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**Cotton: Post-Spike, a Return to Fundamentals**

MORGAN STANLEY RESEARCH  
**Global**

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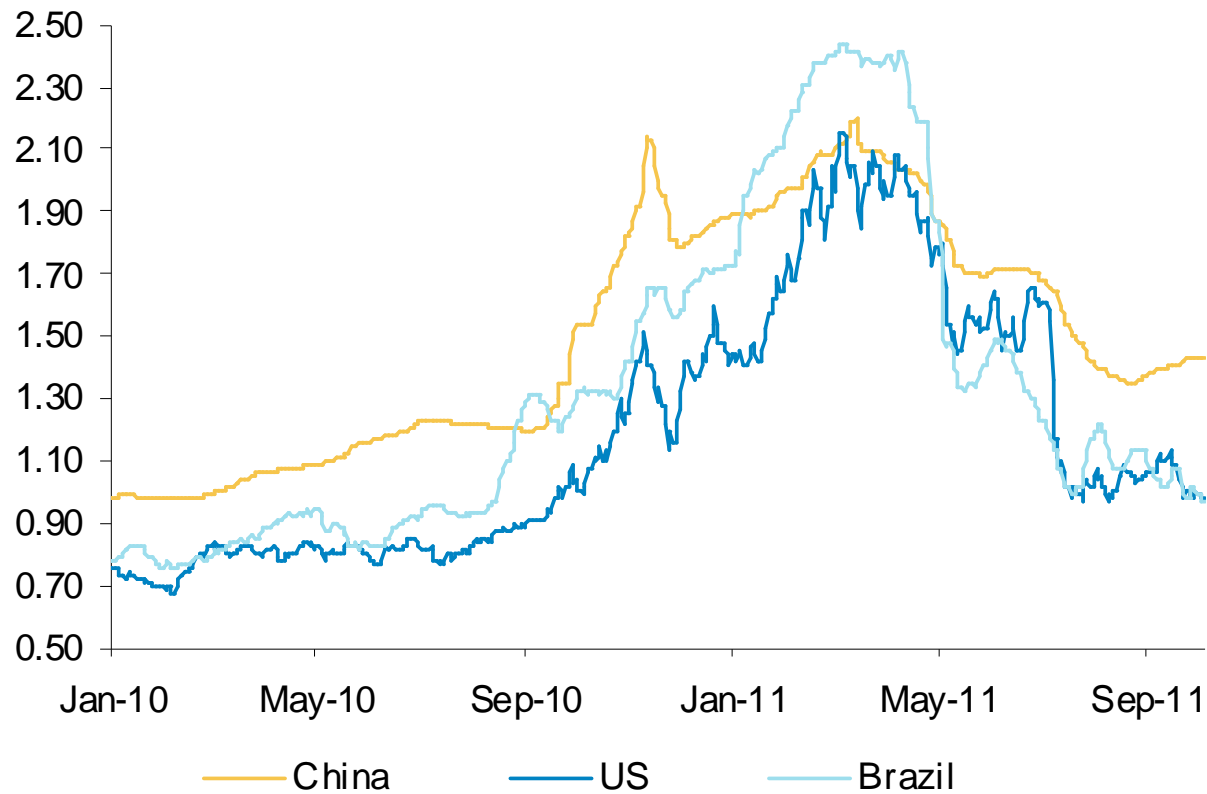
**Cotton**

# Post-Spike, a Return to Fundamentals

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## Cotton Industry Has Witnessed Record Volatility Over the Past Year...

\$/lb

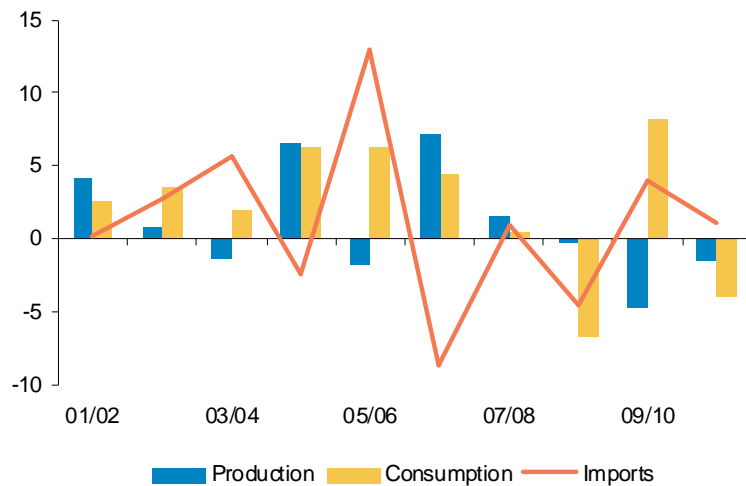


Source: Bloomberg, JCI, CEPEA Morgan Stanley Commodity Research

## ...with Global Tightness Largely to Blame

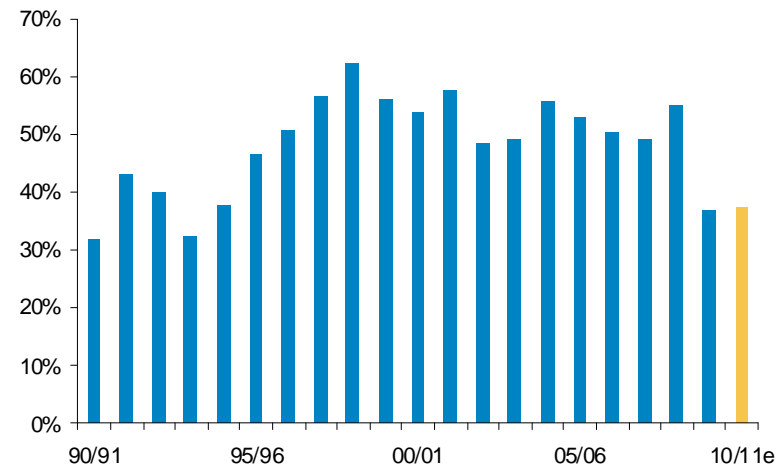
### An Uptick in Chinese Import Orders...

(YoY Change, mln 480-lb bales )



### ...Was Hard To Fill with Global Supply Tight

(Global Stocks-to-Use, %)



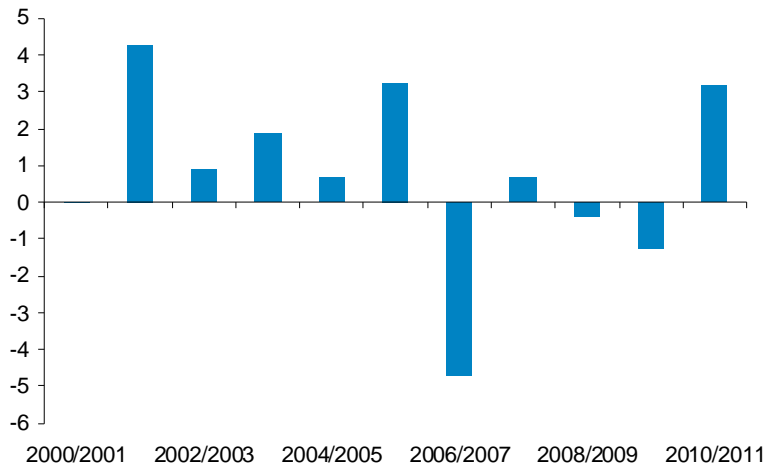
Source: USDA, Morgan Stanley Commodity Research estimates

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## Strong Global Demand Tightened US Supply

### Surging Demand for US Exports...

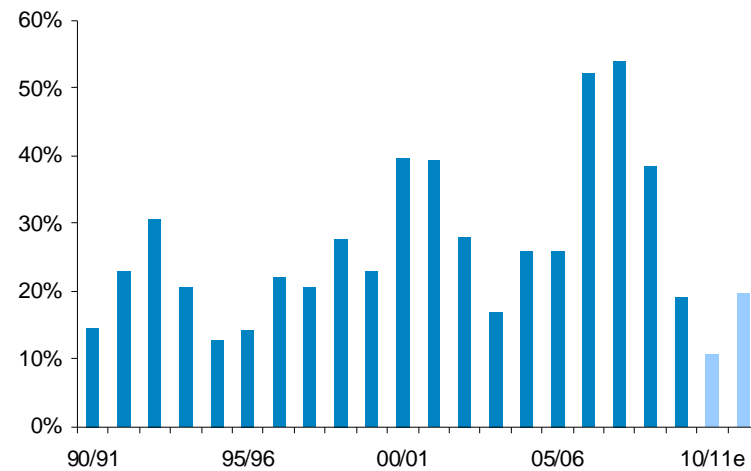
(YoY Change in US Exports, mln 480-lb bales)



Source: USDA, Morgan Stanley Commodity Research estimates

### ...Tightened Stocks in the Marginal Supplier

(US Stocks to Use, %)

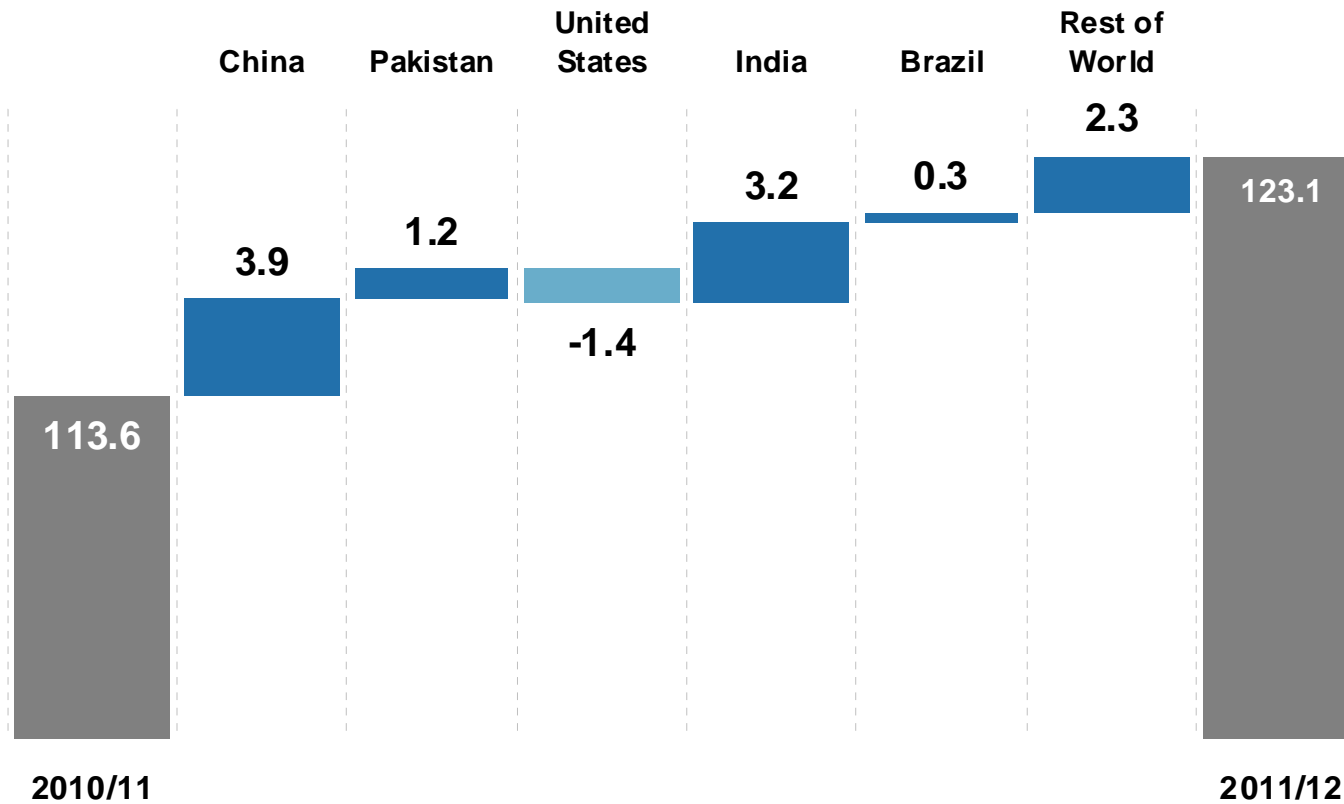


Source: USDA, Morgan Stanley Commodity Research estimates

## The Result of High Prices: More Production

### Expecting a Global Production Response in MY 2011/12

(Global Production, mln 480-lb bales)

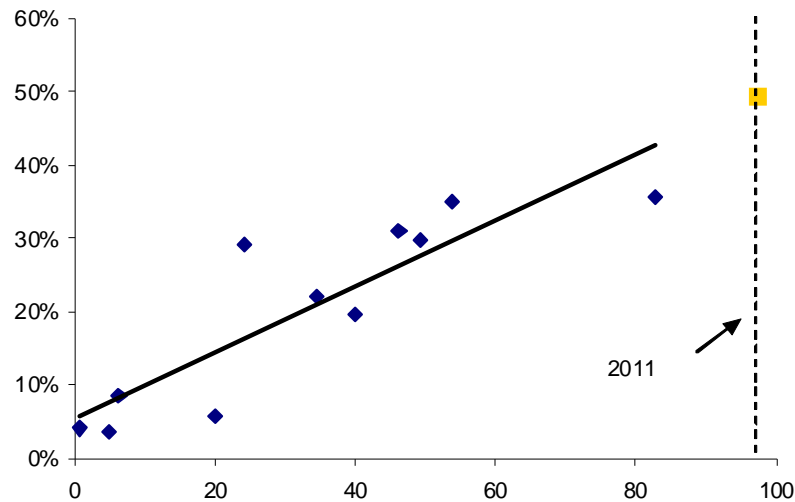


Source: Morgan Stanley Commodity Research estimates

## Rebounding Global Production Should Take Pressure Off the US in 2011/12

### Drought in the Southern US Still a Threat to Production...

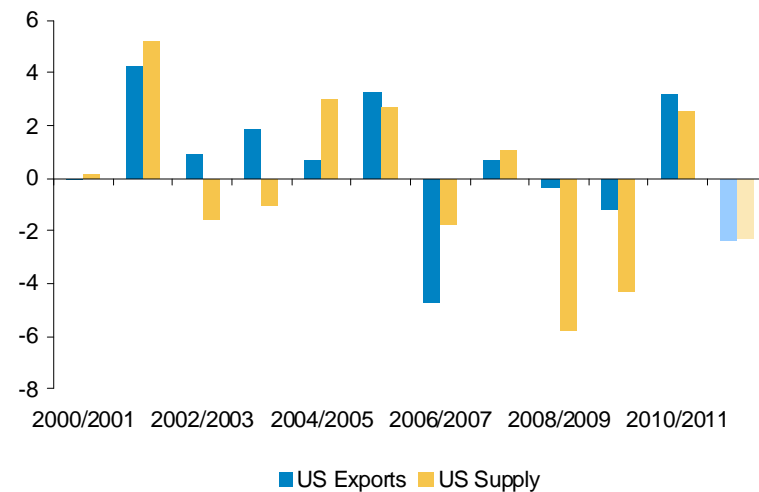
(Vert. Axis: Texas Cotton Abandonment, %; Horiz axis: drought coverage, %)



Source: USDA, Morgan Stanley Commodity Research estimates

### ...Though Lower Exports Should More than Offset Weaker Production

(YoY Δ, mln 480-lb bales)



Source: USDA, Morgan Stanley Commodity Research estimates

## Slowing Economic Outlook a Headwind for Prices

### Lowering Our Global Growth Outlook...

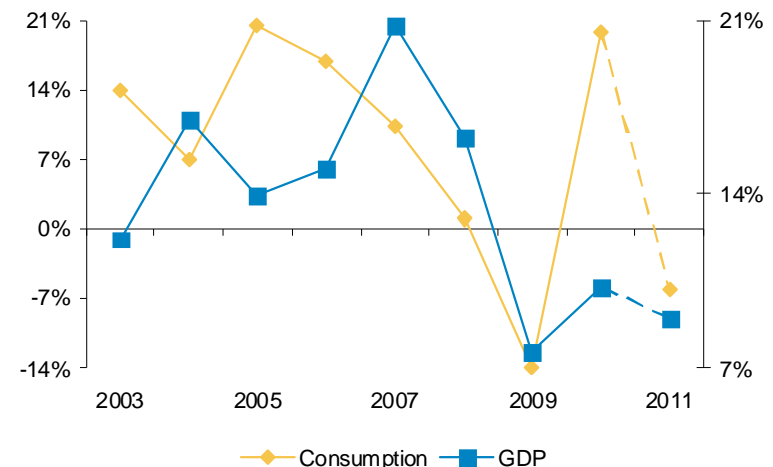
(Morgan Stanley GDP forecasts, YoY % Change)

	2009	2010	2011e			2012e		
			Bear	Base	Bull	Bear	Base	Bull
<b>Global</b>	<b>-0.7</b>	<b>5.1</b>	<b>3.4</b>	<b>3.9</b>	<b>4.2</b>	<b>2.2</b>	<b>3.8</b>	<b>4.6</b>
<b>G10</b>	<b>-3.6</b>	<b>2.6</b>	<b>1.2</b>	<b>1.5</b>	<b>1.8</b>	<b>0.0</b>	<b>1.5</b>	<b>2.2</b>
US	-2.6	3.0	1.6	1.8	1.9	0.2	2.1	3.0
EU	-4.1	1.7	1.4	1.7	2.1	-0.7	0.5	1.1
Japan	-6.3	4.0	-1.2	-0.6	0.0	-0.5	1.3	1.9
UK	-4.9	1.4	1.0	1.2	1.3	0.6	1.4	1.8
<b>EM</b>	<b>2.6</b>	<b>7.8</b>	<b>5.8</b>	<b>6.4</b>	<b>6.8</b>	<b>4.4</b>	<b>6.1</b>	<b>6.9</b>
China	9.2	10.3	8.6	9.0	9.3	7.8	8.7	9.2
India	7.2	9.0	6.5	7.3	8.0	6.2	7.4	8.5
Russia	-7.8	4.0	4.5	4.7	4.8	4.0	5.2	5.5
Brazil	-0.2	7.5	3.2	3.7	4.0	2.0	3.5	4.6

Source: Morgan Stanley Commodity Research estimates

### ...and Even China is not Immune to a DM Slowdown

(Left axis: YoY Δ in Chinese cotton demand; right axis: YoY Chinese GDP growth)

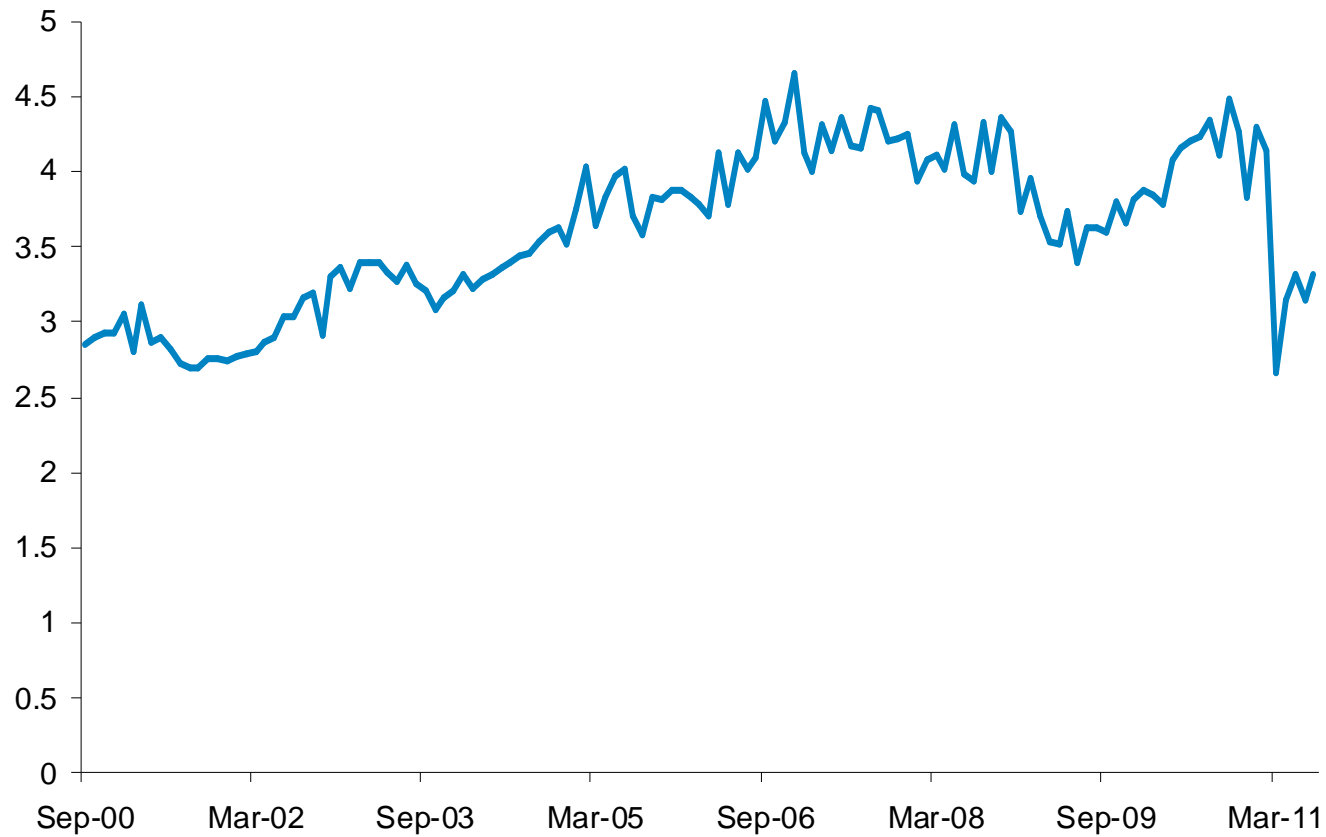


Source: USDA, Morgan Stanley Commodity Research estimates

## US Apparel Demand Showing Signs of Weakness

### US Apparel Imports Slowing

(US apparel imports, bln \$US)

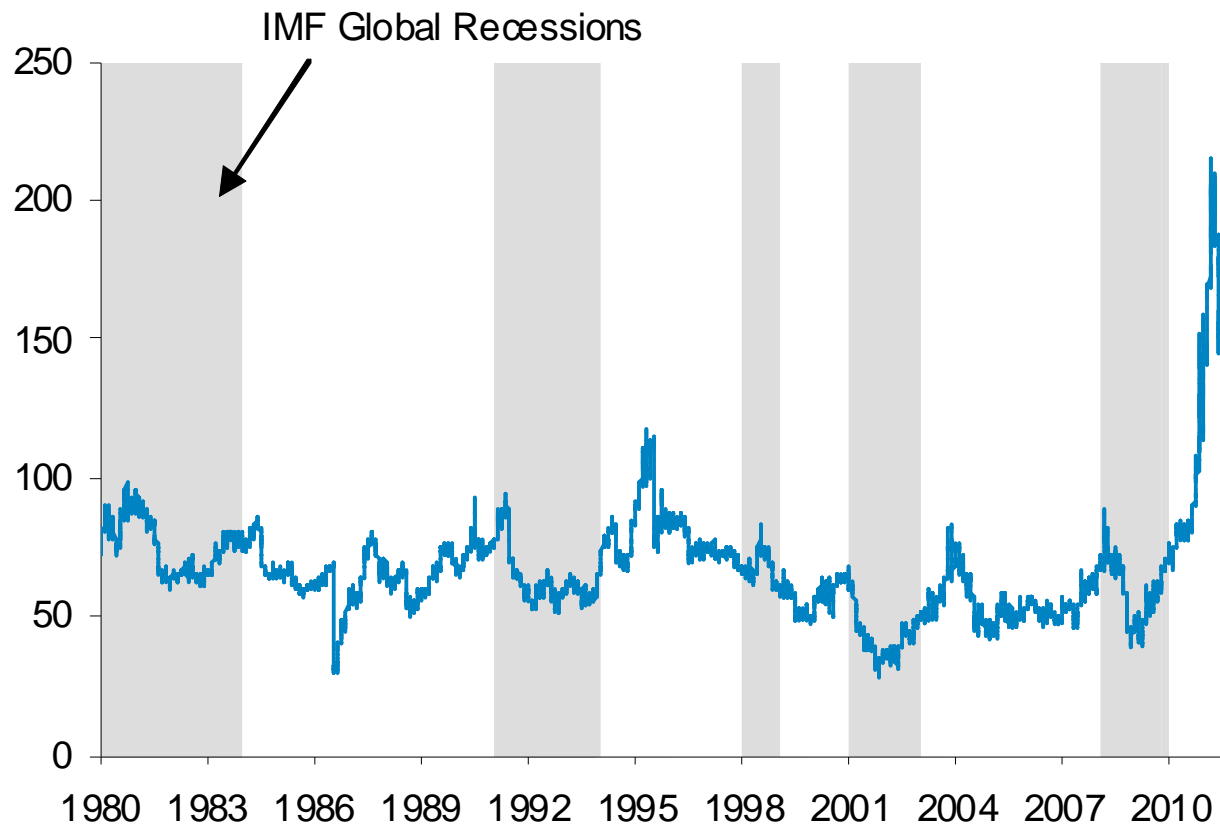


Source: Bloomberg, US Census Bureau, Morgan Stanley Commodity Research

## Cotton Price Response to Slower Growth Consistently Negative

**While Not Our Base Case, Global Recessions Have Historically Seen Prolonged Cotton Price Weakness**

(Front-month futures cotton price, ¢/lb)

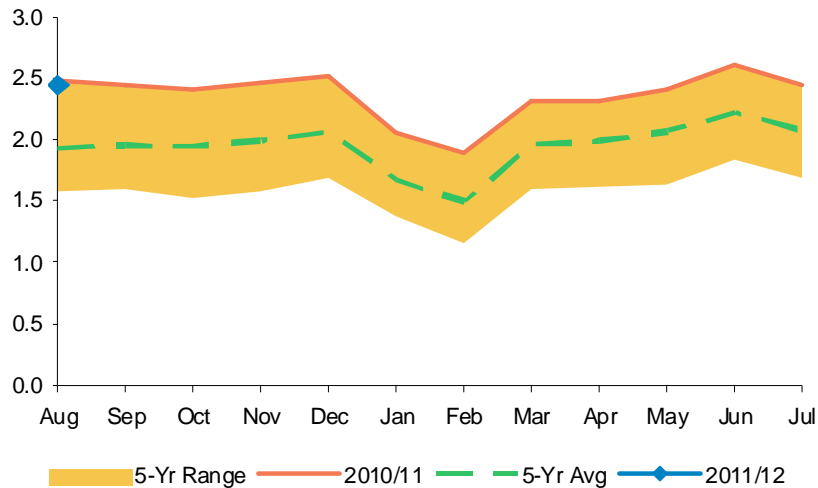


Source: IMF, ICE, Bloomberg, Morgan Stanley Commodity Research

## Weakness in Apparel Demand Starting to Filter Through to Cotton

### The First Slowdown in Chinese Yarn Production Since January 2009...

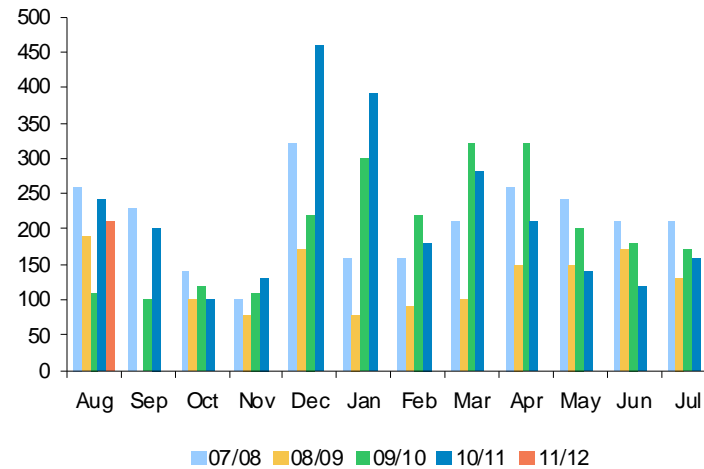
(Monthly Chinese yarn production, mln MT)



Source: CNCotton, Morgan Stanley Commodity Research

### ...Taking Pressure Off of Global Exports

(Chinese monthly imports, '000 MT)

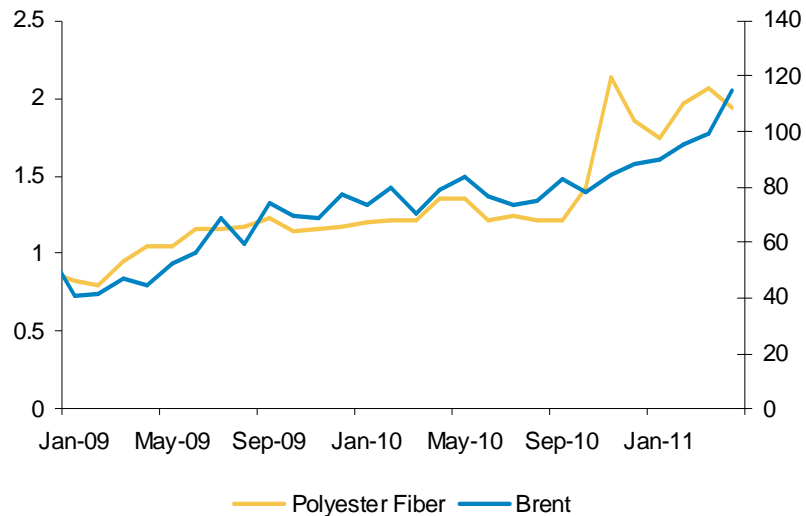


Source: Bloomberg, China General Customs Administration, Morgan Stanley Commodity Research

## Crude Weakness Increasing Attractiveness of Substitutes

### Crude Prices Move with Polyester Prices...

(Left axis: Polyester fiber prices, \$/kg; right axis: Brent prices, \$/bbl)



Source: Datastream, FactSet, Morgan Stanley Commodity Research estimates

### ...and Brent Forecast Recently Revised Down

Average Year Price (\$/bbl)	2012	
	New	Prior
<b>Crude Oil (Brent)</b>	<b>100</b>	<b>130</b>
<i>Forward Curve</i>	103	
<i>Bull</i>	115	140
<i>Bear</i>	75	70

Source: Morgan Stanley Commodity Research estimates

## US Acreage Competition Stiff

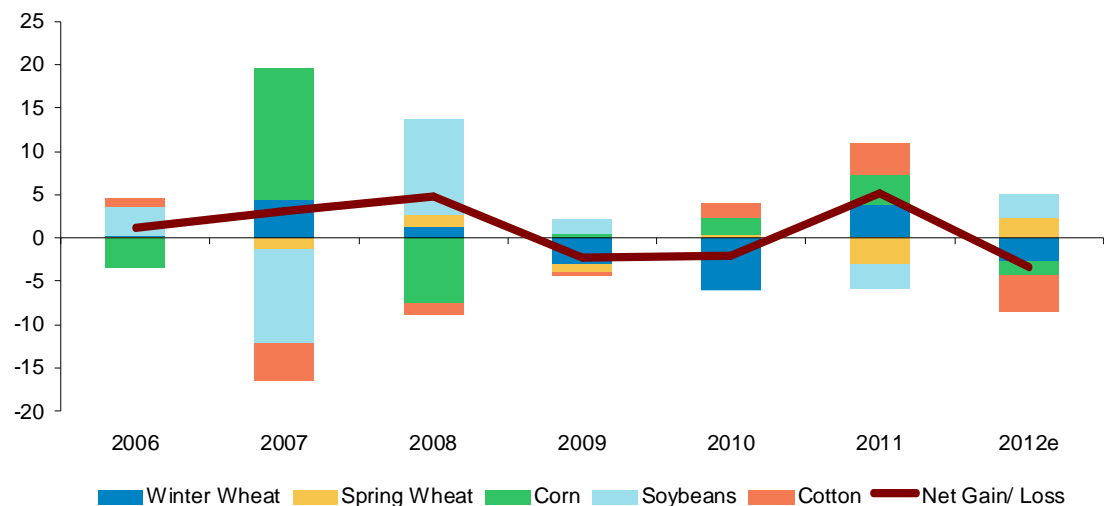
### US Cotton Supply Demand Balance

US			USDA Forecast		MS FORECAST			
	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2010/2011e	2011/2012e	2012/2013e
Planted Acres	10.83	9.47	9.15	10.97	14.72	10.97	14.72	10.46
Area Harvested (1000 HA)	4,245	3,063	3,047	4,330	3,986	4,330	3,986	3,747
Area Harvested (Mln Acres)	10.5	7.6	7.5	10.7	9.8	10.7	9.8	9.3
Harvested/Planted	97%	80%	82%	97%	67%	97%	67%	88%
Beginning Stocks ('000 480-lb bales)	9,479	10,051	6,337	2,947	2,600	2,947	2,020	3,078
Production ('000 480-lb bales)	19,207	12,815	12,188	18,104	16,556	18,104	16,714	16,375
Imports ('000 480-lb bales)	12	0	0	9	10	9	0	0
<b>Total Supply ('000 480-lb bales)</b>	<b>28,698</b>	<b>22,866</b>	<b>18,525</b>	<b>21,060</b>	<b>19,166</b>	<b>21,060</b>	<b>18,734</b>	<b>19,453</b>
Exports ('000 480-lb bales)	13,634	13,261	12,037	14,376	12,000	15,200	12,000	12,480
Use ('000 480-lb bales)	4,584	3,541	3,550	3,900	3,800	3,656	3,656	3,290
Loss ('000 480-lb bales)	429	-273	-9	184	-34	184	0	0
<b>Consumption ('000 480-lb bales)</b>	<b>5,013</b>	<b>3,268</b>	<b>3,541</b>	<b>4,084</b>	<b>3,766</b>	<b>3,840</b>	<b>3,656</b>	<b>3,290</b>
Ending Stocks ('000 480-lb bales)	10,051	6,337	2,947	2,600	3,400	2,020	3,078	3,683
Total Demand	18,647	16,529	15,578	18,460	15,766	19,040	15,656	15,770
Stock to Use %	53.9%	38.3%	18.9%	14.1%	21.6%	10.6%	19.7%	23.4%

Source: USDA, Morgan Stanley Commodity Research estimates

### Cotton, Soybeans, Wheat, and Corn Gain Acreage Often at the Expense of Each Other

(Harvested area YoY Change. mln acres)

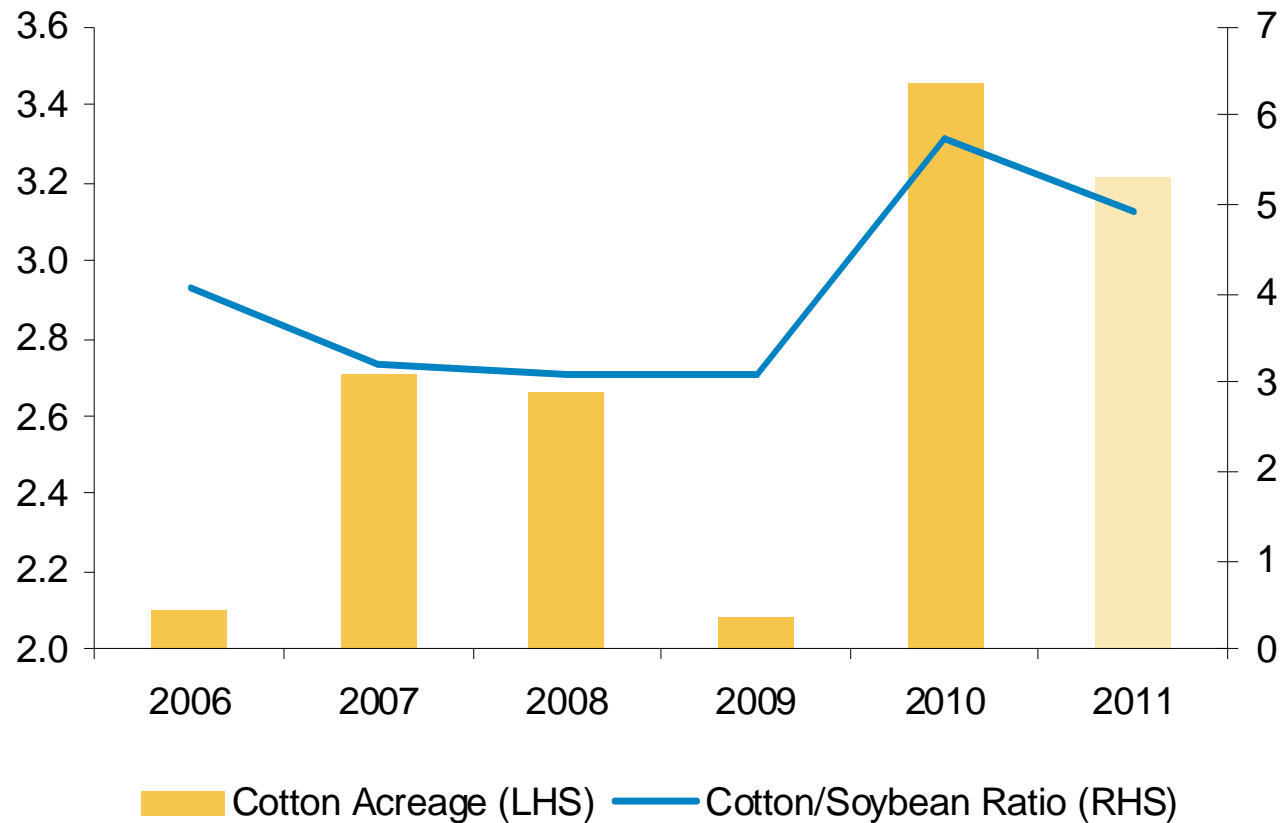


Source: USDA, Morgan Stanley Commodity Research estimates

## Price Incentive Waning for South American Farmers

### After a Large Increase in Brazilian Acreage in 2010, Steeper Competition from Grains in 2011

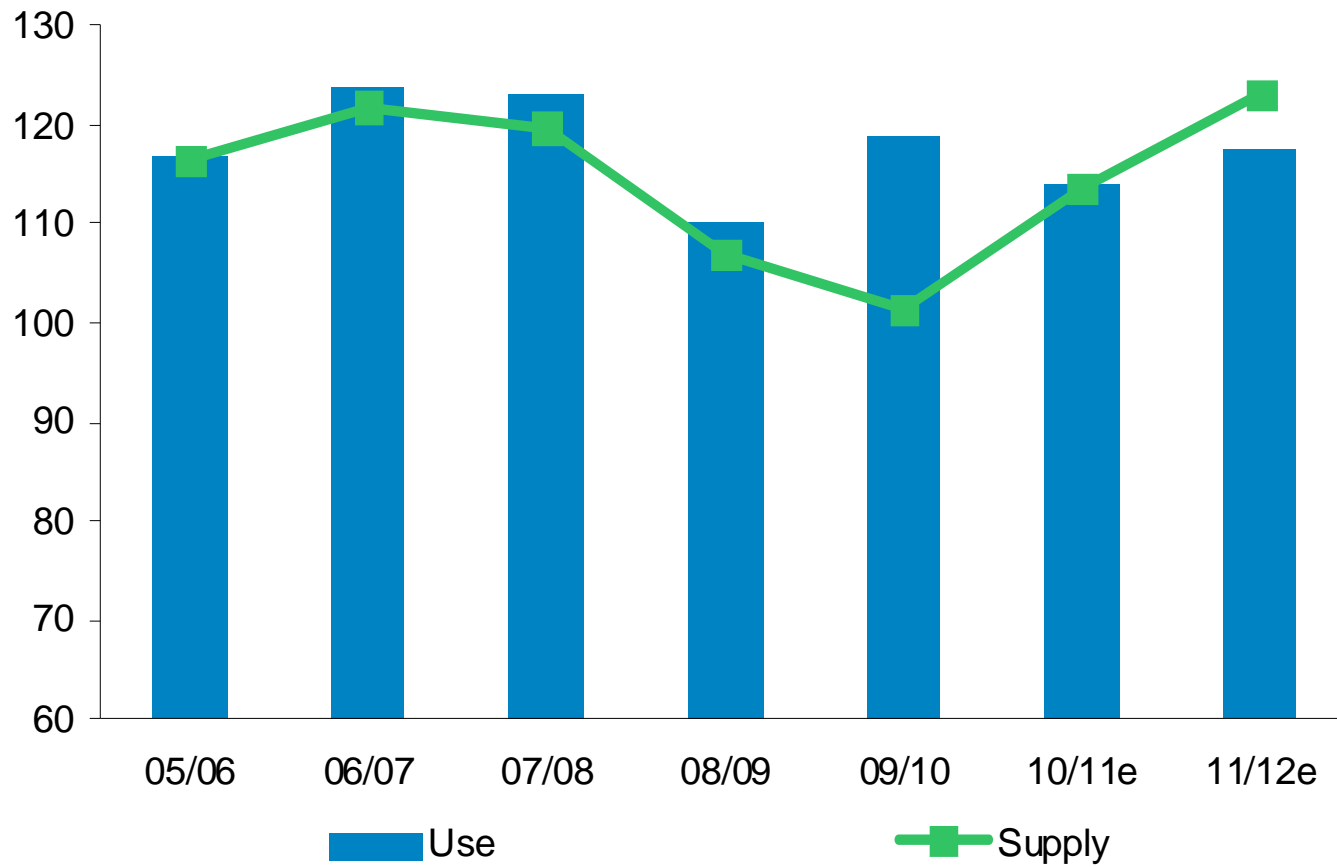
(LHS: Brazilian harvested area, mIn ha; RHS: Average October Cotton/Soybean Price Ratio, Paranagua, Brazil)



Source: USDA, CEPEA, Morgan Stanley Commodity Research estimates  
 Note: 2011 cotton/soybean ratio based from prices on Oct 4, 2011

## Though Still Seeing Global Surpluses in 2011/12

(Global supply and use, mln 480-lb bales)



Source: USDA, Morgan Stanley Commodity Research estimates

## There Are Limits to How High Prices Can Go

### World Cotton Supply and Demand Balance

World	USDA Forecast					MS FORECAST		
	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2010/2011e	2011/2012e	2012/2013e
Area Harvested (1000 HA)	32,903	30,591	30,114	33,511	35,813	33,511	35,512	35,236
Beginning Stocks ('000 480-lb bales)	62,270	60,743	60,553	43,888	43,970	43,888	42,445	47,560
Production ('000 480-lb bales)	119,699	107,081	101,384	114,557	122,962	113,607	123,119	124,651
Imports ('000 480-lb bales)	38,921	30,176	36,244	35,330	37,308	35,330	37,659	39,076
<b>Total Supply ('000 480-lb bales)</b>	<b>220,890</b>	<b>198,000</b>	<b>198,181</b>	<b>193,775</b>	<b>204,240</b>	<b>192,825</b>	<b>203,223</b>	<b>211,287</b>
Exports ('000 480-lb bales)	39,005	30,065	35,570	35,383	37,300	36,202	38,132	39,610
Use ('000 480-lb bales)	123,296	110,015	118,885	114,391	115,220	114,147	117,685	120,996
Loss ('000 480-lb bales)	-2,154	-2,633	-162	31	-187	31	-153	-125
<b>Consumption ('000 480-lb bales)</b>	<b>121,142</b>	<b>107,382</b>	<b>118,723</b>	<b>114,422</b>	<b>115,033</b>	<b>114,178</b>	<b>117,532</b>	<b>120,871</b>
Ending Stocks ('000 480-lb bales)	60,743	60,553	43,888	43,970	51,907	42,445	47,560	50,805
Total Distribution ('000 480-lb bales)	220,890	198,000	198,181	193,775	204,240	192,825	203,223	211,287
<b>Stock to Use %</b>	<b>49.3%</b>	<b>55.0%</b>	<b>36.9%</b>	<b>38.4%</b>	<b>45.1%</b>	<b>37.2%</b>	<b>40.4%</b>	<b>42.0%</b>
Yield (KG/HA)	792	762	733	744	748	738	755	770
Yield(pounds/acre)	707	680	654	664	667	659	673	687

Source: USDA, Morgan Stanley Commodity Research

### Price Forecast Table for Cotton

Commodity	(USD/bu)	10/11	11/12	12/13
Cotton	USD/lb	143	100	80
Curve		-	98	94

Source: Morgan Stanley Commodity Research estimates

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