments industry boomed after withdrawn of quota facility in the USA. The survey of the study reveals that apparel exports were up 80% to the US and 43% to the EU in January 2005. Again another statement reflects Chinese’s RMG export boomed in the Canadian market and this statement supported by the following statement (The Daily Star, Business and Finance, 1999):

"Canada withdrew quota facility from cotton garments and that around 90% of the market has been captured by China indicating potential gravity of heavy completion in the global apparel market".

It is no doubt that China RMG sector rearing up with high export performance but in case of Bangladeshi RMG export performance is showing negative reflection in The USA market. Garment export fall by 15% in US markets from 54.25% (year 1999-2000) to 39.45% (year 2003-2004) But in case of EU, The rate of growth is increased 9.93% in the year 2003-2004 from 1991-1992,(Export Promotion Bureau, 2005). This figure represented that RMG industry is facing shocking situation in the USA market hence pointed out that Bangladesh RMG sector should take extra precaution in the USA market along with slow growth in the EU region.

To face the quota free trade in clothing section, Bangladeshi RMG sector is not only need to keep product price competitive but also maintain shorten lead time. Development and growth of backward linkages industries are able to reduce price ranges and lead-time in long run. As backward integration includes composite, spinning, weaving, finishing, dying and processing units that mean beginning from raw material to finishing products all processing steps are under backward linkages sub-sectors. RMG sector will become more challenging with development of each backward linkage subsector that keep product price competitive and maintain short lead time. Moreover Bangladesh RMG sector will become more advantage with cheap Labor cost. The labor cost one of is the lowest in Bangladesh. The following Table 3, compare average hourly wages (including fringe benefits), in the RMG industry.

With cheap labor advantage, Bangladesh garment industry is still holding competitive position in the global apparel market. Overall percentage of RMG sector growth is continual though the sector hit by the USA market. This industry contributed 78% of share on total trade of good in Bangladesh. Compare to other South Asian countries like India only 14%, Pakistan 23%, Sri Lanka 50% and Nepal 40% respectively (Garment Association of Nepal, 2001).

In general backward integration creates value added and at the same time increase employment. Contribution of RMG sector in Bangladesh manufacturing value-added (MVA) went up from 6.5% in 1993-1994 to 30% in 1998-1999 (CPD, 2002). Another researcher Habib, on the year of 2002

Table 3. Comparative Average Hourly Wages Including Fringe Benefits) in RMG Industry

<table>
<thead>
<tr>
<th>Country</th>
<th>Hourly wage (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>3.56</td>
</tr>
<tr>
<td>Mexico</td>
<td>2.40</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.20</td>
</tr>
<tr>
<td>Thailand</td>
<td>1.04</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.78</td>
</tr>
<tr>
<td>India</td>
<td>0.56</td>
</tr>
<tr>
<td>Pakistan</td>
<td>0.49</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.43</td>
</tr>
<tr>
<td>Vietnam</td>
<td>0.40</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>0.39</td>
</tr>
<tr>
<td>China</td>
<td>0.40</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Sources: Settar (2004)
claimed that the Garment sector value added is only 25%. Generally is much lower compare to other exported items which were contributed 60% to 70% in some cases. Two-third of the garment’s export earnings is spent for fabric purposes. To add more Value added is imperative to build and develop more backward linkages industries from yarn to finishing fabric process in Bangladesh. The following statement again supports this idea (The Daily Star, 1997).

"...the domestic value-added of Jute product, frozen foods, leather, raw jute tea etc, are in the range of 60% - 70%, while value-added of the RMG items is about 25 % or less as it largely dependent on the import of its key raw material, fabric. As the export of RMG is increased by one dollar, it requires an increased import of 0.75$ of fabrics. This is mandatory import. Therefore, as the rate of export of RMG including knitwear increases, the rate of increase of import of fabric would go up by a factor ¼. ...To overcome this, Bangladesh should modern, expand and strength its expanding sector so as to meet the growing demand for fabric coming from its expanding RMG sector by importing raw cotton from any cotton growing country in the world and producing high quality yarn and fabric domestically. This will increase value-added portion of Bangladesh’s RMG sector substantially”.

Supporting all above scenario, it is mandatory to improve backward linkages sub-sector in future. Through strong integration of backward linkages, RMG sector able to save lead time, consequently make the garment product price down in the intentional market.

Answer to the Research Question 4: Why the Centrally Bonded Warehouse (CBW) is Important As An Alternative Solution of Backward Linkages?

It is strongly argued that to become a challenging position globally in apparel sector, RMG industries in Bangladesh need to reduce lead time through backward integration or incase of delay of developing backward linkages, an alternative option to develop Centrally Bonded Warehouse (CBW) facility. The concept of central bonded warehouse is not new. In export processing zone (EPZ) public Bonded Warehouses developed in 1997. Bangladesh garment industry capable to import fabric from EPZ where they not need to import fabric from international market. It is quite a good strategy where raw materials fabric can be stocks in bulk, then required fabric may be distributed to garment industry when and where necessary, thus advance demand can be fulfilled. This CBW will also stock fiber for spinning mills, yarn for weaving and knitting mills, finishing fabrics for garments, dyes and chemical for processing units. It is also stock machineries, spares for both textile and garments, and accessories for RMG industries. Garment industry can have the facility to get imported items from (CBW) just-in-time basis, so garments industry could save lead-time and reduce cost.

Answer to the Research Question 5: What is the Impact on Lead Time Using Long Term Strategy (Development of Backward Integration) or Short Term Alternative Strategy (Expansion of CBW)?

Lead time is the number of days that elapse between a producer receiving confirmed order or letter of credit (LC) and the importer receiving order goods at its warehouse (BGMEA, 2004) Bangladesh’s lead-time is 90-135 days in respect of woven garment industry again compare to Sri Lanka, India, Vietnam and Pakistan around 60-90 days. Comparison has been shown lead-time with other Countries Table 4.

Bangladesh lead-time is some case more
Table 4. Comparison of Lead-Time with Other Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Lead Time (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>15-20</td>
</tr>
<tr>
<td>Mexico</td>
<td>15-20</td>
</tr>
<tr>
<td>India</td>
<td>60-90</td>
</tr>
<tr>
<td>Pakistan</td>
<td>60-90</td>
</tr>
<tr>
<td>Cambodia</td>
<td>60-90</td>
</tr>
<tr>
<td>Vietnam</td>
<td>60-90</td>
</tr>
<tr>
<td>China</td>
<td>60-90</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>90+</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>90-135</td>
</tr>
</tbody>
</table>

Sources: BGMEA (2004)

than 135 days. Currently garment manufacturers/exporters import fabric against back-to-back L/C process. In processing of 90-135 days, importer needs to pay high bank interest for 90-135 days. Furthermore miscellaneous charges, fees, commissions, and extra charges for services of the middlemen involvement required to pay to release the fabric in hand. Besides, there is uncontrollable inventory cost added to the total cost of garment. Eventually cost price reached its unpredicted stage and that certainly forces to quote high price than expected. All above cost involvement only incurred due to non development of backward integration mainly on fabric sourcing purposes.

Answer to the Research Question 6: Why Lead-Time/Delivery Time Get Important Issue for Apparel Marketing?

The apparel market changes its strategy due to certain structural changes in the global market. Many of the changes have occurred demand of the competitive retail market where firms need to survive or thrive. High fashion and high value items demand has reduced where the most of basic markets turns to top seller due to increase demand for consumers. This tendency could also create pressure on the RMG manufacturers of Bangladesh, who produce mostly basic garments. The garment of Bangladesh is known to the world market as low to middle category of items as majority of the appeal standard remains basic. It has been observed that high volume of back-to-school dress with multi million dollar basic clothing imported by the EU organizations. Major international buyers of Bangladeshi clothing include Wal-Mart, JC Penney, Tesco, Zara, TU clothing in Sainsbury’s, George, Adams, Marks and Spencer, Primark, Carrefour, H and S, etc. Many of the retailers’ looks for flexibility in the supply chain such that product can be put on shelf as and when demanded by consumers. The drive for reduction in lead-time is thus an attempt to conform to the market demand as well as achieving greater supply chain efficiency. Another point since the styles of basic items do not change frequently and demand for their products is more stable, mass-market retailers can be more flexible about lead times.

It is also been notice that delivery/lead time get important issue for apparel marketing, where exporters and importers confer top priority. Emphasis on critical value chain elements like delivery, fabric, product quality and their ranking on each category are important. According to Darlie, it has been observed (in case of Indian textile and garments) perceptual distance of overseas importer’s segments vs exporters in case of basic garments, delivery measures as rank-1, product and fabric presented as rank II and III respectively (Darlie, 2006) Now it optioned that delivery/lead time is getting priority over garment importers and many companies strict on short delivery strategy what it can be called just in time basis.

Answer to the Research Question 7: How Backward Integration and CBW Will Influence on Cost-Plus Pricing?

The offered price of garment includes cost-plus pricing. The price includes mainly
raw material price, manufacturing price, logistics price, bank charge and miscellaneous charges. The effect of Backward integration and CBW is great. Currently garment manufacturers/exporters import fabric against back-to-back L/C process. In processing of 90-135 days, importer needs to pay high bank interest for 90-135 days. Furthermore miscellaneous charges, fees, commissions and extra charges for services of the middlemen involvement required to pay to release the fabric in hand. Besides, there is uncontrollable inventory cost added to the total cost of garment. Eventually cost price reached its unpredicted stage and that certainly forces to quote price higher than expected. All above cost involvement only incurred due to non-development of Backward integration and Central bonded warehouse (CBW) on fabric sourcing purposes. Backward integration and CBW can also reduce uncertainty of importing inputs from overseas in case of delay of delivery shipments, transports. Due to port strikes, port lay offs, or even any event of port uncertainties, backward integration and CBW both significantly reduce any kinds of delays i.e.delays in shipment, shipping time, transshipment or port clearance when inputs are imported from overseas. Such delays impose significant costs on exporters as they get less time for production and may be required to ship finished products by air at multiple cost. The delay could also result in the cancellation of the order. Profit margin is eroded due to such occurrences (The World Bank Office, 2005).

Policy Implications for Development of Backward Linkages Sub-Sector:

Analyzing present condition, status and facts and findings of the above in the RMG sector, there are number of target actions in several areas can be considered in policy implications that directly influence with backward integration. From cotton to finished products all steps involves like spinning, weaving, dyeing printing, finishing, accessories are integral part of backward linkage procedure. The study tries to find out the possible suggestion on each sector again with support of different researcher’s statement and potential view of each scenario.

Cotton

Cotton considered the first stage of backward linkage sub-sector which is the main source of producing yarn. Bangladeshi garment industry is fully dependent on imported cotton to fulfill the huge shortfall of yarn sourcing. Though Bangladesh needs to support cotton production but due to scare land in Bangladesh, to build cotton in our country might not be recommended. This strategy supported by Ahmed Khandker Habib, where in this type of production program is not recommended for Bangladesh because of dearth of sufficient land required as well as high cost involve. This project is similar to Anatolia Project of Turkey. (Habib, 2002).

But in the other study Development in Democracy (DID,1991) argues that not having cotton is actually not a disadvantage rather than advantage due to increase encourage to import cotton from high quality supplier rather than imported low quality of cotton from neighboring countries mainly India and Pakistan where low quality of cotton are produced.

But the question arise that Bangladesh garment is not making high quality of garment nor it ranked as fashion/fancy garment market in the international apparel market. Bangladesh garment market is still categorized as low to medium quality of garment in the international market. So it necessary sticks to low to medium range cotton. In case of lower price cotton
Bangladeshi garment face disadvantage as the Indian textile mills buy cotton from Indian growers 25% to 30% cheaper than Bangladesh import the same cotton from India or international market. As a matter of Policy, by allowing this policy, Indian government provides in effect a subsidy to the Indian mill owners (Siddique, 2004). Similar subsidy is given in Pakistan, as a result their price is 20% cheaper than Bangladesh buy same cotton from Pakistan. This is creating a disadvantage. Bangladesh can possibly overcome this situation by reducing conversation cost (labour, power, depreciation, interest and other costs) and improving management efficiency. Government need to take some initiatives like no tariff on cotton import; no quantitative restricted on cotton import; so that importer get cotton cheaper from cotton sourcing and able to keep cotton price down in the local market.

It will be noted that in spite of disadvantage in cotton production in Bangladesh, some Bangladesh mills are taking different strategy to produce better quality yarn than India and Pakistan, as import quality cotton from international sources. But it should noted that their market demand in Bangladeshi garment is limited, as only a few number of fashion garment industry in Bangladesh export fashionable and top quality garment. Now Bangladesh garment industry have a choice either to import low or high quality depends on price and again considering to produce low to high quality yarn to produce low to high quality of fabric for RMG sector.

**Spinning Sector (From Cotton to Yarn)**

Hand loom is the largest support in yarn in the Bangladeshi clothing industry. This sector contributes TK. 10 billion to the National economy and able to fulfill three-fourth of the local requirement in the apparel sector. Bangladesh is only 10% - 20% self-sufficient in spinning in input supply or degree of backward integration in the knitting and woven sector shows in Table 5, indicating of huge short fall of yarn in the RMG sector mainly in export oriented operation. To overcome the gap of yarn demand in the RMG sector, it is mandatory to establish 98 Spinning Mills estimated cost about is cost Taka 73.5 billion equivalent to USD $1.05 billion [Rate US $= Taka 70 (approx.) in year 2009]. Before making huge investment to develop backward linkage sub-sector specially in spinning mills project, it is imperative to assess the level of competitive and viability of this project. Conversion cost and total manufacturing cost should need to consider and must compare with those of the factors with China, India and Pakistan as competitor countries where Bangladesh mainly import cotton from those counties.

It is also suggested by Government of the People's Republic of Bangladesh: Ministry Commerce (2004) that handloom sector needs to be modernized and developed as this sector uses old technology. A comprehensive training as has been designed for the RMG sector Skilled and quality development programme (SQDP) may be chalked out to impart training at the grass root level to make acquainted with modern design, dyeing methods and weaving. The design and development center may be created. The project tenure will be five years at a cost $4.0 million.

The strategy of workers training program will increase skills, improve knowledge on technological developments, ultimately boost up production capacity, improve quality and reduce cost on garments. Management technique like better inventory management is likely to reduce cost of financing which is the largest component of the unit cost. This will have some positive effect on cost of production (Hafiz, 2004) This is one of the main stream to keep yarn price down in the local market subsequently
The weaving sector will get benefit at the end production. Government should take some initiatives i.e. no barrier on import mechanism on back-to-back letter of credits (LCs); no import of yarn through port; recipient of cash subsidy to encourage the private and as well as foreign investors to come forward and develop the spinning field of the backward integration (Ministry of Commerce, 2004).

South Asian Association of Regional Country (SAARC) Cumulation has an impact on the spinning sub sector specially in knitting industry. As per of the new EU rules (SAARC Cumulation) industry will benefit that remove the requirement that the yarn must be locally produced. This means that cheaper imports from India will replace the expensive locally produced yarn. Therefore, new investment spinning sub-sector for knit also is not recommended as per DMA (IFA). But whatever the disadvantage, the government must take consideration to balance the benefit both of the woven and knit industry. To save the knitting industry if government taking particularly cash intensive, encourage foreign investment and other above subsidies encourage knitter to move upwards, so that better quality of yarn will be produced, and will decrease on import fabric from international market. On the other hand lead time of the spinning mills likely to be reduced as this process reduce delivery time for import of fabric, and eventually to reduce cost of production.

Weaving (Fabric)

The analysis of the paper spells out number of points where it is noted that weaving sector is the largest component of backward integration import almost 75% of garment exports. Bangladesh is only 20% self-sufficient in weaving input supply in the knitting and woven sector shows in Table 2, hence showing Bangladesh weaving mills constantly fall shortfall of production owing to chain link shortage of yarn production in spinning sub-sector. As a result the country has to import 3.15 billion meters grey fabric per year.

Shortfall of weaving mills 200 with 10 million meters of fabric each (Hafiz, 2000) can attain self-sufficiency in yarn to fulfill the domestic and export needs in year 2005, which is cost TK 50 crore each, that amounting to TK 100 billion equivalent to USD $1.43 billion [Rate US $= Taka 70 (approx.) in year 2009]. But in case of knitting segment of grey cloth making in Bangladesh is better and the knit grey demand is met by local production. In case of export market presently around 85% the total requirement of the woven market and around 35% of the total requirement of the knit fabric are imported. Due to large demand-supply gap in Bangladesh, the weaving and knitted sub-sectors require to expand at a rapid rate. Soon after MFA phase out, demand for fabric is raised so it is mandatory to increase investment and modernized machinery.

It is necessary private sector should take positive initiatives to support on weaving sub-sector. It is opinioned that woven and spinning sub-sector can be more attractive via large capital investment. If cost effective investment can increase performance in the spinning and weaving sub-sector, then Bangladesh has a possibility of building competitive export oriented sector in the Post MFA era.

Apart from large investment government need to take following waiver of imported tax and VAT from spare parts, dyes and chemicals, support of 5% free on board (FOB) value to deter devaluation of neighboring countries, 7% flat interest rate on all advances/loan, financial subsidy of at least 6% - 7%, waiver of peak hour electricity charges, textile development fund of TK. 50 billions, textile park,
reschedule of container handling charge, training centre for skill development (Habib, 2002). Considering other issues like port charges for garment exports must be reduced, increase labor productivity; reduce cost of doing business, training facilities need to be created by Bangladesh Garment Manufacturers and Exporters Association (BGMEA)/government. Unless these bottlenecks are removed, simple the backward linkage industry may to be fulfilled (Siddiqi, 2004).

**Dyeing, Printing and Finishing**

The final step in the textile industry i.e. Dyeing, Printing and Finishing has improved dramatically over the five years though only a few units can do proper color shading. The sub-sector however efficiency depends mostly on imported grey, which might be supplanted by domestically produced grey if its quality were enhanced.

But in some cases facilities for which still unable to meet the standard of quality demanded by the export-oriented RMG industries. To get quality fabric some options can be considered that includes providing incentives for higher quality domestic grey production to feed finishing industries abreast gradual trim down of incentives on imported grey (Habib, 2002) or the export grey to produce quality fabrics, although a number of hurdles have to be crossed-over by such imports, for example, import taxes, transportation among others (Habib, 2002).

Another strategy, Bonded warehouse will be provided required fabric until local grey production can meet the quality and quantity required the sub-sector”.

Government should withdraw or reduce duty, Advance Income Tax (AIT), infrastructure fees from dyeing, printing and finishing sub-sector to set up new units with appropriate technology.

This dyeing, printing and fabric processing sub-sector are doing well in Bangladesh as this sector need small-scale operations, investment requirements will be within the reach of many entrepreneurs. All these mean that stronger encouragement should be provided for the development of these components of the backward integration (Habib, 2002). This proposition also supported by IFC report where they suggested that Bangladesh would do better if it develops dyeing, printing and fabric processing facilities. This is of course a limited backward integration. According to them for such partial integration need relatively small investment, and therefore from business point of view the entrepreneurs will be required to take much lower risk. More over this sector give quick return of investment and less complexity in the process (Habib, 2002).

**Policy Implications for Development of Central Bonded Warehouse and Its Impact on Lead Time**

**Development of Central Bonded Warehouse (CBW) through Export Processing Zone (EPZ) in Bangladesh**

Central Bonded warehouse facility plays a significant role in garment industry which able to make short lead time and it also considered substitute of backward linkages integration. Government has formed National Coordination Council on RMG, request National Board of Revenue (NBR) to help to build modern CBWs (BGMEA, 2004). The model of Sri Lanka, Pakistan and other countries may be studied to help draft the rules for administering and managing the CBWs. Once the pilot CBW system is determined to be working satisfactorily within the EPZs, setting up CBWs elsewhere in the country may be permitted (BGMEA, 2004). At present EPZ contributes CBWs facility about 15% of the country’s total RMG export (Raman and
Anwar, 2006). Bangladesh government already taken several steps to increase EPZ in different regions in Bangladesh and the expansion is increased in Feni and Munshiganj. District alone with other 8 EPZ zones Dhaka, Chittagong, Mongla, Ishwardi, Comilla, Uttar, Adamjee and Karnaphuli. The meeting was chaired by Chief Adviser Dr Fakhruddin Ahmed. The EPZs will come up on 500 acres of land, each to develop about 600 industrial plots (http://www.fibre2fashion.com/news/industrial-textiles-ews/newsdetails.aspx?news_id=50097). The increased number of EPZ certainly make give double benefits to the RMG sector, one is for different location that save time and cost in transport cost, on the other hand more accessible of raw material sourcing available with.

Central Bonded Warehouse and its Impact on Lead Time

Centrally bonded warehouses (CBW) option for reducing lead time as a feasible alternative to high-cost investment in backward linkage industries which may not always produce inputs at competitive prices. Such an option could potentially save several days of delivery time and could be one way of meeting quick-response orders from buyers (Zaidi, 2004).

It is strongly argued that to establish Central Bonded Warehouse (CBW) that can save huge lead-time 40% to 50% of the exiting lead time. In table 5 indicates number of the days taken by Bangladesh RMG sector from LC to Finished goods reached to the buyer hand. In Table 5 shows that the garment industry can save time upto 45 days if garment industry supply fabric from Central Bonded Warehouse (CBW). From table 4, under heading of OPTIMAL column 45 days can be saved out of 90 days: The below four processes from 2 to 5 accumulated 45 days:

(2). RM Supplier Receives B/B LC ........................................... 4 days
(3). RM Supplier Produces and Ships Goods .................................. 15 days
(4). RM Sails and Reached Chittagong Post .................................. 21 days
(5). Port Clearance and Inland Transportation ................................. 5 days

Total 45 days

Again other processing days under NON-OPTIMAL cases, can be saved upto 75 days out of 135 days shown in Table 5. To create CBW that will stock material for the entire Textile and Clothing (T&C) as well RMG sector. Backward linkage in-

<table>
<thead>
<tr>
<th>COMPONENTS:-</th>
<th>Days taken after processing step</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Producer Receives LC</td>
<td>OPTIMAL 0</td>
</tr>
<tr>
<td>2. RM Supplier Receives B/B LC</td>
<td>4</td>
</tr>
<tr>
<td>3. RM Supplier Produces and Ships Goods</td>
<td>15</td>
</tr>
<tr>
<td>4. RM Sails and Reached Chittagong Post</td>
<td>21</td>
</tr>
<tr>
<td>5. Port Clearance and Inland Transportation</td>
<td>5</td>
</tr>
<tr>
<td>6. Garments Produced and Shipped</td>
<td>20</td>
</tr>
<tr>
<td>7. Finished Goods Sails and Reaches Buyer</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL LEAD TIME</td>
<td>90</td>
</tr>
</tbody>
</table>

Sources: BGMEA (2004)
cludes spinning, dyeing, printing, and finishing section. So ready stock for backward linkage supports such as (1) fiber for spinning, (2) dyed yarn for weaving and knitting, (3) dyes and chemicals for processing unit, and (4) trims/accessories can save huge lead time for RMG sector.

**Policy Implications for Strategy for Short Lead Time**

The long lead time in Bangladesh is mainly due to the absence of a strong integrated backward industry. So to make short lead time, enhance support of backward linkage integration is vital. It is important to increase productivity through training as training is always considered as an effective instrument that upgrades skills, efficiency, increase motivation, flow of work and assure international quality. It is recommended speedy disposal of export order. There are some strategies that can over prevent delay processing of logistic support in supply system. Proposal for direct shipping lines, deep sea port for mother vessels, private warehouses, private port and green channel, bonded warehouse have been raised this is under consideration of the Government. The following daily newspapers article supported the statements (The Daily Star, 1997)

"Reducing the “Lead Period” the government can allow private bonded warehouse to store raw materials, establish direct shipping link with major Southeast Asian ports and deep sea port. It takes about 20-25 days for raw material to reach Chittagong port from major Southeast Asian ports. If a deep sea port is established at a suitable place for berthing mother vessels, the raw materials would reach each within 10 days time. On the other hand, private bonded warehouses can collect raw material and supply it to the garment manufacturers according to their requirement, which would make the execution process faster”.

**Conclusion**

Emergence of the global trade and Multi fiber Arrangement (MFA) phase-out, lead the textile and clothing industry more competitive in the apparel market. Bangladeshi garment industry faces the consequences that make a wake up call to this sector. To maintain high export percentage in the RMG sector, it is not only possible supported by cheap labour but also need development of back-ward linkages and expansion of CBW facility that ultimately make speed of delivery. The development and implement of Back-ward integration or Central Bonded House (CBW) strategy keep short lead-time and force price lower than present quoted price in the RMG sector.

It is suggested that if the local backward linkage industry is not developed, then an alternative short-run strategy i.e. central bonded warehouse (CBW) temporarily overcome gap of backward linkage facility. The present study finds that overall progress of CBW is limited to only in EPZ areas where EPZ maintain Bonded warehouse facility. But to build central bonded house facility it requires float money USD 0.43 billion (Take 3000 crore equal to Taka 30 billions, 1 USD = Taka 70, year 2009). Where as to develop Backward linkages sub-sectors mainly spinning and weaving sector require USD 2.48 billion (Take 173.5 billions, 1 USD = Taka 70), year 2009) which five to six times higher investment than CBW, need huge investment where Bangladesh needs private entrepreneurs’ initiatives along with government support.

Benefit of backward integration, CBW is enormous i.e. increase price competitiveness by lower the cost plus prices, reduce lead time in some case more than 50 % than of the present stance that certainly made more value addition. Although garment exporters claim that they are the highest foreign exchange earners with a 76 % share of
total exports, the fact is that over half of the earnings are remitted out as payment for imported raw material hence showing less value addition. But in case of social impact RMG sector is showing huge contribution for the country i.e. save the country from significant reductions in export earnings and creation of employment in the global recession time and it will boost up its export performance to the global market.

Finally it can be said that to sustain in competitive in the free trade apparel market, at same time to face the financial "Tsunami" in the world market; price and speed delivery could be vital issue for ready-made garment industry of Bangladesh.

References

Bangladesh Garment and Manufactures Association – BGMEA (December 2006-7), Garment Export Data from Online.


Bangladesh Garment and Manufactures Association – BGMEA (2005), MFA and Bangladesh -Ground Rules for Being Competitive Organized by BGMEA, January.


Centre for Policy Dialogue – CPD (2002), Contribution of the RMG sector to the Bangladesh Economy, October.

Development in Democracy, Inc. (1999), Review of the Interim Report: Bangladesh Textile Study (Phase II), June, City Heart, Outer Circular Road, Dhaka, Bangladesh and 1310 Colvin Forest Drive, Vienna, VA USA.


Export Promotion Bureau – EPB (2005), Dhaka: Data-Data.


Instructions to Contributors

Aim and Scope

The South East Asian Journal of Management (SEAM) aims to present the latest thinking and research that test, extends, or builds management theory and contributes to management practice.

Contents of the Journal will be of interest to management teachers, student and researchers as well as to practicing managers and material will be analytical rather than descriptive.

Whist a major focus of the journal is on the Asian countries and management issues connected with it, increasingly, global concerns and conceptual topics will be covered. The Journal does not take a narrow view of business and management and will publish in other disciplines if they contribute significantly to problems considered by managers and researchers.

To be published in SEAM, a manuscript must make strong empirical and theoretical contributions and highlight the significance of those contributions to the management field. Thus, preference is given to submissions that test, extend, or build strong theoretical frameworks while empirically examining issues with high importance for management theory and practice.

Manuscripts

Manuscripts must be double-spaced on 8 1/2 x 11". Manuscript length should be reasonable for the contribution offered.

Manuscripts are reviewed by the editor, members of the SEAM Editorial Review Board, and occasional reviewers. The author’s name and affiliation are removed before reviewing in order to ensure objectivity. Please do not identify the author(s) in the body of the paper either directly or by citation.

The structure of the manuscript should be as follows:

I. Abstract
II. Introduction
III. Literature Review
IV. Methodology
V. Result and Discussion
VI. Conclusion
VII. References

With the submission of a manuscript, the following three items should be included:

1. Cover page showing title, each author’s name, affiliation, complete address, telephone and fax number, and the category of the article. Select one category from the following: Finance, Capital Market, Policy, Accounting, Marketing, Human Resource, Innovation, Strategic, and Organization.
2. Abstract of up to 150 words.
3. Keywords.

Soft copy of the article should be sent to:

Dr. Sari Wahyuni
Editor in Chief
The South East Asian Journal of Management
Graduate School of Management
Faculty of Economics
University of Indonesia
PAU Building, Kampus Baru UI,
West Java, Indonesia
Phone: +62-21-7270164 or 7872588-89
Fax: +62-21-78849155 or 7270164
Email:seam@pascafe.ui.ac.id