

## Commodity Spotlight



USDA photo

# Price Recovery Elusive For Cotton

Commodity prices around the world have been relatively low since the late 1990s, and cotton prices remain about 30 percent below the 1990-94 average. While prices of some major field crops have recovered from their recent lows, cotton and rice have been left behind. Global ending stocks for cotton, rice, wheat, corn, and soybeans are all expected to fall during 2002/03 (August-July), but only cotton and rice prices defy the rising trend currently enjoyed by other crops. Stocks are contracting substantially more for wheat, corn, and soybeans than for cotton, particularly in the U.S. Also, China's role in world cotton and rice consumption is larger than for these other crops, and through 2002/03 China appears likely to continue the stock reductions initiated for most major crops several years ago.

The interaction of prices, production, and consumption is similar for most agricultural commodities. Major field crops like cotton, rice, wheat, corn, and soybeans are produced with at least similar if not in fact interchangeable inputs. Macroeconomic events tend to affect crops in a consistent manner across the board, and the agricultural policies of major producing and consuming countries also generate effects that are similar across a wide spectrum of crops. Less commonly, weather

events that produce unexpected levels of output can affect a number of crops simultaneously.

From the late 1990s through 2001, cotton, rice, wheat, corn, and soybeans were all affected by the macroeconomic environment, particularly the strong U.S. dollar, and a slowing world economy. Agricultural policies in the U.S., China, and India, while each very different, were similar for several crops within each country: the U.S. marketing loan programs and emergency payments protected U.S. producers' returns, China's efforts to shrink govern-

ment stocks shifted grain and cotton trade flows toward exports, and India's high rice and wheat support prices resulted in a shift toward exports as well.

During 1995-2001, world crop prices generally fell, and 2001/02 corn, wheat, and soybean prices averaged 10-20 percent below their average levels from the first half of the 1990s. Rice prices dipped 32 percent lower and cotton 43 percent. By August 2002, wheat prices had improved such that they were 14 percent above their 1990-94 average, and corn and soybean prices were each within 3 percentage points. But, cotton and rice prices remained about 30 percent below the 1990-94 average.

### "Excess" Consumption Across Commodities

Generally, the correlations among commodity prices can also be observed in the correlation of "excess" consumption of five crops—cotton, rice, wheat, corn, and soybeans. Excess consumption of a commodity is the amount that world consumption exceeds production in a given year, divided by the total level of consumption of the commodity. Since shocks that affect these five crops are often common, the trends and yearly fluctuations in excess consumption will be related.

Early in the 1990s, consumption of these five commodities generally exceeded production, and prices rose. During the latter half of the 1990s the opposite held true, and recently the trend has reversed once again. Interestingly, during 2002/03, con-

### Calculating Excess Consumption

Excess consumption in this article is simply calculated as (consumption - production) / consumption. It measures the difference between global consumption and production as a proportion of the total consumption of a given commodity in a given year.

For example: USDA's estimate of world production is subtracted from estimated world consumption. This difference is divided by the estimate of consumption to calculate a percentage which is comparable across commodities. The difference is calculated as a percentage of consumption rather than production since consumption has less annual variation than production. Weather shocks introduce substantially more variability into annual agricultural production than to consumption.

Averaging the estimates of excess consumption over more than 1 year removes the effects of weather shocks. A weather-driven change in production, or a temporary consumption shock, may induce an offsetting change in planted area and production or consumption in the next year. A moving average over 3 years removes these offsetting changes, providing a clearer picture of the economic conditions facing each commodity.

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sumption is expected to exceed production for all five of these crops.

The trends in excess consumption roughly correspond to trends in world economic growth. According to the International Monetary Fund (IMF), world economic growth, which averaged 3.9 percent annually during 1994-97, and subsequently slowed with the Asian financial crisis, fell to 2.2 percent in 2001 and 2.8 percent in 2002.

Differential response to income shocks might be one factor leading to different consumption and price behavior for cotton. The other commodities are food or inputs into food production, and consumers have less latitude with food consumption in a given year than with clothing and other goods. This could in part explain why cotton's excess consumption was the most consistently negative of these commodities starting in marketing year 1996/97, with the onset of the Asian financial crisis.

A number of other commodities have prices as low as cotton, particularly industrial inputs. According to data from the IMF, copper, coffee, sugar, and tin prices through August 2002 were even further below their 1990-94 averages than were cotton prices. Groundnut, lead, and prices for both hardwood and softwood logs were all at least 25 percent below average in August 2002. Metals and hardwoods are industrial inputs, as are a number of other commodities with strong price correlations with cotton. In fact, the correlation between these prices and cotton prices is generally higher than between cotton and grains. For example, cotton's world price has shown an 80-percent correlation with copper prices since 1990 and a 79-percent correlation with rubber. In contrast, cotton's correlation has been only 47 percent with wheat, and 53 percent with corn. Despite profound differences in production, cotton and other industrial inputs see correlated price changes as economic growth ebbs and flows.

Another macroeconomic development affecting all these commodities is the strength of the dollar. Relatively undifferentiated goods whose producers have little market power are particularly likely to see price changes driven by currency fluctua-

### World Prices for Cotton and Rice Remain Low in 2002

	Cotton	Rice	Soybeans	Corn	Wheat
<i>Index (1990-94 average=100)</i>					
1995	115	128	121	154	150
1996	106	120	129	119	121
1997	98	107	112	105	97
1998	80	101	86	88	82
1999	71	82	83	83	77
2000	77	65	80	82	90
2001	57	68	80	86	89
2002	67	70	96	105	124

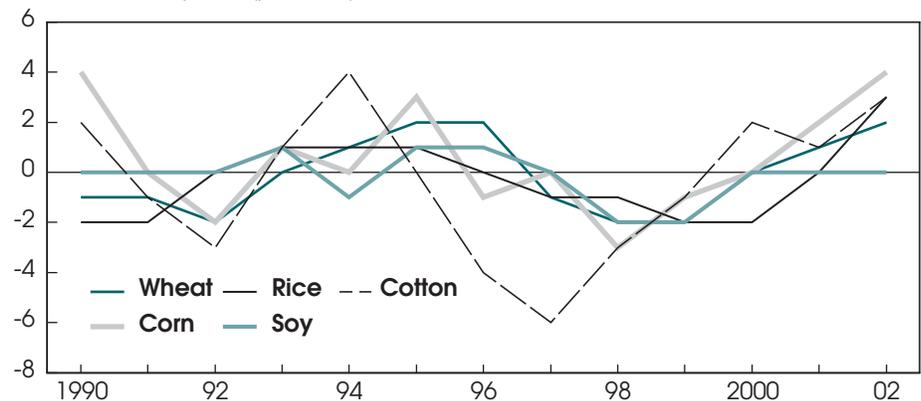
August-July averages. August-September 2002.

Source: USDA—Cotton: A-Index, Northern Europe; Rice: Thailand, 100% B; Soybeans: #2 yellow, U.S. Gulf ports; Corn: #3 yellow, U.S. Gulf ports; Wheat: #2 hard winter, U.S. Gulf Ports.

Economic Research Service, USDA

### Excess Consumption of Major Field Crops is Trending Upwards

Excess consumption (percent)\*



\*Excess consumption is the amount that global consumption exceeds production in a given year, divided by the total level of consumption.

Economic Research Service, USDA

tions, and agricultural commodities are a good example. Since strength of the U.S. dollar in part reflects developments within the U.S., the dollar has strengthened with respect to virtually every currency in the world. However, some currencies have weakened more against the dollar than others, and some countries have little involvement in one commodity but a great deal in another.

Thus, the impact of the dollar on world prices of various commodities can differ greatly. For example, Argentina and Brazil account for a larger proportion of world soybean production (42 percent) than any other commodity. Their currencies have also weakened more than virtually any other country recently. Weighted for foreign soybean production, the U.S. dollar strengthened by about 80 percent between January 2001 and October 2002.

In contrast, the equivalent production-weighted measure for cotton strengthened by only 12 percent, and for rice only 2 percent. Weighted by corn production, the dollar strengthened 20 percent and for wheat production 7 percent. The relative ranking of expected dollar impacts holds over longer time periods as well, so relatively low cotton and rice prices compared with other commodities do not seem attributable to a greater exchange-rate effect.

Also, China's recent accession to the WTO indicates its increasing integration into world markets, but this integration is still incomplete. Thus, China's agricultural policy decisions are driven by internal developments to a greater extent than if China were more fully integrated into the world economy. Since China is either the world's largest (rice, cotton, and wheat),

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or world's second-largest (corn and soybean meal) consumer of the commodities examined here, shifts in its agricultural policy can correspondingly affect world markets of these products. A substantial portion of the world's excess consumption in recent years is attributable to China's efforts to reduce its enormous government stocks. While much of the data on China's agriculture has been questioned at one time or another, it is clear that China either has been importing less in recent years or has been exporting more. One result is growing commodity stocks outside China, particularly rice and cotton.

### Near-Term Outlook for U.S. Stock-Holding

While foreign cotton stocks in 2002/03 are projected to be the lowest in 8 years, U.S. stocks are expected to remain at relatively high levels when compared with the 1990s. U.S. cotton stocks are projected at 6.8 million 480-pound bales in 2002/03. Although 11 percent lower than a year ago, U.S. cotton stocks remain an astonishing 90 percent above the 1990-99 average. Consequently, the U.S. has increased its share of world cotton stocks considerably as foreign countries, such as China, have reduced theirs.

The buildup in U.S. stocks in 2001/02 was largely the result of a record crop, as the rise in production outpaced gains in demand. At the same time, 2001/02 foreign production matched its record output

of 10 years earlier, pushing world supplies to their largest level ever. This abundant global cotton supply, along with the economic recession that began in the U.S. in 2001, resulted in low world cotton prices in 2001/02. Subsequently, lower prices led to reductions in prospective cotton production in 2002 and also contributed to an increase in worldwide cotton demand.

In the U.S., area planted to cotton in 2002 decreased by 9 percent to the lowest in 4 years. As planting time approached this spring, alternative crops became relatively more profitable. Declines in 2002 cotton area were largely the result of cotton farm prices falling to 30-year lows last season. In addition, incentives guaranteed under revenue insurance programs were less attractive this year due to the lower prices.

Across the Cotton Belt, planted area declines were prominent and, as a result, 2002 production is currently projected at 18.1 million bales, more than 2 million bales (11 percent) below last season's record. Furthermore, lower cotton production is expected in each region, except the Southwest (Texas, Oklahoma, and Kansas), compared with 2001/02. Production in the Southwest is forecast 17 percent above last season as harvested area is projected to be the highest in 3 years, while at the same time, yield is forecast to be the second highest ever. Meanwhile, higher yields in the Delta and West regions only partially offset the effects of the significant area declines experienced

this season. In contrast, Southeast yields, despite only a slight reduction in area are projected to be the second lowest in 7 years as severe dryness prevailed throughout much of the growing season. Overall, U.S. cotton yield is estimated at 674 pounds per harvested acre, 4 percent below 2001 but the second highest since 1996. In contrast, U.S. soybean yields are the second lowest since 1995, while corn and wheat yields are the lowest since 1997 and 1991, respectively.

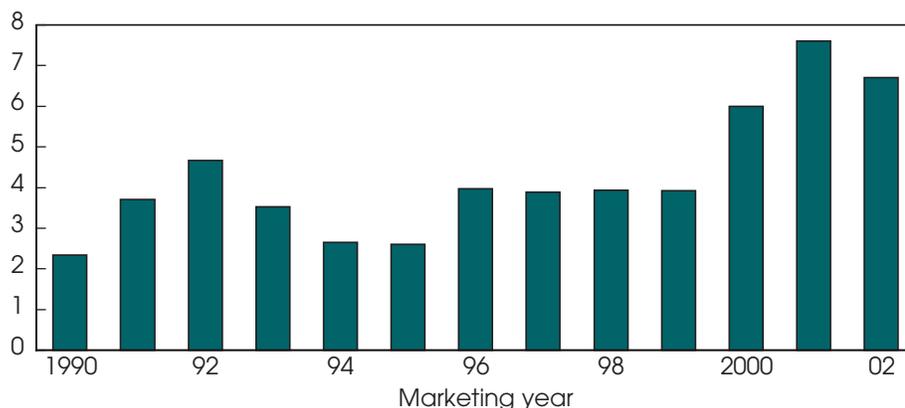
While U.S. output is expected lower this season, demand for U.S. cotton is currently projected up 1 percent to 18.9 million bales, with mill use rising slightly and exports holding constant. Unlike the previous decade, the bulk of U.S. cotton is now going to foreign mills as spinning capacity in the U.S. has declined dramatically. Domestic mills have been under tremendous price pressure from imports as the U.S. dollar recently reached heights not seen in over a decade. In fact, U.S. imports of cotton products have risen for 13 consecutive years and counting. As a result, many U.S. mills have had to restructure their businesses, and many plants have closed. The decline in the U.S. spinning industry has indeed put an additional burden on the U.S. to export its cotton to limit stock building. Last season, U.S. exports were near 75-year highs and are projected to remain near this level in 2002/03.

With the U.S. becoming more dependent on cotton exports, global supply and demand play a larger role in the U.S. cotton market. Global supply and demand are currently driving down world prices. While cotton is an annually produced commodity subject to shocks similar to other field crops, cotton prices, at the present time, seem to be more closely associated with nonfood industrial inputs, such as copper. Global manufacturing has seen a sluggish rebound from recent world economic activity. Prices for cotton and some other nonfood inputs have languished while grain prices have recovered following this summer's drought. **AO**

Stephen MacDonald (202) 694-5305  
stephenm@ers.usda.gov  
Leslie Meyer (202) 694-5307  
lmeyer@ers.usda.gov

### U.S. Cotton Stocks to Remain Above 1990s Levels

Million 480-lb. bales



2002 forecast.

Economic Research Service, USDA