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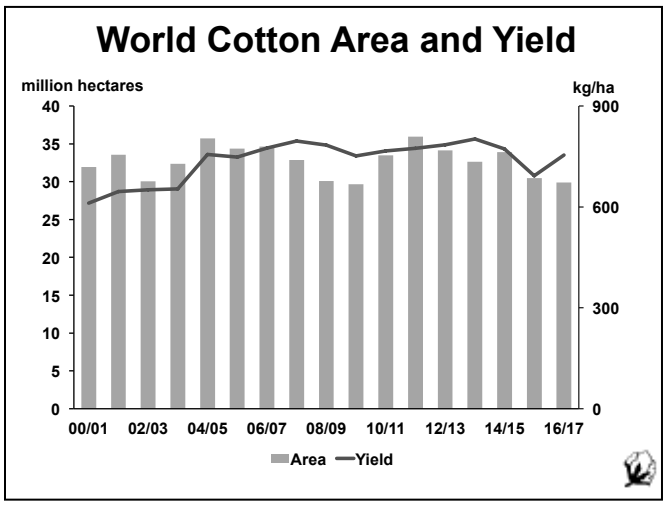
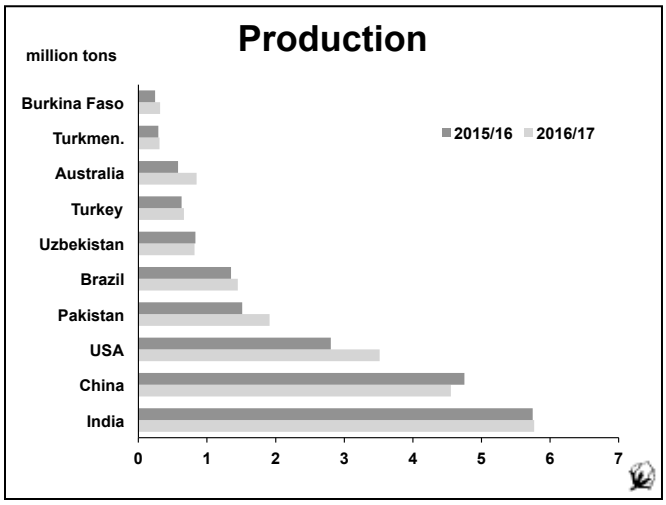
SUMMARY OF THE OUTLOOK FOR COTTON

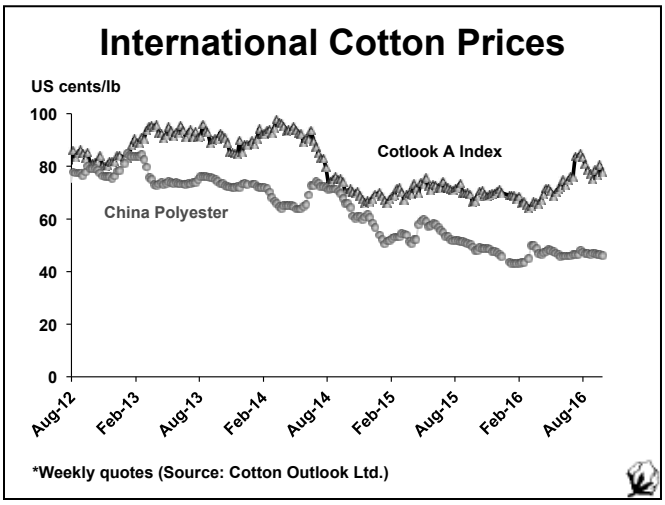
Increased Production in the USA, Pakistan and Brazil Will Offset Losses in China

In 2016/17, the world cotton area is forecast to fall by 1% to 30 million hectares, which is the smallest amount of area under cotton since 2009/10, when the planted area reached 29.7 million hectares. While the average yield is projected to improve by 9% to 753 kg/ha, it will still remain below the 10-year average of 770 kg/ha. As a result, world production in 2016/17 is expected to increase by 7% to 22.6 million tons. Cotton area in India contracted by 8%, to just under 11 million hectares, due to competition from other crops such as maize. However, a 9% increase in the average yield to 526 kg/ha will likely offset the losses in area and production is expected to remain stable at 5.8 million tons. China's cotton production is projected down 4% to 4.6 million tons. Despite a 3% gain in the average yield to 1,600 kg/ha, as the planted area expands in Xinjiang where yields are generally higher than in other cotton-growing provinces, the total area brought under cotton shrank by 7% to 2.8 million hectares, the lowest in more than 30 years. Higher cotton prices compared to competing crops at the time of planting led to a 20% increase in cotton area in the United States, estimated at 3.9 million hectares. Beneficial weather during the growing season is expected to lead to a reduction in the abandonment of cotton plantings and a 5% improvement in the average yield to 899 kg/ha. As a result, cotton production in the United States is forecast to increase by 25% to 3.5 million tons. Although the cotton area in Pakistan declined by 12% to 2.5 million hectares, its production in 2016/17 is projected to rise by 26% to 1.9 million tons. After the average yield dropped 32% to 528 kg/ha in 2015/16 due to a pink bollworm attack, preventative measures, such as a shift to pesticides targeting pink bollworm, are expected to improve the national average yield in 2016/17 by 43% to 756 kg/ha. Improved yields in Brazil could increase its cotton production by 7% to 1.4 million tons.

In 2016/17, world cotton consumption is forecast to remain unchanged from 2015/16 at 23.8 million tons, but is projected to exceed production by 1.3 million tons. Although China's consumption is forecast to decline for the seventh consecutive season by 2% to 7.2 million tons, it will continue to be the world's largest consumer of cotton. However, its share of world consumption is expected to fall from 58% in 2015/16 to 53% in 2016/17. Although domestic cotton prices have fallen since China implemented its direct production subsidy







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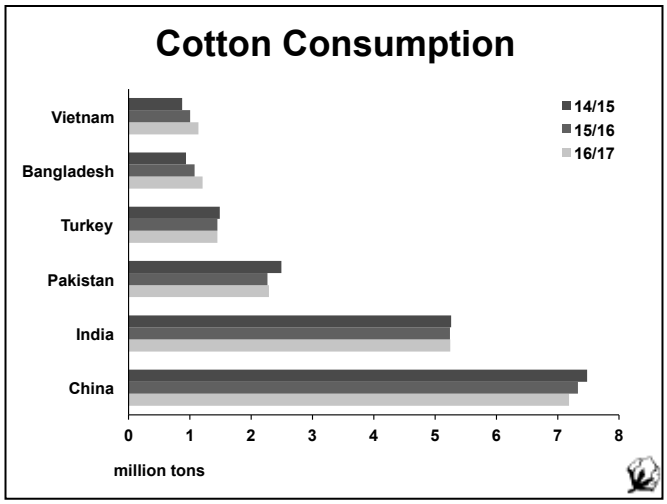
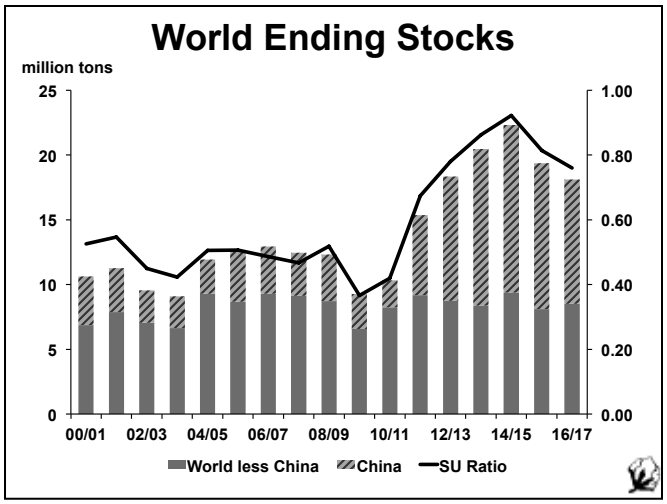




policy, they remain above levels on the international market and well above polyester prices. India's cotton consumption is projected to remain stable at 5.2 million tons as mills increase the share of other fibers in cotton-blended yarns due to the lower and more stable price of man-made fibers. Pakistan's mill use is expected to increase by 23,000 tons to 2.3 million tons, assuming that the energy situation improves. Mill use in Turkey, the world's fourth largest consumer, is forecast to remain unchanged at 1.5 million tons.

Exports from the United States are projected to increase by 26% to 2.5 million tons, due to a larger exportable surplus in 2016/17. Exports from India, the second largest exporter, are forecast to fall by 35% to 820,000 tons, as a result of a smaller crop and stable domestic consumption. Bangladesh is expected to remain the world's largest importer as its volume increases by 10% to 1.2 million tons in order to satisfy growing demand. Similarly, Vietnam's imports are projected to rise by 15% to 1.1 million tons. After four seasons of decline, China's imports may increase by 2% to 977,000 tons in 2016/17 as the government is likely to continue limiting cotton imports in 2017.

World stocks are projected to decline by 7% to 18.1 million tons. Total sales from the Chinese government reserve in 2016 are estimated at 2.6 million tons, which brings the total volume of cotton held by the Chinese government down to 8.4 million tons at the end of September 2016. China's stocks at the end of 2016/17 are forecast to decline by 15% to 9.6 million tons, while stocks held outside of China could increase by 5% to 8.5 million tons.

COTTON CONSUMPTION IN INDIA AND PAKISTAN SINCE 2005

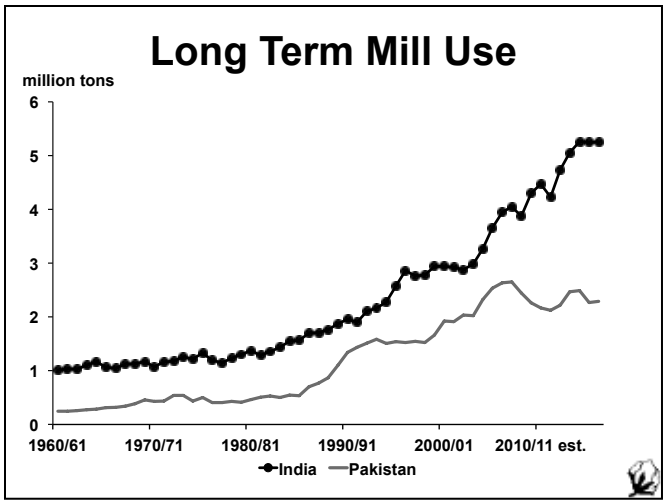
By Rebecca Pandolph, ICAC

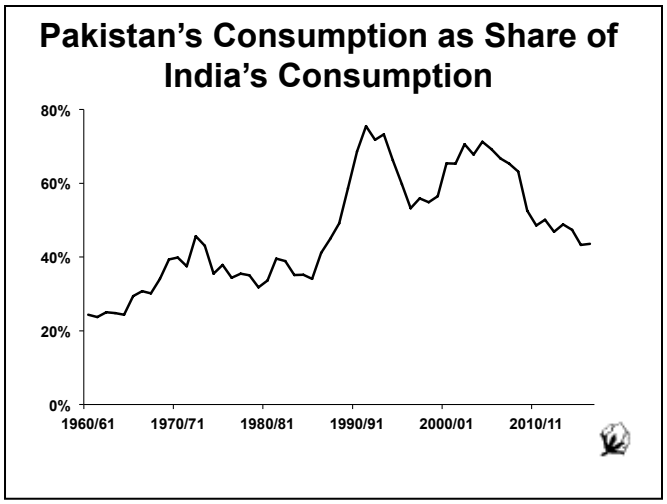
India and Pakistan are currently the second- and third-largest consumers of cotton in the world. However, while mill use in India greatly expanded the last ten years, averaging 5% a season since 2004/05, Pakistan's mill use has grown at a much slower rate, averaging 1% a season. On January 1, 2005, global textile quotas came to an end, greatly opening the market, but did not guarantee growth since several other factors influence the performance of the sector. This study will examine the factors shaping the current trends in consumption in these two countries, in order to better understand the differing growth patterns of cotton mill use.

Historical and Current Patterns of Consumption and Trade

Consumption of Cotton Lint in India and Pakistan

While Pakistan started at a lower level of mill use in 1960/61 than India, their growth patterns followed similar paths until the mid-1980s. Between 1960/61 and 1985/86, Pakistan's mill use increased by an average of 4% a season, growing from 245,000 tons to 533,000 tons. During the same period, India's mill use expanded by an average of 2% a year, from 1 million tons to 1.6 million tons. Over the next five seasons, India's cotton consumption increased by 5% a year while Pakistan's





increased by 21% a year, narrowing the gap between the countries. India's consumption averaged 1.8 million tons per season during that period and that of Pakistan averaged 955,000 tons. In 1985/86, the volume of mill use in Pakistan was equal to 34% of India's consumption, rising to 70% by 1990/91. In the following six years, India's mill use picked up, growing from 1.9 million tons to 2.9 million tons, an average growth of 7% a year. Meanwhile, mill use in Pakistan grew at 2% a year during the same period, from 1.4 million tons in 1991/92 to 1.5 million tons in 1996/97.

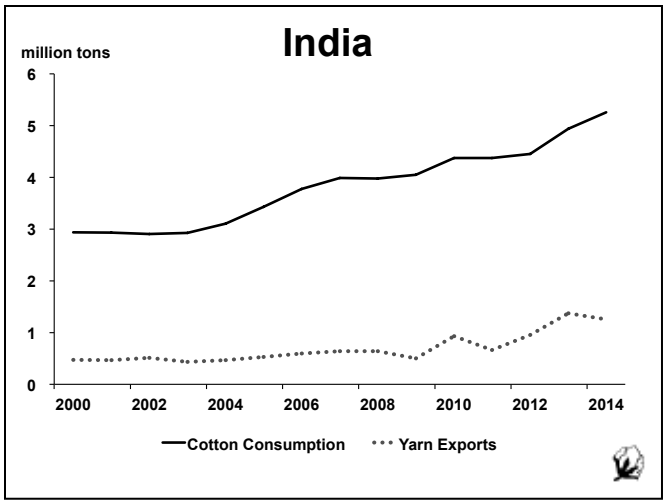
After a downturn in 1997/98, mill use in India remained fairly flat, averaging 2.9 million tons a season over the next six seasons. Cotton consumption in Pakistan, on the other hand, expanded by 25% from 1997/98 to 2000/01. Pakistan's mill use averaged around 2 million tons over the next three seasons, until increasing by 15% to 2.3 million tons in 2004/05. Cotton consumption in India increased by 4% to 3 million tons in 2003/04, and by 9% to 3.3 million tons in 2004/05. In January 2005, textile quotas were eliminated. In the next three seasons, Pakistan's cotton consumption continued to expand, but at a slower pace, reaching 2.6 million tons in 2007/08. Meanwhile, consumption in India grew by 12% to 3.7 million tons in 2005/06, although growth also slowed in the next two seasons, with mill use reaching 4.1 million tons in 2007/08.

Mill use declined in both countries in 2008/09 as the global recession weakened global demand. However, while India recovered over the next two years, cotton consumption in Pakistan continued to fall. The price spike in 2010/11 slowed consumption in India and further depressed it in Pakistan. In 2011/12, mill use in India contracted by 5% to 4.2 million tons, while falling by 2% to 2.1 million tons in Pakistan, to a level similar to that prevailing in the early 2000s. Over the next three seasons mill use expanded in both countries, increasing by 11% to 5.3 million tons in India and 12% to 2.5 million tons in Pakistan. This was the same period during which China implemented a system of minimum support prices by directly purchasing cotton from producers and rebuilding the government strategic reserve. At the same, China controlled cotton import volumes by applying border protection measures based on quotas and sliding scale duties, with an effective tariff of 40% for cotton imported without a quota. However, cotton yarn imports were not subject to duties and China's imports of cotton yarn increased significantly during this period.

Cotton Yarn Trade: India, Pakistan and China

China's cotton yarn imports increased from 275,000 tons in 1995 to over 475,000 tons in 2005, growing by 7% a year.[1] India's exports of cotton yarn to China increased by 4% a year, from 15,700 tons in 1999 to 30,600 tons in 2005. During this period, India represented 5-6% of China's total yarn imports, while the share of India's exports that were shipped to China increased slightly. The share of China in Indian yarn exports rose from 4% in 1999 to 6% in 2005. Pakistan's exports of cotton yarn increased from 61,100 tons in 2003 to 107,200 tons in 2005 and its share of China's cotton yarn imports increased from 15% to 23% during this period. China also represented a larger share of Pakistan's cotton yarn exports than it did for India. In 2003, 12% of Pakistan's cotton yarn exports were shipped to China, increasing to 18% in 2005. After increasing by 20% to 573,000 in 2006, China's cotton yarn imports remained stable in 2007 before declining to 480,000 tons in 2008 as the global recession lowered demand. India's cotton yarn exports increased by 13% to 598,000 tons in 2006 and by 7% to 639,000 tons in 2007. However, while its exports to China increased by 80% to 54,600 tons in 2006, they fell by 50% to 27,100 in 2007. In 2008, India's cotton yarn exports remained unchanged, but its exports to China increased by 18% to 32,000 tons. In 2006, Pakistan's cotton yarn exports increased by 15% to 680,000 tons and, like India, the share of exports shipped to China increased much more

1) The source of data is UN Comtrade (http://comtrade.un.org/). Cotton yarns include blends of 50% or more cotton by weight and are classified as HS codes 5204, 5205, 5206 and 5207.

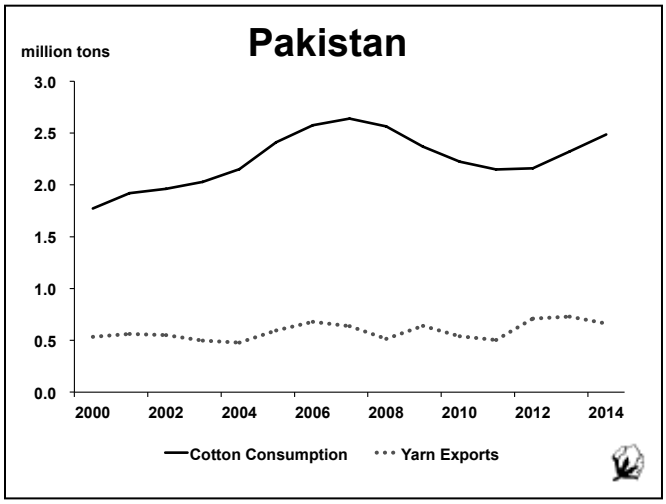


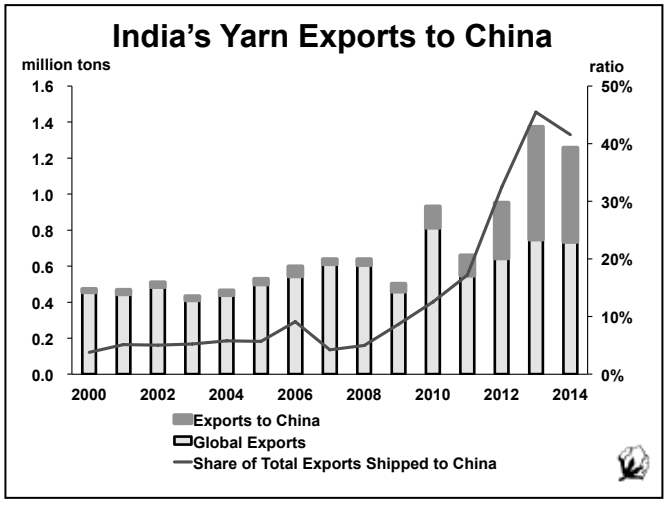
significantly as they rose by 40% to 150,000 tons. However, Pakistan's total exports decreased by 7% to 636,000 in 2007 and by 19% to 513,000 tons in 2008. While exports to China increased by 3% to 154,000 tons in 2007, they fell by 2% to 150,000 tons. In 2008, cotton yarn from India accounted for 7% of China's total imports while imports from Pakistan accounted for 31%.

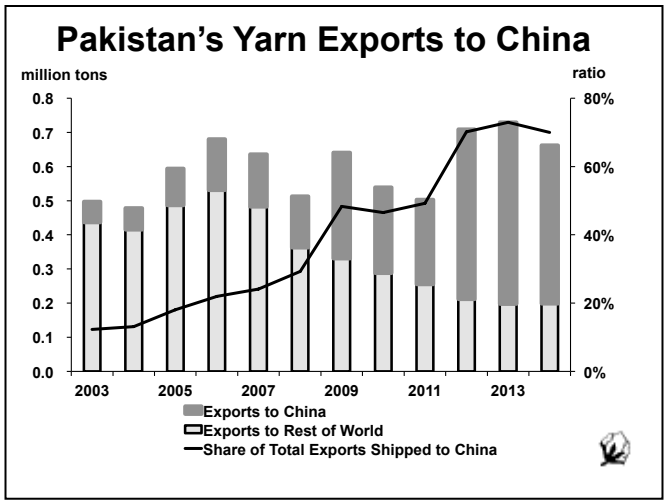
Cotton yarn imports by China recovered by 53% to 733,000 tons in 2009 and increased another 14% to 833,000 tons in 2010. While India's total cotton yarn exports fell by 21% to 503,000 tons in 2009, its exports to China increased by 37% to 43,600 tons. Pakistan on the other hand saw both total exports and exports to China increase in 2009, with total exports rising by 25% to 641,000 tons while exports to China more than doubled, reaching 310,000 tons. In 2010, cotton yarn exports moved in opposite directions for India and Pakistan. India's total exports nearly doubled to 932,000 tons while its shipments to China almost tripled, reaching 117,000 tons. Total exports from Pakistan decreased by 16% to 539,000 tons, while exports to China fell by 19% to 251,000 tons in 2010, due in part to a temporary 15% duty applied to yarn exports after a shortage was created on the domestic market in 2009 due to significant volumes of yarn exports that year. As a result of an unexpected surge in demand and a shortfall in the world cotton crop, international cotton prices rose sharply in 2010. In 2011, cotton prices reached an all-time high, averaging 200 cts/lb, which decreased demand for cotton and cotton products. China's cotton yarn imports fell by 10% to 751,000 tons in 2011. India's cotton yarn exports fell by 29% to 660,000 tons and its exports to China by 3% to 113,000 tons. Similarly, Pakistan's exports decreased by 7% to 503,000 tons while its exports to China declined by just 1% to 248,000 tons.

In March 2011, the Chinese government announced that it would purchase cotton from the 2011/12 crop if domestic prices fell below 19,800 yuan per ton (equivalent to US$1.50/lb) and ended up purchasing 3.1 million tons of domestic cotton that season. In 2012, China's cotton lint imports declined by 17% to 4.4 million tons, since the availability of tariff-rate quota imports associated with lower duties was somewhat limited. However, no duties existed on cotton yarn imports and these increased by 81% to 1.4 million tons in 2012. India's total shipments of cotton yarn increased by 44% to 952,000 tons, while exports to China nearly tripled, reaching 309,000 tons in 2012. Exports from Pakistan increased by 41% to 709,000 tons, while shipments to China doubled to 497,000 tons. China's imports increased by 41% to 1.9 million tons in 2013, before decreasing by 3% to 1.7 million tons in 2014 following the implementation of a new cotton policy. Indian exports followed the same trend as imports by China. In 2013, total cotton yarn exports increased by 44% to 1.4 million tons, while shipments to China doubled to 624,000 tons. In 2014, India's exports fell by 8% to 1.3 million tons and its exports to China by 16% to 1.7 million tons. Exports from Pakistan slowed in 2013, rising by 3% to 730,000 tons for total exports and by 7% to 532,000 tons for shipments to China. In 2014, the trend reversed as global exports declined by 9% to 662,000 tons and shipments to China by 13% to 463,000 tons.

From 2012 to 2014, shipments to China accounted for a significant share of total shipments from both India and







Pakistan. China represented less than 10% of India's total cotton yarn exports before 2009. In 2010, 13% of all of India's exports were shipped to China. China's share of Indian exports continued to rise over the next three years, representing 17% in 2011, 32% in 2012, and 45% in 2013. However, China's share decreased to 42% in 2014 as Indian exports to China fell much more than its total exports. With regard to Pakistan, exports to China have represented a much larger share of its total exports than for India and for a longer period. By 2007, China was the destination of a quarter of Pakistan's cotton yarn exports. Between 2007 and 2009, nearly 50% of Pakistan's cotton yarn shipments went to China. In the next three years, nearly three-quarters of Pakistan's total exports were destined for China, accounting for 70% in 2012, 73% in 2013 and 70% in 2014. However, Pakistan and India represented a much smaller share of China's total imports over the years. From 2012 to 2014, India accounted for around 28% of China's imports while Pakistan accounted for 30%. This indicates a greater dependence of Pakistan and India on China as an export destination than they are as a source of cotton yarn imports. However, the fact that exports to China accounted for a smaller percentage of total exports in 2014 indicates that both countries may be diversifying their cotton yarn export markets.

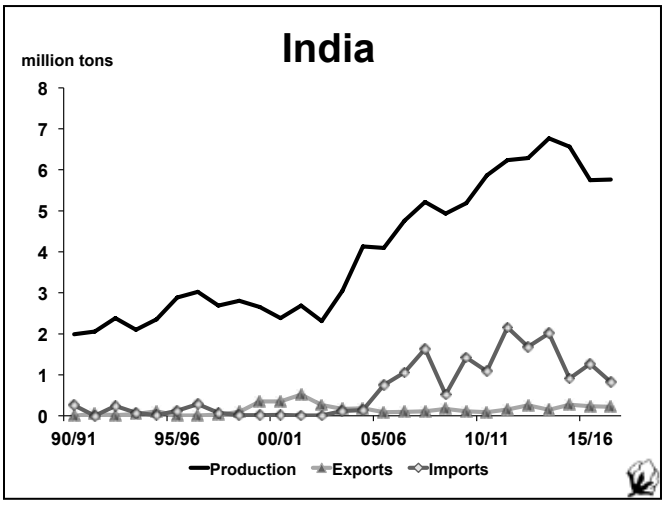
Factors Affecting Cotton Lint Consumption and Yarn Production

Yarn Production Costs

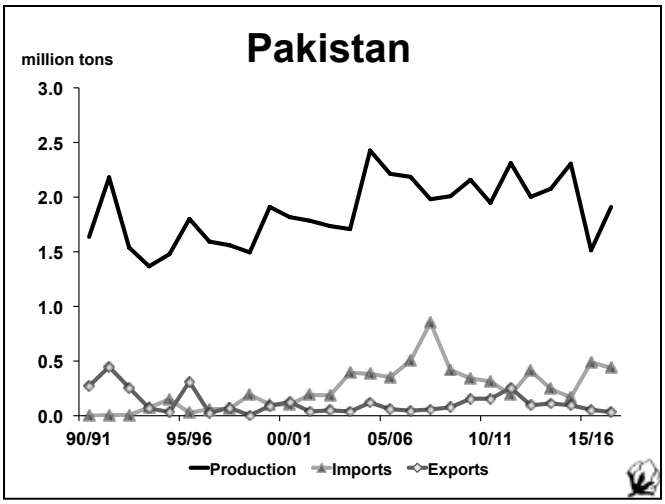
While some of the cotton consumed is used for other purposes, such as the production of technical textiles, much of it is used to make cotton or cotton-blend yarns in both India and Pakistan. There are several components to yarn production costs, including raw materials (cotton), labor, energy, auxiliary materials and capital. While costs vary between countries and according to the type of spinning machinery used, raw material costs generally tend to account for more than half the total cost, followed by capital costs (depreciation and interest). Power and labor costs tend to make up a much smaller proportion of total yarn production costs, usually less than 15% combined.[2]

As well as being large consumers of cotton, Pakistan and India are also large producers, ranking first and fourth in 2015. The large supply of cotton lint reduces the need for imports of their domestic spinning industries. Pakistan was a net exporter of cotton until the early 1990s, but has been a net importer in nearly all subsequent seasons. India was a net importer of cotton during the 1960s and much of the 1970s. During the 1980s and 1990s, it was a net exporter in most seasons, as growth in production slightly outpaced growth in mill use. However, from 1998/99 until 2004/05, it became a net importer and import volume was greater than export volume by 230,000 tons on average. From 2005/06 onward, this trend was reversed, as India exported an average of 1.3 million tons and imported 155,000 tons annually. Much of India's cotton imports in recent years is comprised of qualities not available on the local market. Domestic availability of cotton can help to reduce raw material costs stemming from international shipping, exchange rate fluctuations and price variations. Both India and Pakistan produce polyester, which is often blended with cotton in yarn production.

As a result of the intensive use of machinery in yarn production, the price and, in some cases more importantly, consistent availability of high-quality energy is also an important factor. However, energy demand quickly outstripped supply in both countries as their economies grew. India has experienced significant power outages, with a notable blackout in 2012.[3] The government of India announced plans in 2014 to reform the country's electricity sector, including an increase in the



2) International Textile Manufacturers Federation. (2014), page 25.
3) See, e.g. Daniel, F.J. (2012) and Samdani, T.N. (2012).



production of renewable energy in order to lessen reliance on coal and a reduction in the financial burden of the electricity sector.[4] Although the reforms are still ongoing and no significant power outages have been reported recently, the ability for the electricity sector to keep up with growing demand remains uncertain. Pakistan has experienced similar large-scale power outages more recently, which have negatively affected its textile sector.[5] At the time of the writing of this report, the energy crisis in Pakistan remains unresolved, although corrective efforts are being implemented. While electricity is not one of the largest cost components of yarn production, supply of high-quality reliable electricity will be an important factor for the expansion of cotton mill use in both countries.

Heavy use and improved productivity of spinning machinery minimizes labor costs for yarn production. Furthermore, wages in India and Pakistan are still relatively low, compared to China which has been an important buyer of their yarn exports in recent years. The minimum wages in Pakistan and India are similar, though rates applicable to workers in India vary among states.[6] Monthly minimum wages for unskilled garment workers in India ranged from around US$90 to US$140, while the minimum in Pakistan is around US$125.[7]

International Textile Trade Policy

Since the early 1960s, trade in apparel and textiles, including cotton yarn, operated under a system of import quotas that was outside normal trading rules. The Multifiber Arrangement (MFA) governed this system from 1974 to 1994 and provided a framework for bilateral agreements or unilateral actions to establish quotas limiting imports into countries whose domestic industries were suffering from competition. In 1995, as part of the World Trade Organization's Uruguay round, the Agreement on Textiles and Clothing (ATC) replaced the MFA, with the goal of bringing the sector under normal trading rules, including phasing out all import quotas by January 1, 2005.[8] The ending of the import quota system was expected to bring about increased competition on price and quality, to the benefit of several Asian countries, particularly China.[9] Meanwhile, other trading systems and agreements that are not specific to textiles remain in force.

The European Union (EU) allows developing countries to pay reduced or no duties on their exports to the EU under its Generalized Scheme of Preferences (GSP). Pakistan had access to the EU market through the GSP for many years and was granted duty-free access on the majority of all exports under a special arrangement. This special arrangement was in place from 2002 to 2005, but ended when India successfully challenged part of the GSP through the WTO.[10] In January 2014, the EU granted GSP plus status to Pakistan, which means that its textile exports have duty-free or lower duty access. More than 76% of Pakistani exports to the EU, including textiles and clothing, are free from duties and quotas, accounting for nearly 20% of Pakistan's total exports.[11] India also had access to the EU market through the GSP for a long time. However, in January 2014, Indian textile products were removed from the GSP of the EU as a result of strong textile export growth. The USA has a similar GSP system that provides preferential duty-free treatment for over 3,500 products from a wide range of countries. Both Indian and Pakistan are eligible for GSP status, but a large share of their textile exports is excluded.[12]

As mentioned above, yarn exports from both countries grew immediately after the end of the MFA and ATC. However, other tariff and non-tariff barriers still exist. Textiles have been excluded from the GSP system of the USA and are subject to tariffs. Non-tariff barriers can also hinder trade. These include compulsory custom documentation and origin requirements, short payment terms that restrict import financing, and non-transparent customs valuation among other things. Global access is important for all stages of the value chain as it not only provides a larger market, but can also boost domestic demand for upstream products such as yarn.

Domestic Textile Policy

Since both India and Pakistan are cotton producers and consumers, governments in both countries have developed domestic policies that affect different parts of the value chain.

4) Buckley, T. (2015).
5) See, e.g., Business Recorder. (2015) and Dawn. (2015).
6) Sectoral Activities Department, International Labour Office. (2014), p. 17.
7) Van Klaveren, M. (2016).
8) For more information on the MFA and the Agreement on Textiles and Clothing, see the World Trade Organization (n.d.).
9) See for example, Ernst, C., Ferrer, A.H., & Zult, D. (2005).
10) Lopez-Acevedo, G., Robertson, R. (2012) p. 97-99.
11) European Commission (n.d.).
12) Office of the United States Trade Representative. (2016).

India liberalized the trade of cotton lint in July 2001, dispensing with the system of allocation of cotton export quotas in favor of different agencies and traders, while cotton yarn exports have been exported under open general license without quantity restrictions since 2011. Strong growth in cotton production opened up the way for less restricted exports, but potential production shortages can reverse this. For example, in 2012, the Indian government temporarily banned cotton lint exports in order to assure sufficient availability for domestic spinning mills. In December 2014, the government of India removed the requirements for cotton and cotton yarn exports to register with the regional Directorate General of Foreign Trade authorities and also relaxed other bureaucratic procedures.

The government of India has also implemented several policies to assist the textile sector. Since 1999, the government of India provided support, through lower interest rates on loans, for purchases of capital goods and improved technology through its Technology Upgradation Fund Scheme. This policy helps to reduce the capital costs of yarn production, which comprises the second-largest share of yarn production costs. After the volatility in the cotton market in 2010-2011, the government provided debt restructuring for spinning mills and other textile manufacturers.

From 1999 to 2006, the textile sector in Pakistan made significant investments in balancing, modernizing and restructuring the sector in order to improve efficiency after the end of global textile quotas. The textile sector invested in new infrastructure and upgraded textile machinery. Pakistan also has a similar policy to help reduce capital costs by including duty-free importation of machinery in its 2014-2019 textile policy. It also has a policy of drawing back local taxes and levies if a textile exporter increases its exports by 10% from the previous year. Pakistan does not impose quantitative restrictions or duties on cotton lint imports or exports.

Conclusion

Cotton consumption in both countries is affected by many factors and, as a commodity that is widely traded at all stages of the value chain, by both domestic and international policies. Both countries have invested government resources in their textile sectors and have access to international markets. This may facilitate growth, but does not guarantee it because of other factors. Both India and Pakistan have similar costs. However, as a significant net exporter of cotton, India's spinning mills have been better able to reduce raw material costs than Pakistan. Consistent availability of high-quality energy seems to be a more significant factor for expanding textile growth in both countries than actual energy costs. India has already taken significant steps to remedy this situation, while Pakistan is not as advanced. China has also been an important buyer of cotton yarn from both countries in recent years, but increased competition from lower cost suppliers, such as Vietnam, and weakened demand from China necessitates a change in strategy if consistent growth is to be achieved. Trying to compete solely on price when there are other lower cost suppliers is likely to be a losing battle. In addition to expanding the number of countries to which they export and thereby reducing reliance on a single buyer, as preliminary figures for 2015 yarn exports show India has done, India and Pakistan could also look at diversifying the products they offer, following the example of other high-cost producing countries, or focusing on increasing domestic demand for cotton yarn. If consumption growth is to occur, the textile sectors of both countries must be ready to adapt to a rapidly changing environment.

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POLICY-DRIVEN CAUSES FOR COTTON'S DECREASING MARKET SHARE OF FIBERS[13]

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The story of cotton's decreasing global market share parallels the history of the World Trade Organization (WTO), which was expected to become reality during the early 1990s, was actualized in 1995, and which saw the accession of China to full membership in 2001. Between 1990 and 2015, cotton's global market share decreased from 49.1% to 27.6%. Furthermore, all categories of fibers other than polyester lost market share.

The dominant cause of cotton's market-share losses is the combination of government policies around the world, especially in China and the Asian subcontinent, following China's accession to the WTO.

The methods China has used to accomplish its policy objectives are as follows:

- Regarding manufacturing capacity, cotton supply, and polyester supply, China has intervened at the structural level. The central government has manipulated the financial and legal levers of power to enable an unprecedented 'explosion' of infrastructure. Much of the manufacturing capacity consists of state-owned enterprises. Policies such as zero-cost capital, forgiveness of debt, repeated infusions of government-controlled funds to cover operational costs, restriction of currency outflows, etc. have been very effective in making China extraordinarily dominant in both fibers and textiles since the early 2000s.

13) Expanded paper with footnotes and references available in Proceedings of International Cotton Conference Bremen 2016, from Cotton Incorporated, or from author. Analysis funded by the Texas State Support Committee of Cotton Incorporated.

- Excesses enabled by the central government policies were magnified by additional excesses of provincial governments, which were not sanctioned by national authorities. Governments at all levels have fostered economic 'bubbles', while actions that might burst these bubbles have been avoided.
- Regarding cotton infrastructure, the government has financed and overseen the development of large-scale, government-controlled cotton production in the western province of Xinjiang, which now produces over two-thirds of China's cotton. In a correlated initiative, additional textile manufacturing capacity is being added in Xinjiang and laborers are being relocated from eastern provinces to work in the industry there.
- Policies affecting pricing competition between cotton and polyester have included both leveraged infrastructure and domestic price controls. This includes egregious over-capacity of polyester production, combined with an extended disconnect between domestic versus global prices of cotton.

The evidence is apparent from the cumulative and interactive effects of policy impacts on (1) global textile manufacturing capacity, (2) global cotton supply, (3) global polyester supply, and (4) pricing competition between cotton and polyester.

Manufacturing Capacity

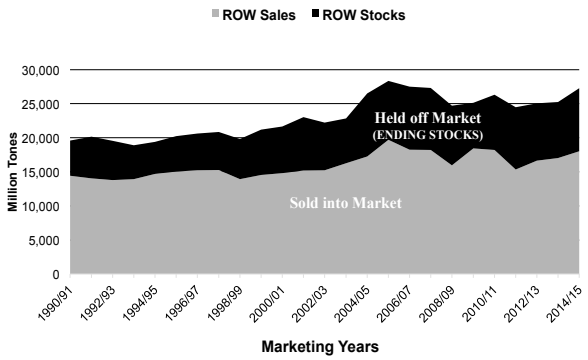
During the decade of the 2000s, global capacity in yarn spinning grew about four times faster than global population. China alone accounted for 96.5% of this global growth in textile-manufacturing capacity. China increased its capacity by 158.0% during the 2000s, while the rest of Asia increased capacity by 22.6%. The non-Asian sectors of the world taken together actually decreased capacity by 28.1%. This overwhelming dominance of global capacity positioned China to be a dominant oligopolist after the Multi-Fiber Agreement (MFA) was ended in 2004.

Taken as a whole, the Asian subcontinent now accounts for about 86% of global capacity for yarn spinning, leaving the non-Asian sectors of the world with limited power to influence the global textile market. Installed production capacities are the most rigid and uncompromising of structural factors that determine the conduct and performance of an industry. The overwhelming dominance of China and the Asian subcontinent in yarn spinning capacities ensures that these industries have outsized leverage on decisions about which fibers are used to make yarns.

Cotton Supply

Global cotton production is quite concentrated. Over the past 25 years, the top eight cotton producing countries in the world averaged producing 83% of the total world crop. Over the past decade, these same eight countries have averaged producing 87% of the world crop.

Figure 1. Cotton Supply in World less China (ROW): Sales versus Stocks

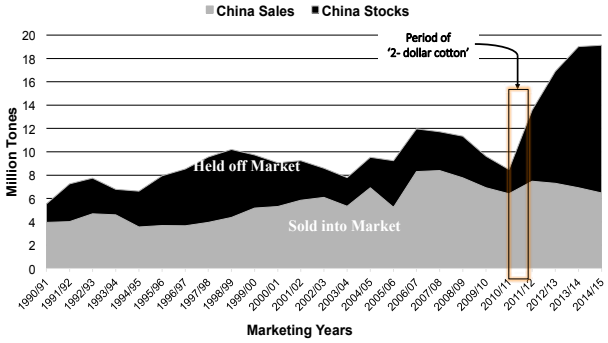


The four largest cotton-producing countries (China, India, USA, and Pakistan) accounted for about 72% of the world's cotton production in 2014/15. Over the 25-year period, the greatest increases occurred in China and India. The greatest decrease occurred in the United States. Yet, among these countries, only the United States contributes consistently towards global exports of cotton. India exports modest amounts of cotton but is unreliable, with a tendency for government to restrict exports if cotton prices rise, in order to protect the domestic textile-manufacturing sector.

Production is not the same as supply; however, countries that dominate in production are able to dominate in supply. The global supply must be divided into the part that is sold into the market and the part that is held off the market. By definition, total cotton supply in a given year consists of beginning stocks plus production, while cotton held off the market constitutes the ending stocks. For the world excluding China, over the marketing years 1990/91 through 2014/15 the quantity of cotton withheld from the market is fairly well behaved (Figure 1).

But the situation has been quite different for China (Figure 2). Cotton withheld from the market averaged 38.7% of China's

Figure 2. Cotton Supply in China: Sales versus Stocks, 1990/91-2014/15



supply between 1990/91 and 2010/11, but has averaged 69.4% since 2011/12. The quantity withheld from the market increased drastically in marketing year 2011/12, as the rest of the world reduced stocks to low levels and cotton prices spiked to historically high levels. This was the year in which the industry was traumatized by 'two-dollar cotton' (meaning some cotton was sold for $2 per pound). The quantity of cotton withheld from the market by China ballooned from 2.1 million tonnes in 2010/11 to 6.2 million tonnes in 2011/12. This has continued in each successive year, increasing to 9.6 million tonnes in 2012/13, 12.1 million tonnes in 2013/14, and 12.7 million tonnes in 2014/15.

Chinese government policy has reduced the global supply of cotton available to the market, which has decreased the equilibrium quantity consumed of cotton. This reduced consumption equilibrium will persist until China reverses these policies.

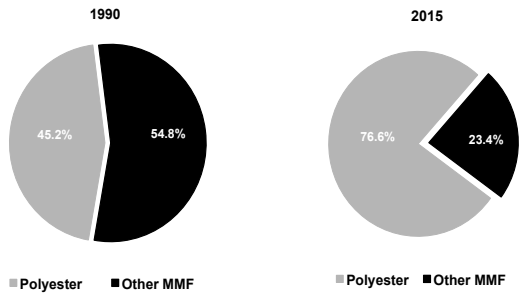
Polyester Supply

Polyester dominates man-made fiber production to such an extraordinary extent that an evaluation of competition between synthetics and cotton devolves into an evaluation of competition between polyester and cotton. Between 1990 and 2015, global polyester production increased from 8.7 to 48.0 million tonnes, while all other man-made fibers increased from about 10.5 to about 14.7 million tonnes. As a result, polyester's share of the total increased from 45.2% to 76.6% (Figure 3).

Polyester is the only textile fiber that whose market share has grown; i.e., every other fiber's share of global fiber consumption decreased over the period analyzed. Furthermore, polyester gained market share in all major categories of end uses; i.e., apparel, home furnishings, and technical textiles. The competition between polyester and cotton is where the impacts from China's policies become critically important.

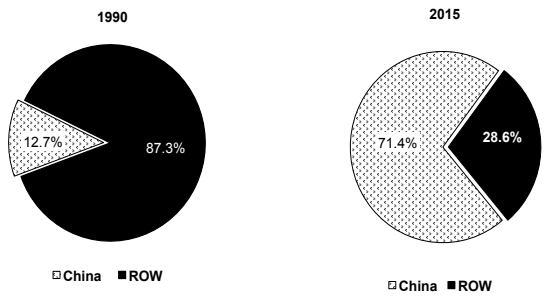
Global production capacity for polyester has increased more drastically than has actual production, with most of the growth occurring in China. Between 1990 and 2015, global production capacity for polyester fibers increased from 10.4 to 69.4 million tonnes. China's production capacity increased from 1.3 to 49.6 million tonnes, while capacity in the rest of the world increased from 9.1 to 19.8 million tonnes. The result is that China's share of the world production capacity for polyester fibers increased from 14.5% to 72.3% (Figure 4).

Figure 3. Global Shares of Polyester versus All Other MMFs, 1990 versus 2015



Source: PCI Fibres

Figure 4. Polyester Production Capacity, China versus ROW, 1990 versus 2015



Source: PCI Fibres

China's capacity increases have not been driven by market-based conditions. While actual production has increased from 8.7 to 48.0 million tonnes, the unutilized capacity has increased from 1.7 to 21.4 million tonnes. As a result, global unutilized capacity has increased from 16.7% to 30.8%. This should be understood as a lower bound of the excess capacity, because of production at levels where revenues do not cover the total costs of production.

China's production of polyester in 2015 is estimated at 33.3 million tonnes. Using this estimate, the fiber production situation in 2015 may be summarized approximately as follows:

World polyester production	=	48.0 million tones
China polyester production	=	33.3 million tones
World cotton production	=	26.1 million tones
China cotton production	=	6.5 million tones

The situation is such that:

- World production of polyester is 44% larger than world cotton production.
- China accounts for almost 70% of world polyester production.
- China alone is producing almost one-third more polyester than the entire world production of cotton.
- China accounts for about one-fourth of world cotton production.
- China is withholding its cotton production from the market, greatly reducing the global supply of cotton.

Since fibers are the raw input into all subsequent textile-manufacturing processes, it follows that China has forced a reduction in the use of cotton for making textiles.

Price Competition

China's withholding of its cotton supply from global markets is not structural in nature; rather, it is a policy directly regulating market conduct. The foregoing dimensions of policy-caused distortions are inevitably manifested in market prices, even if no additional policy measures were focused directly on these prices. But governments also may intervene directly to distort market prices as the method of achieving policy objectives. The most egregious example of direct intervention in recent years has been China's regulation of domestic cotton prices.

Cotton prices in India, Pakistan, and USA have generally been grouped closely together and have moved in a coordinated manner. But China's administered cotton prices have been much higher than global market prices. Since 2010/11, cotton prices in China have averaged $3.06 per kilogram, while prices in the other three countries have averaged $1.93/kg. The difference is $1.13/kg, which means that domestic cotton has cost the textile-manufacturing sector about 59% more in China.

In contrast to China's directly administered, inflated prices for cotton, the large excess capacity in polyester production has put great downward pressure on these prices. Since 2010/11, the average premium paid for cotton in China versus in India, Pakistan, and USA is 83%. In an industry that functions on razor-thin margins, this gives an overwhelming cost incentive to substitute polyester for cotton.

The price incentive to substitute polyester for cotton extends to the other Asian countries. On average, cotton prices in these countries have been about 11% higher than polyester prices. However, the discrepancy is much greater in the USA; since 2010/11, US mills have averaged paying a 42% premium over polyester.

Conclusion

The acceleration in losses of cotton's global market share among textile fibers during the last twenty years has not been driven primarily by open-market forces, but by the mixture of government policies. It has been driven primarily by Chinese policies regarding production capacities and prices for fibers and textiles, secondarily by policies in the rest of the Asian subcontinent, with tertiary policy influences by other countries. The policies that have developed over the last two decades were made possible by actualization of the World Trade Organization (WTO) in 1995 – and especially by China's accession to full membership in the WTO in 2001. China's subsequent dominance in both fiber and textile production was driven by central government policies, which gave it hegemonic leverage over global competition between cotton and polyester, and which it used in a manner to effectively increase polyester's share of the market.

Offsetting forces are now coming into play in some countries that may somewhat dilute these policy distortions–for example, the emergence of textile industries in countries like Vietnam and Bangladesh, along with growth in India's textile industry–, all of which have a comparative advantage vis-à-vis China in the production of cotton textiles and all of which will use this advantage to satisfy consumer preferences for cotton content in textiles. However, China's overwhelming expansion of production capacities in both textiles and polyester fibers, its price-depressing oversupply of polyester, its commanding presence in government-controlled cotton production, all in combination with administered prices that make cotton uncompetitive, will continue to depress consumption of cotton. The policies that have caused this have not been treated as actionable by the WTO; yet, a reversal in cotton's share losses cannot be expected unless and until the policies are changed.

HOW CAN COTTON COMPETE WITH MAN-MADE FIBERS?

By José Sette and Lorena Ruíz, ICAC

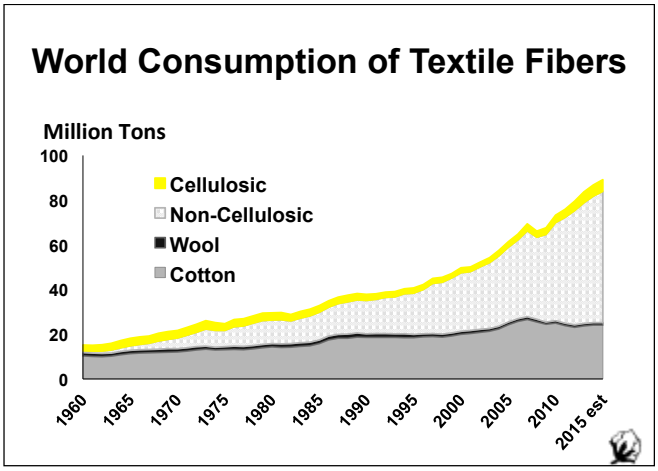
Humans have been enjoying the comforts of cotton for more than seven thousand years. However, since the middle of the 20th century, cotton has been challenged by strong competition from man-made fibers. How we react to this threat will determine the health of the world cotton sector in coming decades.

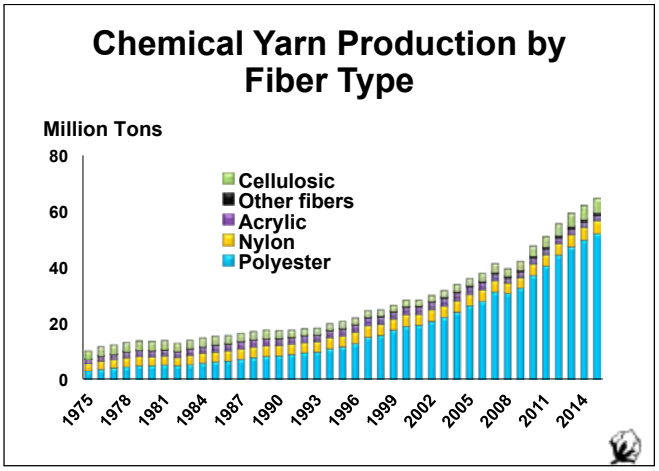
Slowdown in World Cotton Mill Use

Cotton is the world's most widely used natural fiber, accounting for 27% of the global end-use consumption of fibers and 78% of all natural fibers produced in the world.

World demand for textile fibers has expanded at an impressive pace over the last five decades. From 15 million tons in 1960, textile fiber consumption increased to nearly 90 million tons in 2015. Similarly, annual world consumption of textile fibers per capita more than doubled over the same period, from 5 kg to 12 kg.

While world cotton consumption also increased in absolute terms, from 10.4 million tons in 1960 to 24 million tons in 2015, its share of the market for fibers has declined drastically. Although cotton maintained the largest share of the world textile market until 1995, its portion has fallen significantly





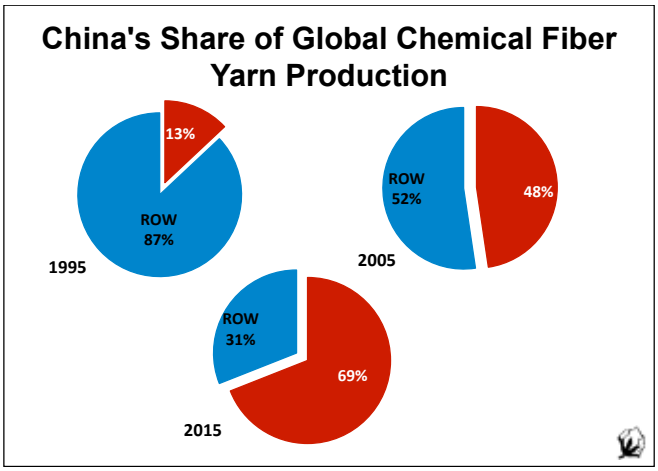
since then, dropping below 30% from 2012 onwards. The primary cause that explains this decrease is the growth in consumption of other textile fibers, particularly polyester, cotton's most important competitor.

One of the most important factors eroding the competitiveness of cotton in the recent past has been the build-up in world inventories. From 2010 to 2014, the world cotton market was marked by an unprecedented accumulation of stocks. During this time, production exceeded demand by almost 14 million tons, much of which still remains stockpiled in warehouses around the world. At the end of the 2014/15 season, world stocks stood at a record 22.3 million tons and the global stock-to-use ratio was 0.92, the highest level on record. The 2015/16 season was marked by a shortfall in production of 2.5 million tons, which was met by a large drawdown in cotton stocks. Substantial sales from the government reserve reduced China's ending stocks by 13%, to 11.3 million tons, while stocks in the rest of the world decreased by 13% to 8 million tons. Overall, stocks fell by 13%, to 19.3 million tons.

Although the global stock-to-use ratio fell to 82% in 2015/16, world inventories remain at extremely high levels in historical terms. An orderly reduction of stocks will continue to be a key element in the healthy development of the cotton market in coming years.

Currently, China is not only the world's largest consumer and second-largest producer of cotton, but also the largest manufacturer and consumer of man-made fibers. China became the largest producer of man-made fiber yarn in 1997, and production has increased since then at an exponential growth rate of 14% a year. Consequently, production of man-made fibers in China rose from 4 million tons in 1997 to almost 45 million tons in 2015, i.e. an average annual increase of 1.92 million tons. In contrast, cotton consumption in China grew at an annual average rate of 3.6% since 1980, reaching 10.9 million tons in 2007/08, its highest level on record. Since then, consumption in China has declined to an estimated 7.1 million tons, and is falling by 4.7% a year.

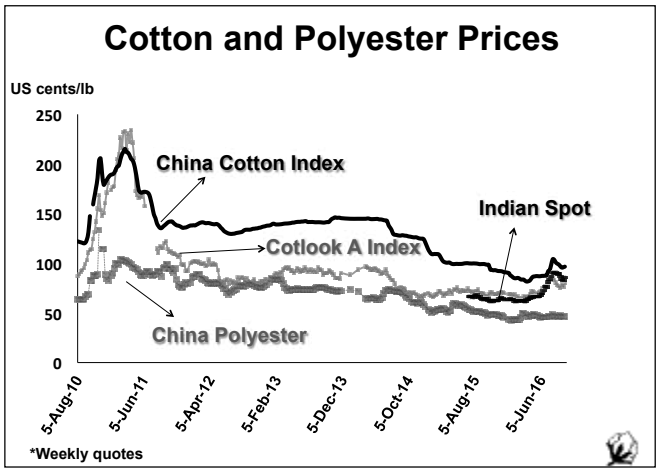
India is today the largest producer and second largest



consumer of cotton worldwide and in 2006 became the world's second largest producer of man-made fibers, following new investments that resulted in a significant production capacity for polyester fibers. While the production of man-made fiber yarns in India has doubled over the last ten years, this growth has not been as vigorous as in other countries due to government policies that encourage the use of natural fibers. In fact, consumption of cotton by the spinning industry in India has grown at an average annual rate of 4%, from 1.4 million tons in 1980/81 to an estimated 5.2 million tons in 2015/16.

Volatility and High Prices: Major Factors behind the Decline in World Cotton Demand

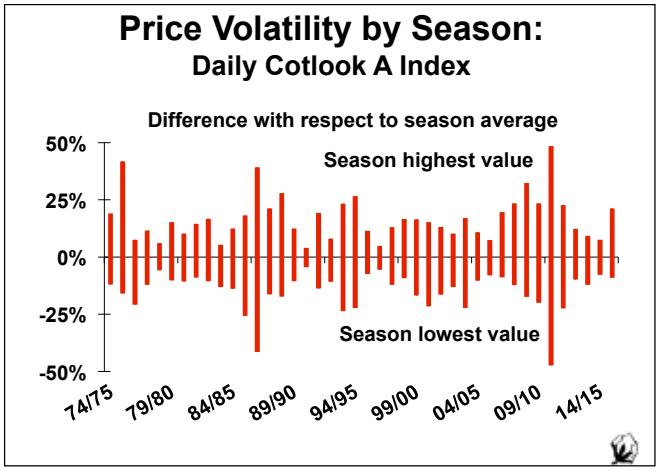
The increasing difference between cotton and polyester prices has contributed to a reduction in competitiveness on the part of cotton and the decrease of its share in the global consumption of textile fibers. In recent months, a surge in cotton prices has further weakened the competitiveness of cotton in relation to other textile fibers. The Cotlook A Index averaged 71 cts/lb during the 2014/15 season and remained unchanged until early June 2016, when prices began to experience a sudden rise.



Since then, international prices have fluctuated between 72 and 86 cts/lb. Similarly, cotton prices in India and China, the two largest producers and consumers of cotton in the world, have trended upward, from 64 and 82 cts/lb, respectively, at the beginning of April 2016, to 85 and 96 cts/lb by the end of September.

In contrast, the price of polyester in China has registered a smaller fluctuation over the same period, ranging from 46 to 48 cts/lb, with an average of 46 cts/lb in 2016. Polyester prices have been weighed down by falling raw material prices, since the steep fall in oil prices that began in the first semester of 2014. In September 2016, the Cotlook A index was 30 cts/lb higher than the average price of polyester in China. In the case of the China Cotton Index, the difference with polyester is even greater (50 cts/lb), while the price difference in relation to Shankar-6 cotton, the benchmark quality in India, is 38 cts/lb.

Not only has the difference between cotton and polyester prices widened, but price volatility is once again rising. The simplest measure of volatility is the relative difference (RD), which is the difference between the highest price and the lowest price divided by the season's average price.

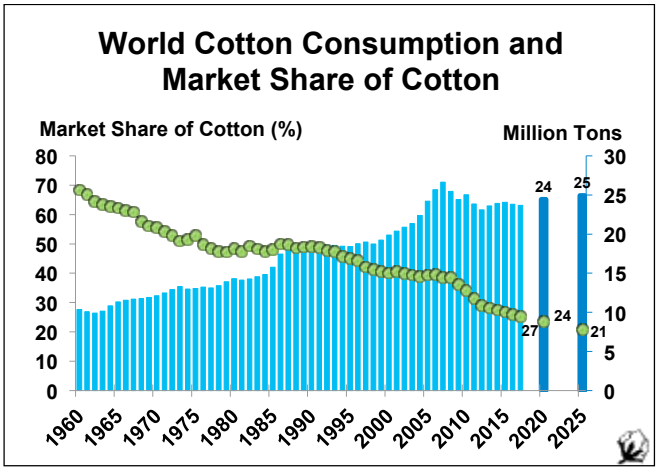


Using daily quotes of the Cotlook A Index, the RD in 2015/16 increased by 30%, i.e. twice the average RD in the 2014/15 season (15%). The extent of cotton price fluctuations and the gap between cotton and polyester prices have long-term adverse effects due to the uncertainty created throughout the cotton value chain. In addition, this situation encourages spinners to reduce the proportion of cotton in their blends in favor of polyester, which may result in a further drop in world cotton demand.

Challenges Faced by Cotton

The world cotton industry faces significant challenges to encourage growth in consumption. High cotton prices in 2010/11 brought about changes in the market for garments all over the world, as retailers realized that consumers were willing to purchase clothing with a high polyester content, so long as prices did not increase.

The competition from man-made fibers is made even more formidable by some of the latest fashion trends. In recent years, the market share of man-made fibers has grown significantly as a result of the growing popularity of so-called "athleisure" products, which are designed for use while exercising and also for casual, everyday wear. This phenomenon is especially noticeable in women's fashion, a category in which leggings and yoga pants, all of which tend to have a high polyester content, are increasingly worn in place of 100% denim (i.e. cotton) jeans. Furthermore, the application of new technologies to the manufacture of man-made fibers has resulted in more versatile and resistant materials, which combine cheap cost with a more natural appearance.



Strategies for the Cotton Sector

What can the cotton sector do to counteract these adverse trends?

- First, cotton prices must remain competitive. It may be difficult to match current low prices for polyester and any further decline in international cotton prices in relation

to competing crops may generate a drop in cotton supply worldwide, since farmers would probably switch to other crops, such as corn, sorghum, soybeans, rice, wheat and sugarcane. Furthermore, any significant drop in cotton prices is likely to stimulate greater government intervention in support of local growers, which will temporarily prop up prices and delay adjustment to changing circumstances. Even so, the gap between the prices of the two products should not be allowed to widen even further. This means that cotton growers must continue to make every effort to lower their costs of production and increase productivity. Long-term investment in extension services and agronomic research is part of the solution. Yields in cotton production vary tremendously, and there is ample room for improvement in many cotton-producing countries, especially in Africa and Asia.

- Second, research must continue to be conducted into ways in which to improve the technical performance of cotton vis-à-vis competing fibers. Cotton has important natural qualities that are highly prized by consumers, but greater investment in research and development is required in order to improve its ease of use in industrial processes.
- Third, cotton must do more to show its positive contributions to the world. Although often the target of unjust and misinformed attacks for its impact on the environment, cotton helps provide food security and income to hundreds of millions of people all over the world. We must all join together to educate the public regarding the benefits of this fiber.
- Fourth, promotional campaigns can mold consumer preferences and help counteract the drop in consumption. The need to make consumers more aware of the advantages of cotton is particularly important in the emerging markets of Asia and Africa, where the bulk of population growth in coming decades will occur. Consumers in these markets often have little awareness of cotton and its benefits. Therefore, it is important to educate them so as to create loyal consumers in the future.

In conclusion, cotton faces a severe threat to its share of the world fiber market. Although the slow decline in its portion of world fiber consumption is likely to persist, the steps outlined above can help slow this decrease. Cotton can continue to play a leading role in world apparel and home furnishings, while raising the living standards of millions of needy people all over the world.

2015/16 SUPPLY AND USE OF COTTON BY COUNTRY October 3, 2016

	AREA	YIELD	PROD	BEG STKS	IMPORTS	CONS	EXPORTS	END STKS	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						Ratio	Ratio
CANADA				0	0	0	0	0	0.11	0.12
CUBA	4	272	1	1	2	3		1	0.19	0.19
DOM. REP.					1	1		0	0.47	0.47
MEXICO	130	1,523	198	190	219	418	32	157	0.35	0.38
USA	3,268	859	2,806	980	7	751	1,993	1,049	0.38	1.40
N. America	**3,407**	**882**	**3,006**	**1,171**	**230**	**1,175**	**2,025**	**1,207**	**0.38**	**1.03**
EL SALVADOR				10	35	35		10	0.28	0.28
GUATEMALA				8	24	24		8	0.33	0.33
HONDURAS	0	319	0	0		0		0		
C. America	**2**	**513**	**1**	**18**	**65**	**60**	**0**	**18**	**0.30**	**0.30**
ARGENTINA	376	519	195	306	4	144	48	312	1.62	2.16
BOLIVIA	4	625	3	2	1	3		2	0.70	0.70
BRAZIL	956	1,410	1,348	1,158	20	733	939	854	0.51	1.16
CHILE				0	0	0		0	0.12	0.12
COLOMBIA	26	827	22	10	39	56	1	14	0.25	0.25
ECUADOR	1	440	1	1	13	13		1	0.10	0.10
PARAGUAY	13	444	6	2	1	2	4	3	0.44	1.38
PERU	27	752	20	15	55	74	1	15	0.20	0.21
URUGUAY				0		0		0	0.58	0.58
VENEZUELA	15	406	6	5	6	11		6	0.55	0.55
S. America	**1,418**	**1,129**	**1,600**	**1,502**	**138**	**1,038**	**994**	**1,208**	**0.59**	**1.16**
ALGERIA				1	6	6		1	0.13	0.13
EGYPT	105	574	60	71	70	130	35	36	0.22	0.28
MOROCCO				5	36	36		5	0.14	0.14
SUDAN	50	516	28	28		19	18	20	0.55	1.06
TUNISIA				3	13	13		3	0.21	0.21
N. Africa	**155**	**570**	**88**	**107**	**125**	**203**	**53**	**64**	**0.25**	**0.32**
BENIN	307	338	104	67		4	108	58	0.52	14.62
BURKINA FASO	663	368	244	157		4	262	134	0.50	33.55
CAMEROON	222	513	114	69		2	113	69	0.60	36.05
CENT. AFR. REP.	35	230	8	3			8	3	0.40	
CHAD	291	251	73	23		1	66	29	0.43	57.40
COTE D'IVOIRE	402	441	177	39		2	161	53	0.33	25.95
GUINEA	12	273	3	1			3	1	0.41	
MADAGASCAR				3				3		
MALI	573	377	216	112		3	218	107	0.48	35.51
NIGER	5	448	2	0		1	1	0	0.11	0.25
SENEGAL	31	384	12	2		1	11	3	0.24	3.61
TOGO	117	256	30	13			31	12	0.38	
F. Africa	**2,658**	**370**	**984**	**489**		**17**	**983**	**472**	**0.47**	**27.49**
ANGOLA	3	302	1	0		1	0	0	0.35	0.48
ETHIOPIA	66	642	42	13	13	50	0	19	0.37	0.37
GHANA	12	366	4	2		1	3	1	0.30	1.11
KENYA	21	184	4	2		4		1	0.24	0.24
MALAWI	141	230	33	24		3	31	22	0.65	7.37
MOZAMBIQUE	110	181	20	19			23	16	0.70	
NIGERIA	253	205	52	29	1	23	37	22	0.36	0.96
SOUTH AFRICA	7	1,250	9	18	17	21	10	13	0.42	0.61
TANZANIA	315	217	68	95		39	38	87	1.13	2.23
UGANDA	65	286	19	22		0	26	14	0.51	30.13
CONGO, DR				2	8	8		2	0.27	0.27
ZAMBIA	122	325	40	42		2	41	39	0.91	
ZIMBABWE	207	119	25	24		4	31	13	0.38	3.55
S. Africa	**1,343**	**238**	**320**	**297**	**60**	**179**	**243**	**254**	**0.60**	**1.42**
KAZAKHSTAN	99	436	43	17	0	14	31	16	0.35	1.11
KYRGYZSTAN	14	810	12	6	4	1	16	4	0.23	4.19
TAJIKISTAN	154	533	82	30		9	75	27	0.32	2.88
TURKMENISTAN	545	544	290	114		143	147	114	0.39	0.80
UZBEKISTAN	1,298	641	832	264	1	338	544	216	0.24	0.64
C. Asia	**2,111**	**597**	**1,259**	**432**	**5**	**505**	**814**	**377**	**1.54**	**0.75**

2015/16 SUPPLY & USE OF COTTON BY COUNTRY (cont'd) October 3, 2016

	AREA	YIELD	PROD	BEG STKS	IMPORTS	CONS	EXPORTS	END STKS	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						Ratio	Ratio
AUSTRIA				0	4	3	1	0	0.13	0.16
AZERBAIJAN	19	656	12	6		15		3	0.20	0.20
BELARUS				4	11	11		4	0.34	0.34
BELGIUM				2	11	7	4	2	0.16	0.25
BULGARIA	0	324	0	1	5	5	0	1	0.11	0.12
CZECH REP.				0	3	3		0	0.13	0.13
DENMARK					0	0				
ESTONIA										
FINLAND										
FRANCE				3	12	10	3	2	0.14	0.18
GERMANY				10	46	40	7	9	0.19	0.23
GREECE	240	908	218	48	6	20	209	44	0.19	2.18
HUNGARY				0	0	0	0	0	0.17	0.30
IRELAND				0	0	0	0	0	0.13	0.16
ITALY				7	43	41	2	7	0.15	0.16
LATVIA				0	0	0		0	0.17	0.17
LITHUANIA				0				0		
MOLDOVA				1	2	2		1	0.34	0.34
NETHERLANDS				0	4	4		0	0.10	
NORWAY										
POLAND				0	3	3		0	0.15	0.15
PORTUGAL				7	38	37	0	7	0.19	0.19
ROMANIA				0	0	0		0	0.08	0.08
RUSSIA	1	521	1	24	52	64	0	13	0.20	0.20
SLOVAK REP.										
SPAIN	66	847	56	14	3	5	57	11	0.17	2.08
SWEDEN				0	0	0		0		
SWITZERLAND				0	3	3	0	0	0.10	0.10
UKRAINE				0	2	2		0	0.23	0.23
UNITED KINGDOM				0	0	0	0	0	0.12	0.15
FORMER YUGOSLAVIA				1	7	7		1	0.18	0.18
Europe	**328**	**876**	**287**	**131**	**259**	**287**	**284**	**107**	**0.19**	**0.37**
Including EU-28	**306**	**894**	**274**	**93**	**180**	**181**	**284**	**84**	**0.18**	**0.46**
CHINA	3,060	1,553	4,753	12,917	959	7,330	28	11,272	1.53	1.54
TAIWAN				49	154	161		41	0.26	0.26
HONG KONG				33	0		1	33	62.96	
Sub total	**3,060**	**1,553**	**4,753**	**12,999**	**1,114**	**7,491**	**28**	**11,346**	**1.51**	**1.51**
AUSTRALIA	270	2,144	579	182	0	7	613	140	0.23	19.93
INDONESIA	8	603	5	107	640	647	3	102	0.16	0.16
JAPAN				16	67	71		12	0.17	0.17
KOREA, D.R.				1	5	5		1	0.24	0.24
KOREA, REP.				68	256	275	1	48	0.17	0.18
MALAYSIA				25	101	79	12	35	0.39	0.44
PHILIPPINES	0	569	0	3	10	10		3	0.30	0.30
SINGAPORE				0	9		9	0	0.04	
THAILAND	2	518	1	44	278	278	0	46	0.16	0.16
VIETNAM	5	465	2	154	1,001	1,007		151	0.15	0.15
E. Asia	**305**	**1,952**	**595**	**603**	**2,367**	**2,386**	**638**	**541**	**0.18**	**0.23**
AFGHANISTAN	45	414	19	14		4	14	14	0.74	3.15
BANGLADESH	40	675	27	248	1,108	1,077		306	0.28	0.28
INDIA	11,910	482	5,746	2,518	230	5,243	1,265	1,986	0.31	0.38
MYANMAR	239	653	156	104	51	207		104	0.50	0.50
PAKISTAN	2,869	528	1,514	753	490	2,268	56	433	0.19	0.19
SRI LANKA				0	2	2		0	0.11	0.11
S. Asia	**15,106**	**494**	**7,464**	**3,637**	**1,880**	**8,804**	**1,335**	**2,843**	**0.28**	**0.32**
IRAN	72	687	49	29	51	100		30	0.30	0.30
IRAQ	17	362	6	1	5	10		2	0.21	0.21
ISRAEL	9	1,891	17	1			17	2	0.09	
SYRIA	44	879	39	68		60	25	22	0.27	0.38
TURKEY	424	1,486	630	822	918	1,450	50	870	0.58	0.60
Sub total	**582**	**1,285**	**747**	**926**	**984**	**1,635**	**93**	**930**	**0.54**	0.57
WORLD TOTAL	**30,473**	**693**	**21,105**	**22,314**	**7,226**	**23,781**	**7,489**	**19,368**	**0.81**	**0.81**

*/ Ending stocks divided by consumption plus exports.

**/ Ending stocks divided by consumption.

Subtotals and total include countries not shown.

2016/17 SUPPLY AND USE OF COTTON BY COUNTRY October 3, 2016

	AREA	YIELD	PROD	BEG STKS	IMPORTS	CONS	EXPORTS	END STKS	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						Ratio	Ratio
CANADA				0	0	0		0	0.11	0.11
CUBA	4	271	1	1	2	3		1	0.19	0.19
DOM. REP.					1	1		0	0.47	0.47
MEXICO	110	1,559	172	157	290	418	32	168	0.37	0.40
USA	3,907	899	3,514	1,049	2	762	2,504	1,300	0.40	1.71
N. America	**4,026**	**916**	**3,688**	**1,207**	**296**	**1,186**	**2,536**	**1,470**	**0.39**	**1.24**
EL SALVADOR				10	35	35		10	0.28	0.28
GUATEMALA				8	24	24		8	0.32	0.32
HONDURAS	0	318	0	0		0		0		
C. America	**2**	**512**	**1**	**18**	**59**	**60**	**0**	**18**	**0.29**	**0.29**
ARGENTINA	387	522	202	312	3	141	95	281	1.19	1.99
BOLIVIA	4	639	3	2	0	3	0	2	0.50	0.53
BRAZIL	956	1,513	1,447	854	19	667	777	876	0.61	1.31
CHILE				0	0	0		0	0.12	0.12
COLOMBIA	26	816	21	14	35	56		14	0.25	0.25
ECUADOR	1	439	1	1	13	13		1	0.10	0.10
PARAGUAY	12	413	5	3	1	2	4	2	0.33	0.96
PERU	27	814	22	15	52	73	1	15	0.21	0.21
URUGUAY				0		0		0	0.06	0.06
VENEZUELA	15	390	6	6	4	10		5	0.47	0.47
S. America	**1,428**	**1,194**	**1,706**	**1,208**	**127**	**967**	**877**	**1,197**	**0.65**	**1.24**
ALGERIA				1	6	6		1	0.13	0.13
EGYPT	60	679	41	36	94	117	22	32	0.23	0.27
MOROCCO				5	36	36		5	0.14	0.14
SUDAN	49	487	24	20		18	13	13	0.41	0.72
TUNISIA				3	12	12		3	0.22	0.22
N. Africa	**109**	**592**	**65**	**64**	**148**	**188**	**36**	**53**	**0.24**	**0.28**
BENIN	392	385	151	58		4	137	68	0.48	16.96
BURKINA FASO	762	412	314	134		4	295	149	0.50	37.33
CAMEROON	224	462	103	69		2	116	54	0.46	28.32
CENT. AFR. REP.	35	231	8	3			8	3	0.40	
CHAD	292	211	62	29		1	59	30	0.50	60.56
COTE D'IVOIRE	343	459	157	53		2	149	60	0.40	29.01
GUINEA	12	276	3	1			3	1	0.40	
MADAGASCAR				3				3		
MALI	693	390	270	107		3	255	119	0.46	39.61
NIGER	5	447	2	0		1	1	0	0.11	0.25
SENEGAL	22	385	8	3		1	8	3	0.36	3.80
TOGO	131	316	42	12			39	15	0.37	
F. Africa	**2,911**	**385**	**1,121**	**472**		**17**	**1,071**	**505**	**0.46**	**29.39**
ANGOLA	3	302	1	0		1	0	0	0.33	0.48
ETHIOPIA	69	560	39	19	13	51	0	19	0.36	0.36
GHANA	12	365	4	1		1	3	1	0.33	1.11
KENYA	21	181	4	1	0	4		1	0.17	0.17
MALAWI	134	240	32	22		3	29	23	0.72	7.61
MOZAMBIQUE	110	208	23	16			25	14	0.54	
NIGERIA	253	202	51	22	1	25	31	18	0.32	0.71
SOUTH AFRICA	7	1,209	9	13	17	21	5	13	0.49	0.61
TANZANIA	315	217	68	87		39	53	64	0.69	1.63
UGANDA	66	278	18	14		0	22	10	0.45	21.80
CONGO, DR				2	8	8		2	0.27	0.27
ZAMBIA	122	325	40	39		2	40	37	0.91	
ZIMBABWE	203	199	40	13		4	27	23	0.74	6.08
S. Africa	**1,337**	**250**	**334**	**254**	**59**	**183**	**235**	**230**	**0.55**	**1.26**
KAZAKHSTAN	91	447	41	16	0	14	27	16	0.38	1.13
KYRGYZSTAN	14	810	12	4	4	1	14	4	0.27	4.19
TAJIKISTAN	154	566	87	27		9	78	27	0.31	2.88
TURKMENISTAN	545	561	306	114		148	158	114	0.37	0.77
UZBEKISTAN	1,256	652	818	216	1	341	456	237	0.30	0.70
C. Asia	**2,060**	**613**	**1,263**	**377**	**5**	**513**	**733**	**399**	**1.63**	**0.78**

2016/17 SUPPLY & USE OF COTTON BY COUNTRY (cont'd) October 3, 2016

	AREA	YIELD	PROD	BEG STKS	IMPORTS	CONS	EXPORTS	END STKS	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						Ratio	Ratio
AUSTRIA				0	3	3	1	0	0.13	0.16
AZERBAIJAN	28	632	18	3		15		6	0.36	0.36
BELARUS				4	11	11		4	0.34	0.34
BELGIUM				2	10	7	4	2	0.17	0.27
BULGARIA	0	324	0	1	5	5	0	1	0.11	0.11
CZECH REP.				0	3	3		0	0.13	0.13
DENMARK					0	0				
ESTONIA										
FINLAND										
FRANCE				2	13	10	3	2	0.14	0.19
GERMANY				9	46	40	6	9	0.20	0.23
GREECE	211	1,009	213	44	5	20	198	44	0.20	2.18
HUNGARY				0	0	0	0	0	0.18	0.31
IRELAND				0	0	0		0	0.09	0.09
ITALY				7	44	40	3	7	0.15	0.16
LATVIA				0	0	0		0	0.32	0.32
LITHUANIA				0				0		
MOLDOVA				1	2	2		1	0.34	0.34
NETHERLANDS				0	4	4		0	0.10	
NORWAY										
POLAND				0	3	3		0	0.15	0.15
PORTUGAL				7	38	37	0	7	0.19	0.19
ROMANIA				0	0	0		0	0.08	0.08
RUSSIA	1	520	1	13	62	62	0	13	0.21	0.21
SLOVAK REP.										
SPAIN	66	891	59	11	3	5	54	13	0.22	2.63
SWEDEN				0	0	0		0		
SWITZERLAND				0	3	3	0	0	0.10	0.10
UKRAINE				0	2	2		0	0.25	0.25
UNITED KINGDOM				0	0	0		0	0.14	0.14
FORMER YUGOSLAVIA				1	7	7		1	0.18	0.18
Europe	**308**	**943**	**291**	**107**	**269**	**283**	**271**	**112**	**0.20**	**0.39**
Including EU-28	**277**	**980**	**272**	**84**	**181**	**179**	**271**	**86**	**0.19**	**0.48**
CHINA	2,846	1,600	4,553	11,272	977	7,183	36	9,582	1.33	1.33
TAIWAN				41	153	153		41	0.27	0.27
HONG KONG				33	0		1	33	41.48	
Sub total	**2,846**	**1,600**	**4,553**	**11,346**	**1,130**	**7,336**	**37**	**9,656**	**1.31**	**1.32**
AUSTRALIA	459	1,844	846	140	0	7	644	336	0.52	50.21
INDONESIA	8	615	5	102	646	647		106	0.16	0.16
JAPAN				12	70	70		12	0.17	0.17
KOREA, D.R.				1	5	5		1	0.24	0.24
KOREA, REP.				48	267	267	1	47	0.18	0.18
MALAYSIA				35	91	82	12	33	0.35	0.40
PHILIPPINES	0	567	0	3	10	10		3	0.28	0.28
SINGAPORE				0	7		7	0	0.05	
THAILAND	2	517	1	46	274	275		46	0.17	0.17
VIETNAM	5	465	2	151	1,152	1,137		167	0.15	0.15
E. Asia	**493**	**1,749**	**862**	**541**	**2,521**	**2,507**	**663**	**754**	**0.24**	**0.30**
AFGHANISTAN	40	413	17	14		4	13	13	0.74	2.95
BANGLADESH	40	708	28	306	1,217	1,207		344	0.29	0.29
INDIA	10,957	526	5,766	1,986	219	5,248	821	1,901	0.31	0.36
MYANMAR	244	634	155	104	10	207		62	0.30	0.30
PAKISTAN	2,525	756	1,910	433	436	2,291	33	455	0.20	0.20
SRI LANKA				0	2	2		0	0.11	0.11
S. Asia	**13,809**	**570**	**7,878**	**2,843**	**1,884**	**8,961**	**868**	**2,775**	**0.28**	**0.31**
IRAN	70	824	58	30	52	110		30	0.27	0.27
IRAQ	13	361	5	2	4	9		2	0.21	0.21
ISRAEL	8	1,898	15	2			15	1	0.09	
SYRIA	35	983	35	22		24	21	12	0.27	0.50
TURKEY	432	1,535	664	870	849	1,450	50	883	0.59	0.61
Sub total	**562**	**1,384**	**777**	**930**	**916**	**1,605**	**87**	**931**	**0.55**	**0.58**
WORLD TOTAL	**29,891**	**754**	**22,537**	**19,368**	**7,414**	**23,807**	**7,414**	**18,098**	**0.76**	**0.76**

*/ Ending stocks divided by consumption plus exports.

**/ Ending stocks divided by consumption.

Subtotals and total include countries not shown.

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SUPPLY AND DISTRIBUTION OF COTTON

October 3, 2016

Seasons begin on August 1

	2011/12	2012/13	2013/14 Est.	2014/15 Est.	2015/16 Est.	2016/17 Proj.
	Million Metric Tons					
BEGINNING STOCKS						
WORLD TOTAL	**10.333**	**15.351**	**18.342**	**20.476**	**22.31**	**19.37**
CHINA	2.087	6.181	9.607	12.109	12.92	11.27
USA	0.566	0.729	0.903	0.651	0.98	1.05
PRODUCTION						
WORLD TOTAL	**27.848**	**26.785**	**26.169**	**26.196**	**21.10**	**22.54**
INDIA	6.239	6.290	6.766	6.562	5.75	5.77
CHINA	7.400	7.300	6.950	6.500	4.75	4.55
USA	3.391	3.770	2.811	3.553	2.81	3.51
PAKISTAN	2.311	2.002	2.076	2.305	1.51	1.91
BRAZIL	1.877	1.310	1.734	1.563	1.35	1.45
UZBEKISTAN	0.880	1.000	0.910	0.885	0.83	0.82
OTHERS	5.750	5.113	4.923	4.828	4.10	4.53
CONSUMPTION						
WORLD TOTAL	**22.788**	**23.521**	**23.737**	**24.198**	**23.78**	**23.81**
CHINA	8.635	8.290	7.517	7.479	7.33	7.18
INDIA	4.231	4.731	5.057	5.261	5.24	5.25
PAKISTAN	2.121	2.216	2.470	2.492	2.27	2.29
EUROPE & TURKEY	1.498	1.560	1.611	1.692	1.64	1.64
VIETNAM	0.410	0.492	0.673	0.875	1.01	1.14
BANGLADESH	0.700	0.765	0.880	0.937	1.08	1.21
USA	0.718	0.762	0.773	0.778	0.75	0.76
BRAZIL	0.897	0.910	0.862	0.797	0.73	0.67
OTHERS	3.578	3.795	3.894	3.885	3.73	3.67
EXPORTS						
WORLD TOTAL	**9.846**	**10.061**	**9.010**	**7.731**	**7.49**	**7.41**
USA	2.526	2.836	2.293	2.449	1.99	2.50
INDIA	2.159	1.685	2.014	0.914	1.27	0.82
CFA ZONE	0.597	0.828	0.973	0.893	0.98	1.07
BRAZIL	1.043	0.938	0.485	0.851	0.94	0.78
UZBEKISTAN	0.550	0.690	0.615	0.550	0.54	0.46
AUSTRALIA	1.010	1.343	1.057	0.520	0.61	0.64
IMPORTS						
WORLD TOTAL	**9.786**	**9.788**	**8.712**	**7.572**	**7.23**	**7.41**
CHINA	5.342	4.426	3.075	1.804	0.96	0.98
VIETNAM	0.379	0.517	0.687	0.934	1.00	1.15
BANGLADESH	0.680	0.631	0.967	0.964	1.11	1.22
INDONESIA	0.540	0.686	0.651	0.728	0.64	0.65
TURKEY	0.519	0.803	0.924	0.800	0.92	0.85
TRADE IMBALANCE 1/	**-0.060**	**-0.274**	**-0.298**	**-0.159**	**-0.26**	**0.00**
STOCKS ADJUSTMENT 2/	**0.018**	**0.001**	**0.000**	**-0.002**	**-0.01**	**0.00**
ENDING STOCKS						
WORLD TOTAL	**15.351**	**18.342**	**20.476**	**22.314**	**19.37**	**18.10**
CHINA	6.181	9.607	12.109	12.917	11.27	9.58
USA	0.729	0.903	0.651	0.980	1.05	1.30
ENDING STOCKS/MILL USE (%)						
WORLD-LESS-CHINA 3/	**65**	**57**	**52**	**56**	**49**	**49**
CHINA 4/	**72**	**116**	**161**	**173**	**154**	**133**
COTLOOK A INDEX 5/	**100**	**88**	**91**	**71**	**70**	

1/ The inclusion of linters and waste, changes in weight during transit, differences in reporting periods and measurement error account for differences between world imports and exports.
2/ Difference between calculated stocks and actual; amounts for forward seasons are anticipated.
3/ World-less-China's ending stocks divided by World-less-China's mill use, multiplied by 100.
4/ China's ending stocks divided by China's mill use, multiplied by 100.
5/ U.S. cents per pound.