AN INVESTIGATION INTO THE BALE EQUIVALENCE OF U.S. TEXTILE IMPORTS

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Abstract

In the wake of the global recession and the 2010/11 price spike, there was a shift to lower levels of cotton consumption. The decrease in consumption in easily visible in mill-use figures that are produced by all of the cotton industry's estimating agencies. While it is easy to frame discussion of cotton consumption at the spinning level, it should be remembered that spinning is just the first step in the process that transforms raw fiber into finished textile goods. By considering downstream demand, it may be possible to develop a better understanding of factors influencing the shift to lower levels of consumption. To explore end-use consumption, which represents purchases made by consumers from retailers, this research explores the bale equivalence of finished textile goods. This investigation is facilitated by a database of U.S. textile imports developed by Cotton Incorporated, which is derived from U.S. Department of Commerce and the USDA sources. The database allowed for the identification of a downward trend in the average weight of many garments during the time period that followed the recession. The decline in unit weights has been a phenomenon shared across apparel in general, with man-made garments losing nearly the same volume as cotton-dominant garments, and the reduction in average product weight has been an important factor contributing to the decline in bale equivalence of cotton products consumed. Therefore, this lightening of products can be considered influential relative to the reduction in cotton consumption occurring at the mill. Since the findings from this analysis can be characterized by specific product, results can be paired with product development efforts and awareness campaigns to try to encourage the use of more fiber in finished products.

Introduction

The world cotton market experienced a series of demand-side shocks in recent years. The first of these resulted from the global recession of 2009/09, which caused consumers to restrain spending and become increasingly value-focused. In turn, the reduction on consumer spending, led retailers to pull back on order volume and to look into possibilities for reducing sourcing costs. The second shock was specific to the cotton supply chain and originated from the spike in fiber prices that occurred in 2010/11. This shock could be assumed to have resulted in a loss in market share to competing fibers like polyester and viscose while amplifying the drive to reduce sourcing costs from the recession.

In combination, these two shocks could be seen as factors pulling global use lower (Figure 1). Even though the 2014/15 crop year is six years after the global recession and four years after the spike in cotton prices, and even though there have been several years of increase, mill demand is forecast to still be about 10% lower than it was at its peak in 2006/07 and 2007/08.

The decline in global mill-use has been mirrored in the few available sources for tracking bale equivalence at the consumer-level. One such source is the monthly *Cotton & Wool Outlook* produced by USDA's Economic Research Service (ERS). These data (Figure 2), which are broken out according to major type of end-use (e.g., apparel and home furnishings), indicate that there has been an important reduction in the raw fiber equivalence of products containing cotton in recent years. For the latest crop year with data (2014/15 figures not available), the estimated bale equivalence of the cotton contained in U.S. textile imports was nearly 20% below its peak set between 2006 and 2007.

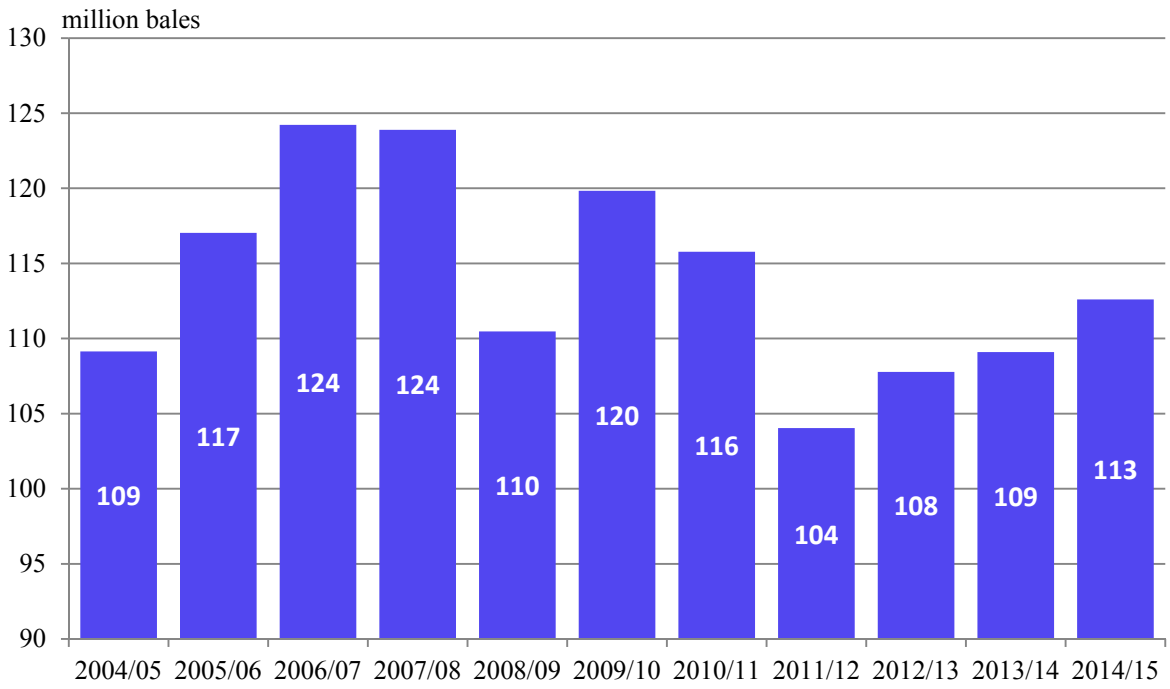

Figure 1. World Cotton Mill-Use (Foreign Agricultural Service)

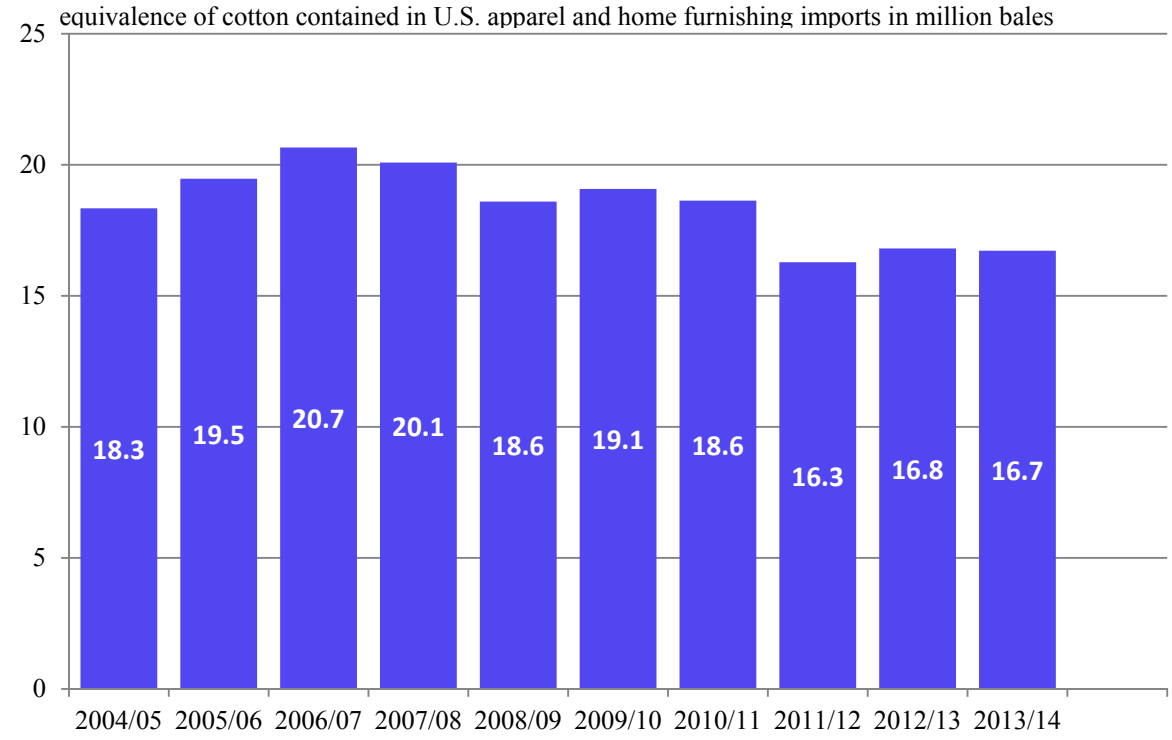

Figure 2. Cotton Bale Equivalence of U.S. Textile and Apparel Imports (Economic Research Service)

At the same time that the estimated bale equivalence of the cotton contained in U.S. textile imports was declining, there was growth in U.S. consumer spending on apparel. There was a period of accelerated growth that followed the recession. In later years (2011-13), there was a period of slow growth. Most recently, there has been another period of acceleration. However, it should be noted that between 2010 and the present that consumer spending has been setting a series of record highs. In 2014, the average annual rate for consumer spending on apparel was 7.2% higher than it average between 2006 and 2007.

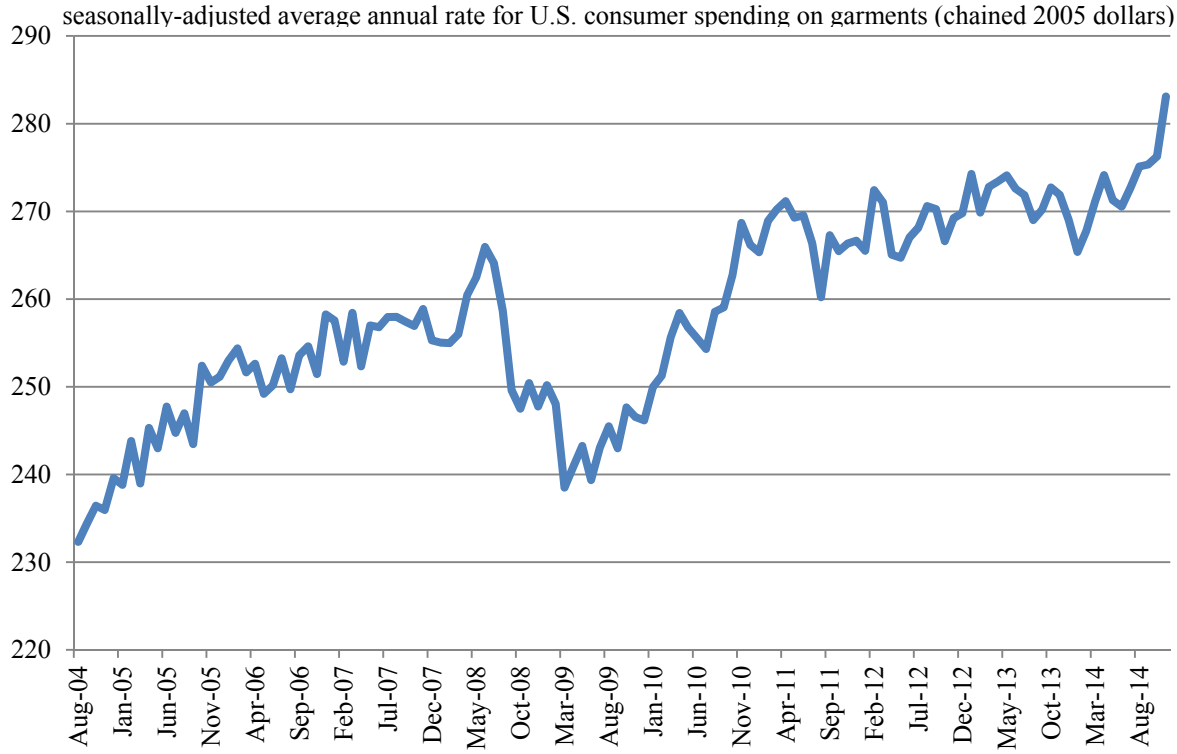

Figure 3. U.S. Consumer Spending on Garments (Bureau of Economic Analysis)

The fact that consumer spending has been setting records at the same time that the bale equivalence of cotton imports have been 20% lower suggests a significant disconnect between what is being sold at retail and the estimated amount of cotton that is being imported in form of finished garments and home textiles. In terms of percentage points, the gap is nearly 30 points wide. Some of the separation can be explained by higher consumer prices for apparel. Since the price spike, retail apparel prices (as measure by the CPI for garments) were 6-7% higher than they were prior to the price spike in 2006-07. Another reason for the separation could be the loss in share that cotton suffered after the price spike. However, most measures of the loss in share indicate a reduction of about 10%. This still leaves another 10 percentage points of separation that are unexplained. The import database developed by Cotton Incorporated, which builds off resources from the Department of Commerce and the USDA, was designed to respond to questions such as these.

Import Classification

Before entering into a discussion of end-use based on import data, it is appropriate to provide an overview of the import classification systems that are used from frame this research. Imports can be classified according to a range of different systems. However, at the root of most classification schemes used by governments around the world is the Harmonized System (HS). The HS was developed by the World Customs Organization (WCO), an independent organization with membership derived from more than 170 countries, and began implementation in 1988 (World Customs Organization).

The HS is organized according to codes, which represent product categories. Longer codes, or codes containing additional digits, denote additional precision. There are 96 categories at the most aggregated level, known as chapters, which have two-digit codes. The most relevant chapters for textile and apparel imports are 61 (knit apparel), 62 (woven apparel), and 63 (other made-up textiles, which includes home textiles).

More detailed product categories are defined by four and six-digit codes. Although the WCO does not maintain a common set of codes for classification beyond the six-digit level, it is not uncommon for countries to have codes that classify imports with greater precision. These more detailed codes can be used to better target specific items for specific tariff rates. One country that classifies imports beyond the six-digit level is the U.S. In the U.S., imports are also classified to the eight and ten-digit levels. To illustrate, an example based on women's t-shirts (ten-digit HS category) is presented in Table 1.

Table 1. Illustration of the Hierarchal HS Import Classification System – Women's Cotton-Dominant T-Shirts

HS Code	Category Description
61	Knit Apparel
6109	T-Shirts, Singlets, Tank Tops and Similar Garments, Knitted or Crocheted
610910	T-Shirts, Singlets, Tank Tops and Similar Garments, of Cotton
6109100040	Women's Cotton T-Shirts, Knitted or Crocheted, Except Underwear

An alternate classification system, which is built from HS classifications, was developed to enforce quotas. With respect to the U.S., two systems limited imports in recent history. The first was the Multi-Fiber Arrangement (MFA), which was used from 1974 to 1994. The second was the Agreement on Textiles and Clothing (ATC) that was adopted in 1995. Both were negotiated as WTO settlements that allowed for progressively lower trade barriers, and therefore successively higher import volumes, for textile and apparel goods (Tan, 2005). In order to apply the quotas, a unit of measure was required. The unit of measure that was applied in the U.S. was square-meter equivalence (SME).

SME could function as a unit to enforce quotas because SME could facilitate aggregation across product categories. To derive the SME of imports for various categories, a series of conversion factors were developed. These conversion factors are a function of unit volumes. For example, to derive the SME for Women's and Girls' Knit Shirts, one would multiple the unit volume brought into the U.S. by 0.5 (the conversion factor is 6.0 SME/dozen knit shirts).

The quantitative limits imposed by the MFA and ATC were applied to categories that were more general than those determined by the HS system. To illustrate, umbrella thresholds (in terms of SME volume) were applied to the larger categories such as the Cotton-Dominant Women's and Girls' Knit Shirts aggregation rather than having a series of individual limits specified for Women's T-Shirts, Girls' T-Shirts, etc.

While the development of these aggregated categories provided benefits in terms of managing quotas, they also assisted researchers investigating end-use consumption by describing imports in terms that allowed for analysis of broad apparel categories. For analyses of fiber share, these categories were particularly useful since they were organized according to dominant fiber type (fiber that makes up more than 50% of the product's weight). To provide an example of how the MFA categories are derived from ten-digit HS codes, the composition in terms of ten-digit HS codes of the MFA category for Women's and Girls' Knit Shirts appears in Table 1.

Table 2. Composition of MFA Category for Women's and Girls' Knit Shirts (ten-digit HS codes)

HS Code	HS Category Description
6104.22.0060	W&G Ensembles of Blouses, Shirts, Tops of Cotton, Knit
6104.29.2049	W&G Ensembles Blouses of Other Textile Materials Subject to Cotton Restraints, Knit
6106.10.0010	Women's Blouses and Shirts of Cotton, Knit
6106.10.0030	Girls' Blouses Not Elsewhere Specified or Indicated (NESOI) of Cotton, Knit
6106.90.2510	W&G Blouses of Silk Subject Cotton Restraints, Knit
6106.90.3010	W&G Blouses of Other Textile Material Subject to Cotton Restraints, Knit
6109.10.0040	Women's T-Shirts Except Underwear of Cotton, Knit
6109.10.0045	Girls' T-Shirts Except Underwear of Cotton, Knit
6109.10.0060	Women's Tank Tops Except Underwear of Cotton, Knit
6109.10.0065	Girls' Tank Tops Except Underwear of Cotton, Knit
6109.10.0070	W&G Articles Similar to T-Shirts & Tank Tops of Cotton, Knit
6110.20.1031	W&G Pullovers Etc. Cotton Knit to Shape 36% Flax Fiber
6110.20.1033	W&G Pullovers Etc. Cotton >=36% Flax Fibers Not Elsewhere Specified or Indicated
6110.20.2045	W&G Sweatshirts of Other Cotton, Knit
6110.20.2077	W&G Pullovers Cotton Knit to Shape < 36% Flax Fibers
6110.20.2079	W&G Pullovers OF Cotton, < 36% Flax Fibers, NESOI
6110.90.9071	W&G Pullovers Knit to Shape Subject to Cotton Restraints NESOI
6110.90.9073	W&G Pullovers Subject to Cotton Restraints Knit NESOI
6112.11.0040	W&G Shirts for Track Suits of Cotton, Knit
6114.20.0010	Women's or Girls' Tops of Cotton, Knitted or Crocheted
6117.90.9020	Parts of Blouses and Shirts of Cotton, Knit

Note: W&G indicates women's and girls' (Office of Textiles and Apparel)

Even though all quantitative limits applied to U.S. textile and apparel imports expired in December 2008, trade data continue to be reported in terms of SME and can be readily accessed from the Department of Commerce's Office of Textile and Apparel (OTEXA) website. A particular benefit of the OTEXA site is that data are reported in terms of both HS codes and in aggregated MFA categories. These data have been important in recent years since they have enabled research regarding the effects of the recession and 2010/11 spike in fiber prices on import volumes and cotton's share.

While these data are valuable, it is noteworthy that they are all expressed in terms of unit counts. When conducting analyses of end-use, it likely would be more appropriate to use data expressed in terms of weight. Data in weight terms allow for a more direct link to raw fiber, since raw fiber production and consumption are often expressed in terms of weight (i.e., 480lb bales or metric tons). In addition, it is possible for product weights to change over time. In such a situation, it would be possible for measures based on counts to inconsistently represent bale equivalence.

Overview of Database

To better understand the nature of the end-use cotton consumption, a new database derived from U.S. import data was developed. Relative to existing import databases (e.g., those derived in terms of SME) that have been heavily used to examine apparel imports, and which were largely based on weighted unit counts, a key contribution of this new database is that it contains information regarding import weight. For discussion of end-use demand, weight, rather than unit counts, is more appropriate since it enables discussion of raw fiber equivalence.

The data included in the database are all accessed from the Department of Commerce and the core data attributes are import weight, unit count, and customs value. These attributes are available for nearly 2,100 different 10-digit HS categories for apparel and home furnishing imports. This list of HS codes represents those that the Office of Textiles and Apparel classifies as either apparel or made-ups and represents 110 different MFA aggregations. Data are updated on a monthly basis, with figures extending back to 1996. Altogether, the database currently represents about 1.4 million observations.

All of the raw weight data are paired with conversion factors developed by the USDA ERS. These conversion factors compensate for fiber lost in the manufacturing process. Their inclusion should allow for a more realistic representation of the amount of raw fiber represented by finished garments.

The analysis supported by the database that is presented in this paper includes discussion of core attributes as well as derived variables. USDA-adjusted weights are used to present a landscape of U.S. end-use consumption. Data regarding this landscape are available over time, and a discussion of change is possible. In addition, USDA conversions allow for cotton content to be estimated independently of other fibers. This allows for cotton fiber end-use to be contrasted against the landscape of total fiber consumption as well as descriptions of cotton's share by product category. Following some preliminary analysis of changes that have occurred over time, analysis was expanded to include some investigation into changes in product weights over time.

Composition and Changes in Apparel Imports

Tables presenting the landscape of the bale equivalence of U.S. apparel imports are shown in Tables 3-5. The first of these tables (Table 3) shows the weight of apparel of all fibers imported. The second table (Table 4) shows the estimated weight of cotton contained in apparel imports. The third table (Table 5) shows cotton's share. Share figures are derived by simply dividing the entries in the cotton weight table (Table 4) by the entries in the total fiber table (Table 3). All of the data in these tables are presented in terms of aggregations of HS codes, similar to the MFA codes commonly used with OTEXA data. Parallel data are available for home furnishings, but are not included in this report due to limitations on space. Year-to-date 2014 data are also available, but were excluded due to spaced limitations. Although the 2014 data are not shown in Tables 3-5, comments appear as appropriate in the below discussion.

The data shown in Figure 4 reveal several important findings. One of these is that there has not only been a decline in cotton end-use, there has also been a decline in end-use fiber consumption for apparel across all fibers. Between 2006-07 and the present, the total apparel end-use "pie" has shrunk by more than 10% (2.6 million bales). The decrease in overall consumption was primarily a product of reduced fiber use for coats, which had a very large decline (-1.0 million bales or -42%) given coats' relatively small proportion of apparel end-use (about -7%), knit shirts (-650,000 bales or -11%), and bottoms (-520,000 bales or -8%). Most of the other categories also experienced declines, with the average percentage decrease across all categories being 18%. Partially offsetting the decreases for most categories were the increases marked for dresses (+460,000 bales or +104%) and socks (+159,000 bales or +25%).

Year-to-date 2014 (through October), there has been a 3% increase in the bale equivalence of apparel imports of all fibers. Recent growth in over fiber volume was a result of more women's and girls' coats and men's and boys' knit shirts.

Changes in end-use consumption for cotton can be contrasted with those for overall end-use by looking at Table 4. When we contrast the figures in the Table 4 with those in Table 3, we can see that the decline in coats was smaller in bale terms (-374,000) but was nearly equal in terms of percentage (-42%). Meanwhile, the declines in knit tops was larger for cotton (-968,000 bales or -20%) than it was for the overall market (-650,000 bales or -11%). This can be possible if there were a loss in share for cotton in knit tops at the same time there were increases in bale equivalence for other fibers. The loss in cotton equivalence for bottoms (-402,000 bales or 9%) was proportional to the loss for bottoms of all fibers (-520,000 bales or 8%). The sole category that increased in cotton bale equivalence between 2006-07 and 2013 was dresses, which increased 40,000 bales or 36%. Although this was positive, the increase was not able to match the increase for the dresses of all fibers.

Year-to-date 2014 (through October), there has been a 2% decrease in the cotton bale equivalence of apparel imports. Recent reductions were primarily a result of less cotton in women's and girls' bottoms.

As mentioned above, a potential driver of disproportional change in cotton apparel end-use relative to overall apparel end-use is change in cotton's share for different categories. Changes in share could have been expected following the 2010/11 price spike. To explore which categories were most affected, we can look at the figures in Table 5. The two leftmost columns can be used to address the effects of changes in share since 2006-07. When we take a look at the percentage point changes among different products, we can see that the largest swings were for socks (-21%), skirts (-19%), and women's and girls' knit shirts (-11%).

To get a better idea about what the effects of changes in share were in terms of bale use, the figures in the leftmost columns were derived. The data shown in this column represent the difference between the amount of cotton that would have been imported if the average share from 2006-07 were preserved in 2013 and the amount of cotton that was imported with the share that occurred in 2013 share. This formulation describes the loss that occurred in 2013 since share from 2006-07 was not maintained.

For example, in the case of women's and girls' knit shirts, that is the difference between 1) the average share of 70.5% from 2006-07 times the total bale equivalence for that category in 2013 (2.3 million bales, from Table 3) less 2) the share of 59.4% in 2013 times the total bale equivalence for that category in 2013 (2.3 million bales, from Table 3). The corresponding 314,000 bale loss was the largest for any category. Most of the largest losses in bale terms resulting from loss in share were for knitwear (W&G Knit Shirts down 314,000 bales, W&G Knit Shirts down 189,000 bales, Socks down 170,000 bales, and Underwear down 111,000 bales).

In year-to-date data for 2014 (through October), there has been a 3 percentage point decrease in cotton's share of apparel imports. Most of the recent loss in share came from knit shirts and coats.

When we take a look at the loss in cotton end-use that resulted from the change in share for apparel, we can see that the total was 1.1 million bales (Table 5). However, if we examine the total loss in cotton end-use that occurred since 2006-07, we see that the decrease was 2.7 million bales (Table 4). Correspondingly, the loss in share represents only about a third of the total decline. With two thirds of the decline in end-use unexplained by share, the question is what happened to the rest.

Changes in Unit Weights

The import database, which features data in terms of weight, as well as data for unit counts, can be used to get a better understanding of what may have happened to the other two-thirds of the loss in end-use that has occurred since 2006-07. One of the ways that the database was used in this investigation was to look at variables that can be derived from the core set of attributes. For example, the average unit weight for a given product category can be derived by simply dividing the weight of the product by the count for that product.

When average unit weights were examined more closely, it was found that there have been widespread reductions in product weights over the past several years. Examples of products that have experienced decreases in average weights are shown in Figures 5 and 6. The data for t-shirts and jeans are examples of 10-digit HS codes that can be pulled from the database.

In the charts, the declines in average unit weights may not appear to be dramatic in terms of weight per unit, but they are relatively important in terms of percentage change. In percentage terms, the decrease for men's cotton-dominant t-shirts was 17%, for men's man-made-dominant t-shirts it was 8.5%, for women's cotton-dominant t-shirts it was 16%, for women's man-made dominant t-shirts it was 9.7%. When one considers that the U.S. imports 1.4 billion t-shirts a year, these changes in product weights have an impact on the fiber equivalence of imports. For jeans, there was a 5.7% decrease in the average weight for men's jeans and a 19.3% decline for the average weight for women's jeans. The annual unit count for jeans is near 500 million.

Cumulative effects for the change in unit weights are shown in Table 6 for the same set of MFA aggregations shown in Tables 3-5. The effects were calculated by multiplying the unit count in 2013 for each HS code falling under each aggregation by the average unit weight for that HS code in 2013. Another product was derived that multiplied the unit count in 2013 for each HS code by the average unit weight for that HS code in 2006-07. The difference between the two products was then taken and those differences are shown in Table 6.

In looking at those data, it is noted that the magnitude of effect on cotton-dominant and man-made dominant products were both over one million bales. Most of the loss on the cotton-dominant side was due to declines in weights for knit shirts. This is due in part to the volume of knit shirts that are imported and the prominent role that unit counts take in these formulations. Since cotton-dominant goods form the majority of certain apparel categories (e.g., knit shirts), the effect of changes in unit weights are more pronounced on the cotton-dominant side.

While the examples in Figure 4 related to t-shirts show larger percentage declines for cotton-dominant goods, the decreases in cotton-dominant items were generally matched by those on the man-made side. To get a better idea about how changes in cotton-dominant and man-made-dominant have occurred in aggregate, indexes have been developed for cotton-dominant and man-made dominant apparel.

To avoid the issue of changes in the composition of apparel imports over time (e.g., fewer coats, more dresses), these indexes were derived at the level of 10-digit HS codes, the most granular level possible. There are codes that are added and subtracted over time, but for each of the 2,100 HS codes with data during the 2006-07 period, individual indexes were created with each month's unit weight divided by the average in 2006 and 20007. These individual indexes were then weighted by 2013 import volume. This weighting eliminates the possibility for changes in the composition of imports over time from biasing results.

A challenge for the maintenance of this index is the addition and subtraction of codes over time. This is an on-going focus of research, but results should be forthcoming.

Summary and Implementation

A purpose of the research presented in this paper was to investigate the 20% decline in the bale equivalence that has occurred since 2006-07. An import database that includes weight data that can be used to convert apparel imports into raw fiber equivalence facilitated this analysis. Findings indicate that about one third of the decline in cotton apparel end-use can be explained by the loss in share. The remaining two-thirds of the decline is a result of a decline in average product weights.

While these findings may be helpful for obtaining a better understanding of some of the factors affecting end-use demand for cotton fiber, it is also important to think about how this information might utilized in efforts for re-building end-use consumption. At Cotton Incorporated, these weight-based data are in the process of being combined with consumer information pertaining to consumer comments related to apparel products.

Previous analysis of consumer comments has found that consumers have noticed products becoming thinner and less durable in recent years. With lower cotton prices, there may some opportunity for retailers to design products that contain more fiber and last-longer.

Table 3. Composition of U.S. Apparel Imports in Terms of 500lb Bales – Cotton Fiber Only

data in 500lb bales	2006	2007	2008	2009	2010	2011	2012	2013	Change (in bales) 06-07 to 2013	Percent Change 06-07 to 2013
Tops	9,007,811	9,109,681	8,439,810	7,534,069	8,438,046	7,873,509	7,644,102	8,085,132	-973,615	-10.7%
Knit Tops	6,929,355	7,024,795	6,661,252	5,913,724	6,591,448	6,218,921	6,041,560	6,319,515	-657,561	-9.4%
M&B Knit Shirts	3,844,535	3,802,961	3,593,223	2,997,904	3,432,645	3,376,453	3,254,728	3,478,165	-345,584	-9.0%
W&G Knit Shirts	3,084,820	3,221,834	3,068,029	2,915,820	3,158,803	2,842,468	2,786,832	2,841,350	-311,977	-9.9%
Woven Shirts	1,505,730	1,505,500	1,287,102	1,169,782	1,349,664	1,197,956	1,193,122	1,332,272	-173,343	-11.5%
M&B Wov. Tops	914,901	911,569	775,746	676,897	822,755	760,611	727,856	778,919	-134,316	-14.7%
W&G Wov. Tops	590,829	593,930	511,355	492,885	526,909	437,345	465,267	553,353	-39,026	-6.6%
Sweaters	572,726	579,386	491,456	450,562	496,934	456,632	409,421	433,345	-142,711	-24.8%
Bottoms	6,373,878	6,346,756	5,982,911	5,566,429	6,117,364	5,486,577	5,480,032	5,838,015	-522,302	-8.2%
M&B Bottoms	3,332,929	3,246,271	3,081,425	2,838,523	3,134,063	2,883,531	2,775,813	2,948,325	-341,275	-10.4%
W&G Bottoms	3,040,949	3,100,485	2,901,487	2,727,906	2,983,301	2,603,045	2,704,220	2,889,690	-181,027	-5.9%
Coats	2,373,142	2,560,901	2,351,965	2,029,159	2,225,618	2,078,598	1,817,244	1,435,620	-1,031,401	-41.8%
M&B Coats	1,147,834	1,252,305	1,123,809	960,790	1,071,911	1,061,452	941,497	893,718	-306,351	-25.5%
W&G Coats	1,225,309	1,308,596	1,228,156	1,068,368	1,153,707	1,017,146	875,747	541,902	-725,050	-57.2%
Dresses	340,994	549,765	609,904	670,401	803,105	865,064	906,241	906,323	460,944	103.5%
Skirts	541,261	401,432	289,366	265,644	267,003	244,345	281,931	248,432	-222,915	-47.3%
Underwear	1,555,989	1,453,911	1,565,462	1,297,243	1,627,436	1,472,094	1,425,874	1,455,839	-49,111	-3.3%
Socks	625,640	667,502	675,737	698,732	834,803	791,685	786,060	805,664	159,093	24.6%
Nightwear	901,270	932,652	825,939	739,614	826,581	741,882	725,649	750,447	-166,514	-18.2%
Baby Clothing	807,053	833,845	723,402	693,421	764,353	671,480	618,579	651,397	-169,052	-20.6%
Other	1,341,543	1,357,026	1,294,167	1,233,587	1,467,701	1,491,176	1,167,625	1,241,195	-108,090	-8.0%
Sum of Apparel	23,868,581	24,213,472	22,758,663	20,728,298	23,372,011	21,716,410	20,853,337	21,418,065	-2,622,962	-10.9%

Table 4. Composition of U.S. Apparel Imports in Terms of 500lb Bales – Cotton Fiber Only

data in 500lb bales	2006	2007	2008	2009	2010	2011	2012	2013	Change (in bales) 06-07 to 2013	Percent Change 06-07 to 2013
Tops	6,008,583	6,152,578	5,720,370	5,127,047	5,707,102	5,088,235	4,733,138	4,977,504	-1,103,077	-18.1%
Knit Tops	4,883,775	4,962,346	4,673,343	4,140,250	4,562,063	4,108,773	3,806,299	3,955,302	-967,759	-19.7%
M&B Knit Shirts	2,720,718	2,678,376	2,497,364	2,141,587	2,398,812	2,291,660	2,134,963	2,266,399	-433,148	-16.0%
W&G Knit Shirts	2,163,057	2,283,970	2,175,979	1,998,663	2,163,251	1,817,113	1,671,336	1,688,903	-534,611	-24.0%
Woven Shirts	894,078	917,139	801,319	749,942	883,848	756,399	727,970	805,165	-100,443	-11.1%
M&B Wov. Tops	567,899	581,291	506,606	454,684	564,599	521,126	504,063	542,533	-32,062	-5.6%
W&G Wov. Tops	326,179	335,847	294,713	295,258	319,249	235,273	223,908	262,632	-68,381	-20.7%
Sweaters	230,730	273,094	245,708	236,855	261,191	223,063	198,869	217,037	-34,875	-13.8%
Bottoms	4,595,474	4,560,976	4,379,139	4,133,042	4,484,038	3,925,277	3,952,234	4,175,741	-402,484	-8.8%
M&B Bottoms	2,342,234	2,266,671	2,201,995	2,048,882	2,232,649	1,999,796	1,950,328	2,056,377	-248,076	-10.8%
W&G Bottoms	2,253,240	2,294,305	2,177,145	2,084,159	2,251,389	1,925,480	2,001,907	2,119,364	-154,409	-6.8%
Coats	865,000	965,952	925,993	758,981	804,554	693,179	597,605	541,051	-374,425	-40.9%
M&B Coats	406,668	490,320	461,842	376,784	408,721	379,602	326,769	310,636	-137,858	-30.7%
W&G Coats	458,332	475,632	464,151	382,197	395,832	313,576	270,835	230,415	-236,567	-50.7%
Dresses	79,155	143,202	164,756	179,479	216,509	181,125	153,020	151,641	40,462	36.4%
Skirts	303,638	213,141	153,784	141,796	125,265	106,299	107,280	88,025	-170,364	-65.9%
Underwear	1,143,964	1,068,322	1,161,735	921,206	1,163,079	1,024,363	958,924	958,094	-148,049	-13.4%
Socks	385,234	414,176	417,079	425,726	483,719	409,957	356,504	327,348	-72,357	-18.1%
Nightwear	594,215	600,605	523,273	448,943	493,181	422,184	411,688	420,459	-176,951	-29.6%
Baby Clothing	588,491	608,313	527,559	503,120	548,449	473,218	435,391	458,709	-139,693	-23.3%
Other	579,236	568,423	522,776	444,940	513,090	508,535	396,962	407,617	-166,213	-29.0%
Sum of Apparel	15,142,990	15,295,689	14,496,465	13,084,279	14,538,987	12,832,372	12,102,746	12,506,188	-2,713,151	-17.8%

Table 5. Cotton's Share of U.S. Apparel Imports

data in 500lb bales	2006	2007	2008	2009	2010	2011	2012	2013	Change in Cotton's Share 06-07 to 2013	Effect in Bales of Change in Share
Tops	66.7%	67.5%	67.8%	68.1%	67.6%	64.6%	61.9%	61.6%	-5.6%	-449,359
Knit Tops	70.5%	70.6%	70.2%	70.0%	69.2%	66.1%	63.0%	62.6%	-8.0%	-503,746
M&B Knit Shirts	70.8%	70.4%	69.5%	71.4%	69.9%	67.9%	65.6%	65.2%	-5.4%	-189,135
W&G Knit Shirts	70.1%	70.9%	70.9%	68.5%	68.5%	63.9%	60.0%	59.4%	-11.1%	-314,388
Woven Shirts	59.4%	60.9%	62.3%	64.1%	65.5%	63.1%	61.0%	60.4%	0.3%	3,820
M&B Wov. Tops	62.1%	63.8%	65.3%	67.2%	68.6%	68.5%	69.3%	69.7%	6.7%	52,436
W&G Wov. Tops	55.2%	56.5%	57.6%	59.9%	60.6%	53.8%	48.1%	47.5%	-8.4%	-46,564
Sweaters	40.3%	47.1%	50.0%	52.6%	52.6%	48.8%	48.6%	50.1%	6.4%	27,619
Bottoms	72.1%	71.9%	73.2%	74.2%	73.3%	71.5%	72.1%	71.5%	-0.5%	-26,511
M&B Bottoms	70.3%	69.8%	71.5%	72.2%	71.2%	69.4%	70.3%	69.7%	-0.3%	-8,916
W&G Bottoms	74.1%	74.0%	75.0%	76.4%	75.5%	74.0%	74.0%	73.3%	-0.7%	-20,378
Coats	36.4%	37.7%	39.4%	37.4%	36.1%	33.3%	32.9%	37.7%	0.6%	8,660
M&B Coats	35.4%	39.2%	41.1%	39.2%	38.1%	35.8%	34.7%	34.8%	-2.5%	-22,643
W&G Coats	37.4%	36.3%	37.8%	35.8%	34.3%	30.8%	30.9%	42.5%	5.6%	30,583
Dresses	23.2%	26.0%	27.0%	26.8%	27.0%	20.9%	16.9%	16.7%	-7.9%	-71,590
Skirts	56.1%	53.1%	53.1%	53.4%	46.9%	43.5%	38.1%	35.4%	-19.2%	-47,610
Underwear	73.5%	73.5%	74.2%	71.0%	71.5%	69.6%	67.3%	65.8%	-7.7%	-111,942
Socks	61.6%	62.0%	61.7%	60.9%	57.9%	51.8%	45.4%	40.6%	-21.2%	-170,646
Nightwear	65.9%	64.4%	63.4%	60.7%	59.7%	56.9%	56.7%	56.0%	-9.1%	-68,564
Baby Clothing	72.9%	73.0%	72.9%	72.6%	71.8%	70.5%	70.4%	70.4%	-2.5%	-16,392
Other	43.2%	41.9%	40.4%	36.1%	35.0%	34.1%	34.0%	32.8%	-9.7%	-120,290
Sum of Apparel	63.4%	63.2%	63.7%	63.1%	62.2%	59.1%	58.0%	58.4%	-4.9%	-1,052,877

Notes: The change in share is expressed in percentage point terms and is the simple difference between the average from 2006-07 and the share in 2013. To isolate the effect of the loss in share, the effects in bale terms are derived as the product of the average share in 2006-07 and the total bale volume from all fibers imported in 2013 minus the product of2013 share and total bale volume from all fibers imported in 2013.

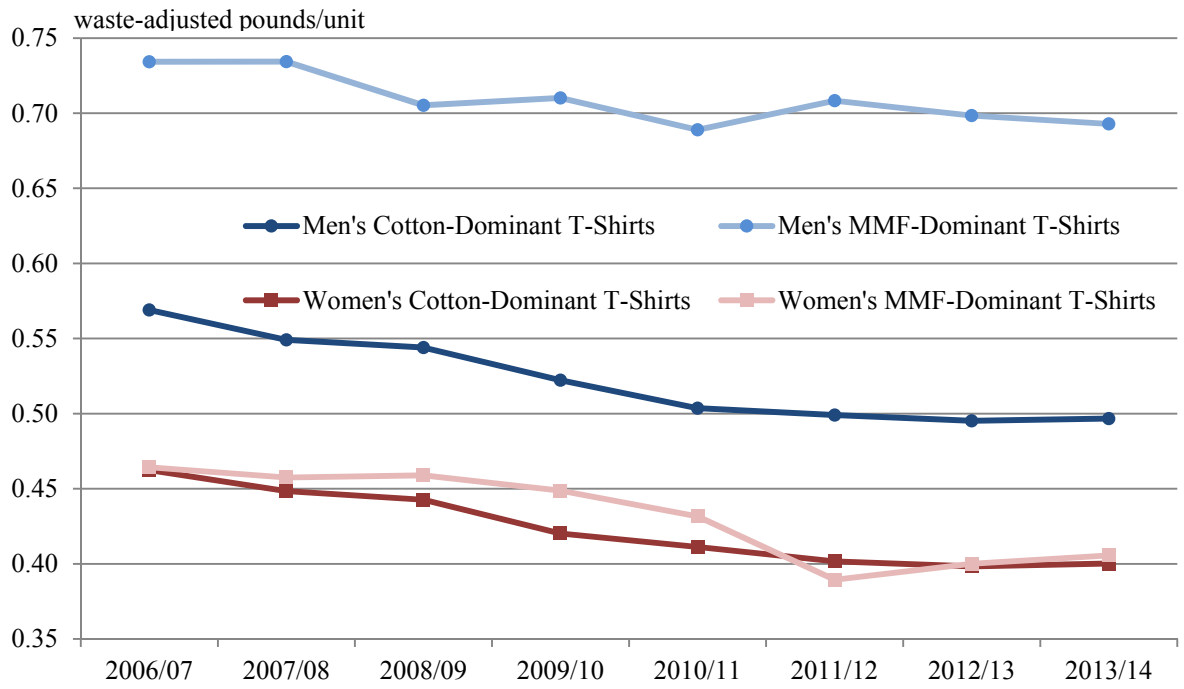

Figure 4. Changes in Average Product Weights for T-Shirts

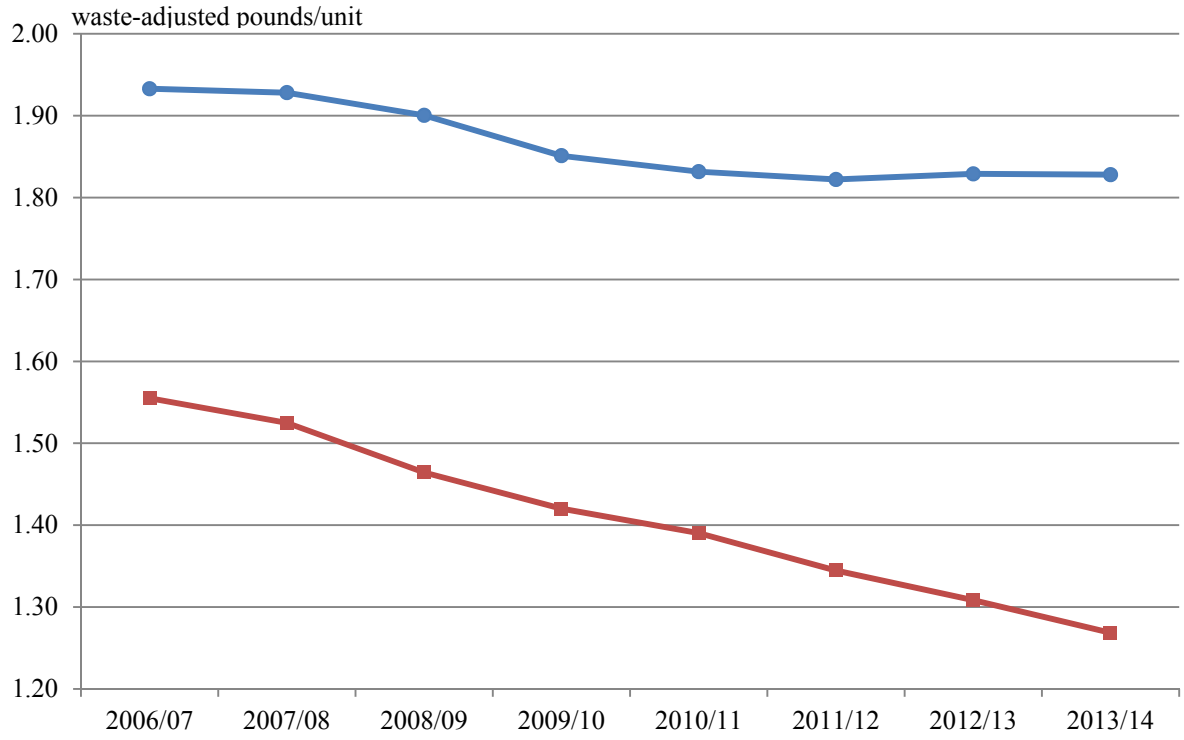

Figure 5. Changes in Average Product Weights for Bottoms

Table 6. Loss in Bale Opportunity Due to Decline in Unit Weight

data in 500lb bales	Cotton-Dominant Apparel	MMF-Dominant Apparel
Tops	-724,771	-389,279
Knit Tops	-609,089	-268,665
M&B Knit Shirts	-409,178	-131,239
W&G Knit Shirts	-199,911	-137,425
Woven Shirts	-65,881	-102,900
M&B Wov. Tops	-63,208	-961
W&G Wov. Tops	-2,673	-101,939
Sweaters	-49,801	-17,714
Bottoms	-747,446	-206,948
M&B Bottoms	-378,798	-150,134
W&G Bottoms	-368,648	-56,814
Coats	-57,945	-362,718
M&B Coats	-4,853	-1,662
W&G Coats	-53,092	-2,239
Dresses	-5,603	-139,843
Skirts	-17,463	-19,139
Underwear	-18,299	-901
Socks	-724	-3,330
Nightwear	-28,423	-45,151
Baby Clothing	n/a	n/a
Other	-10,530	9,372
Sum of Apparel	-1,667,387	-1,129,147

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