

# **Commodity Risk Management Approaches**

## **For Cotton in West Africa**

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The study relates to an examination of the ways to reduce cotton price volatility and its impact on West African cotton producers, focusing on three issues. First, an examination of the existing marketing and pricing systems, how price risks are allocated and what is done currently to deal with these risks. This examination specifically looks at the marketing and pricing systems in the eight largest cotton-producing countries of the African franc zone (Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Mali, Senegal, Togo). The second aspect of the work examines the price risk allocation impacts of the reform scenarios planned in the region and explores the risk management instruments that could potentially be used in more liberalized cotton markets. The third issue investigates the price linkages between West African cottons, the Cotlook A Index and New York futures cotton price to provide an insight into what could be the basis for price risk management instruments for West African cotton. The study has a microeconomic focus and does not undertake to answer questions about cotton price levels.

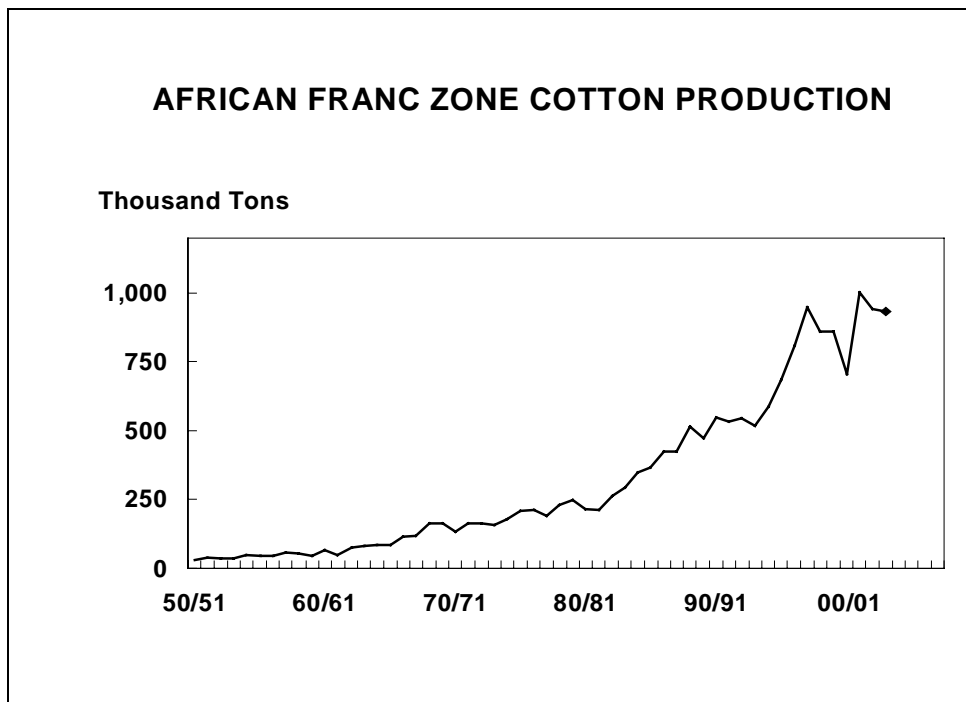
This paper has benefited from the discussions conducted from March to May 2004 with representatives of most ginning companies and international merchants involved in the production and trade of cotton in the African franc zone. The author is responsible for all errors.

## 1. Overview of the Cotton Sector in the African Franc Zone

Cotton is produced in eleven countries of the African franc zone (Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, Togo), sharing a common currency, the CFA franc, pegged to the euro by a fixed parity of 655.957 CFA to the euro.

Production in the African franc zone countries has increased dramatically over the last five decades, rising from 30,000 tons of lint in 1950/51 to 200,000 tons in 1980/81 and climbing to one million tons in 2001/02, about 5% of world production. Cotton production developed along the same lines and presents similar characteristics. Cotton is grown by small-scale farms, cultivating 1 to 3 hectares, entirely rain fed. Cotton is labor intensive, using manual or ox-drawn implements and relatively few purchased inputs per ton of production. Cotton is harvested by hand. Average yields are lower than the world average, about 400 kilograms of lint per hectare, compared to 640 kilograms of lint per hectare. However, about 55% of world cotton area is irrigated, accounting for about 75% of world output. The ginning outturn of 42% (ratio of lint to seed cotton), arguably the highest in the world, is linked to varieties not to the ginning process. All production is saw-ginned in modern high-capacity equipment (U.S. made), and pressed in standard bales of about 225 kg.

Figure 1. African Franc Zone Cotton Production (1950/51-2003/04)



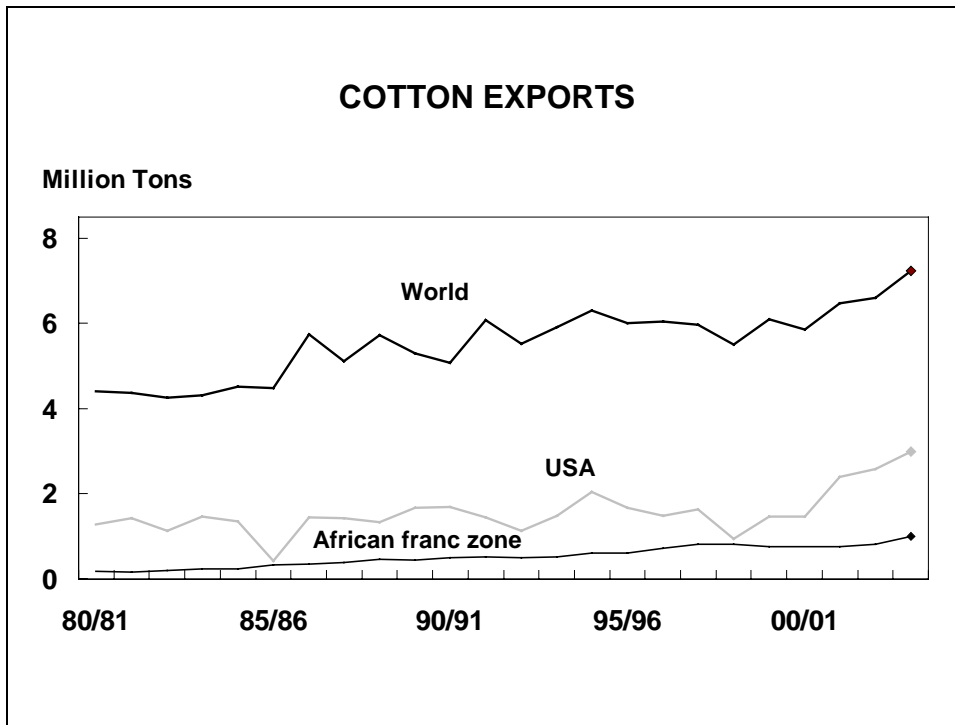
The average quality is above the type quoted in *Cotton Outlook* and taken into account for the calculation of the benchmark Cotlook A Index (grade Middling+ and Strict Middling; staple length mostly 1<sup>1</sup>/<sub>8</sub> or better; premium micronaire 3.7-4.2; strength 27-28 grams per tex). Cotton is classed manually (instrument-classing data are available in some countries on a sample basis), and sold on types, not on description. However, cotton tends to have a slightly creamy color, and is not as white as U.S. and Australian cottons. Being handpicked, cotton should fetch a premium compared to machine picked-cotton (which accounts for about 30% of world output). However, contamination of the lint by foreign matters during picking and storage of seed cotton and stickiness due to pests annihilate the comparative advantage. Bales are wrapped in polypropylene not in cotton and country damage (during inland transport and storage) are common. Although varieties and production practices are very similar in the region, cottons from different countries fetch different prices on the world market

Cotton is central to farming systems in the African franc zone producing countries. It is the only cash crop with guaranteed marketing in most cotton areas, fostering innovation, contributing to rural development and food security. In 2003/04, producer prices ranged from 160 to 200 CFA/kg seed cotton, equivalent to 32-40 cents per lb (exchange rate 1US\$ = 540 CFA).

Despite lower yields, production is cost-competitive, particularly compared to developed countries where cotton production is capital intensive. African franc zone cotton producers rely on unpaid family labor and have almost no fixed costs. Inputs costs account for most of their cash costs (about one-third of gross income) and are not paid up front (deducted from seed cotton sales). The cost of cotton delivered to importing ports ranged between 730 and 830 CFA/kg Cost and Freight in 2003/04, equivalent to 61-70 cents per pound, depending on unit costs and transportation costs. The producer price is by far the most important component, accounting for 56% of CFR costs on average. Costs from farm to gin represent 9%, ginning 12%, financial costs and overhead 10%, ex-gin to FOB 9% and FOB to CFR 4%. The African franc zone outperforms other Sub-Saharan cotton producing countries in terms of production, yields and, with the exception of Zimbabwe, quality

Taken as a group, the African franc zone emerged as the second largest exporter in the world, with a market share of about 15% in 2003/04. In the segment of medium and high-medium cottons, its market share exceeds 30%. Nevertheless, the African franc zone remains a price-taker as international prices of all cottons are largely influenced by the U.S., who is by far the largest exporter with a market share of 42% in 2003/04. African franc zone countries are extremely export-dependent because 97% of their production is exported. Domestic mill use has been declining and is unlikely to rebound any time soon. The African franc zone has a comparative advantage in cotton production, but not in textiles, and the world textile market is even more distorted than the cotton market. Three-quarters of exports from CFA countries are shipped to Asia, and China (Mainland) probably accounts for 30% of all exports in 2003/04. For major cotton producing countries, the average contribution of cotton to total export revenues is 40%. Thus, African franc zone countries are most exposed to price volatility.

Figure 2. Cotton Exports (1980/81-2003/04)



## 2. Cotton Prices Are Volatile

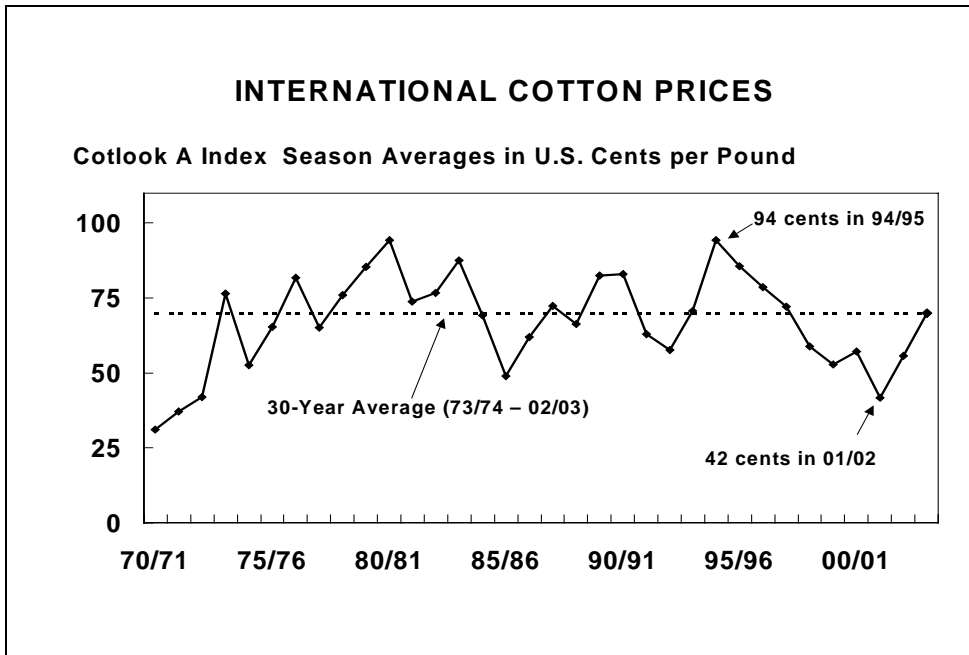
Cotton prices are very volatile, creating instability and uncertainty for export-dependent African franc zone countries. Volatility affects producers, ginners, merchants, financial institutions and governments. Because cotton is a major source of revenue and plays a leading role in the economic development of those countries, price instability undermines economic growth and incomes of the rural population.

International cotton prices have declined overtime. The Cotlook A Index, an indicator of world cotton prices, dropped from more than 50 cents per pound in 1950 to less than 30 cents by the end of the 1960s. During the 1970s, cotton prices were influenced by the same factors that affected all commodity markets and the Cotlook A Index rose to more than 70 cents per pound. During the ten years to 1985/86, international cotton prices averaged 75 cents per pound. Between 1985/86 and 1994/95, prices averaged 70 cents per pound, and in the eight years to 2002/03, prices averaged 63 cents per pound. More efficient production practices, new cotton areas and competition with chemical fibers influenced the decline in long-term average prices. During the 1990s, another factor that depressed prices was government policies in various countries. When adjusted for inflation, cotton prices have declined since the 1950s and they collapsed in 2001/02 to their lowest level, in real terms, since the invention of the cotton gin in 1793. Despite the increase in average yields, the real average revenue per hectare of cotton has also declined over the last five decades.

Cotton prices rose sharply in the early 70s and became more volatile. Deviations of annual average prices of 5% or more from the five-year average became commonplace. The volatility of cotton prices may be attributable to a number of factors, ranging from weather changes in cotton producing regions to government policies. As with any other commodity, year-to-year changes in cotton prices are driven by changes in supply and demand, expressed as a ratio between stocks and use. Notwithstanding, China (Mainland)'s net trade with the rest of the world have been the major factor explaining year-to-year fluctuations in season-average international prices over the last three decades.

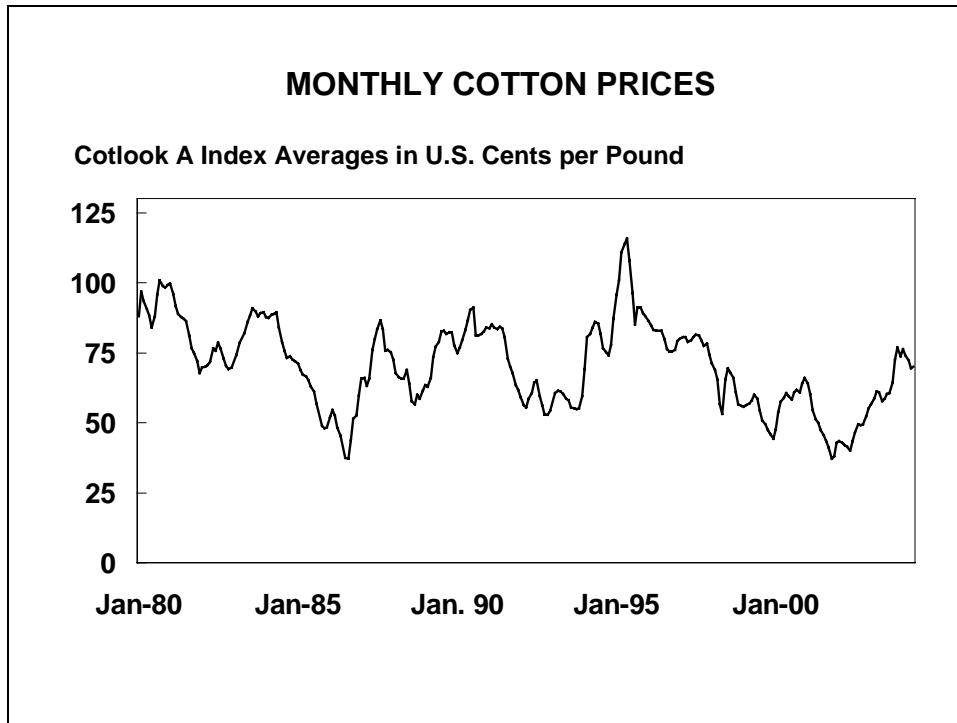
International cotton prices averaged 70 cents per pound over the last 30 seasons (August 1-July 31). Despite distortions caused by government measures, cotton supply and demand are price-responsive. Average international prices rebounded from a 19-year low of 42 cents per pound in 2001/02 to 56 cents in 2002/03 and are expected to reach 70 cents per pound in 2003/04, equal to the long-term average.

Figure 3. International Cotton Prices (Season Averages, 1970/71-2003/04)



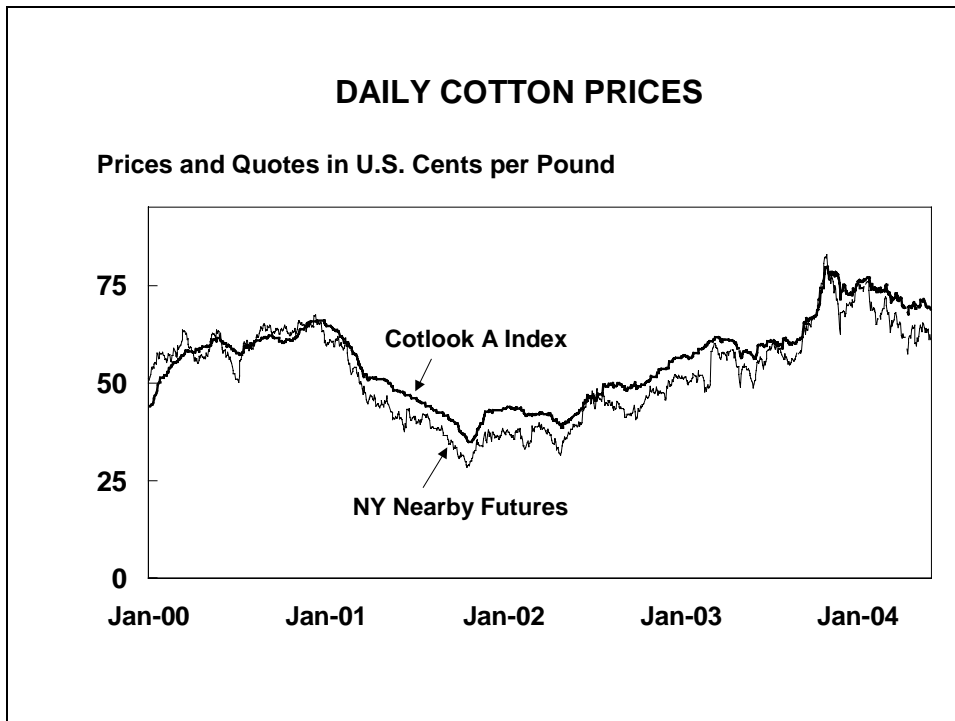
Monthly variations from the annual average exceeding 15% are not unusual. During the last 23 seasons (1980/81 to 2002/03), the highest monthly average of the Cotlook A Index occurred eight times during the first month of the season (August) and six times during the last month of the season (July); it never occurred in October or in November (2003/04 will be a first).

Figure 4. International Cotton Prices (Monthly Averages, Jan 80-May 04)



Cotton is a speculative market as speculators are the indispensable counterparts of hedgers on the futures market. About 40% of the average daily trading on the New York cotton futures exchange is accounted for by speculators. Daily fluctuations on the New York futures market can be as high as 6 cents per pound during the same session (from “limit up” to “limit down”).

Figure 5. Daily Cotton Prices and Quotes (January 2000-May 2004)



Cotton prices will remain volatile due to year-to-year variations in yields in the largest producing countries. The eventual elimination of government measures, which insulate some producers from world price fluctuations, may not reduce price volatility.

### **3. Cotton Price Fluctuations Are Unpredictable**

Cotton production is seasonal, while spinning is an all-year round activity. Most farmers must make decisions about what and how much to plant nearly a year before the resulting crop is harvested. Many textile mills need to procure cotton a full year ahead.

World prices fluctuate widely and fluctuations are difficult, if not impossible, to predict. The ICAC uses a price projection model to forecast the season-average Cotlook A Index. The track record of ICAC price forecasts is average. The most critical projection is made in March/April (16 months before the end of the forecasted season) since this is the time when producer prices are announced in most African franc zone countries. For the last ten seasons, ICAC forecasts at the end of March of the average Cotlook A Index for the coming season were overestimated six times (by between 5 and 20 cents per pound) and underestimated four times (by between 3 and 16 cents per pound). ICAC projections correctly predicted the trend (up or down from current prices) only four times out of ten.

During the last five seasons, ICAC projections in May of the average Cotlook A Index two seasons ahead, were overestimated 4 times (by between 17 and 23 cents per pound for 1999/00 to 2001/02 and by one cent for 2002/03) and underestimated once (by 17 cents for 2003/04).

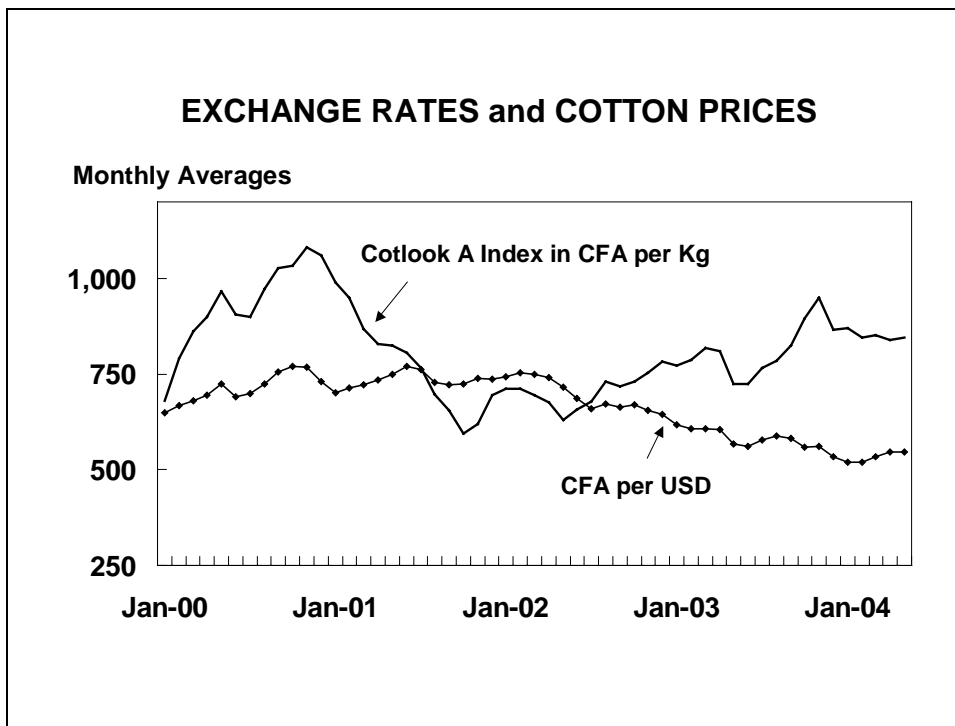
Forecasts based on New York futures market are not more reliable. For the last ten seasons, in March, the March contract one year ahead correctly predicted the trend (up or down from nearby month) only five times. Prices were overestimated six times and underestimated four times, with an average error of 10 cents per pound.

Abrupt price swings are and will remain unpredictable. The cotton supply and demand situation China (Mainland) has always been the most difficult to forecast. As China plays an increasing role in the world market (accounting for 24% of world production, 33% of world mill use and 25% of world imports in 2003/04), price forecasts are unlikely to improve.

## Currency Risk

International cotton prices are expressed in U.S. dollars but West African cotton ginners and exporters pay their production expenses in CFA francs. Exchange rates are volatile and unpredictable. However, cotton prices converted in CFA francs have been less volatile than those expressed in U.S. dollars, because commodity prices in dollars tend to be negatively correlated with the weighted exchange rate of the U.S. currency.

Figure 6. Exchange Rates and Cotton Prices (Monthly Averages, Jan 00-May 04)



Exchange movements are an additional risk that needs to be managed and add additional pressure to cotton producers and exporters. Exchange rate volatility affects revenues and costs. Devaluation of the CFA franc in January 1994, by 100% against the French franc, boosted cotton production in the following seasons. The U.S. dollar climbed to a peak against the euro in February 2002. The trend reversed since, affecting the profitability of cotton production in the African franc zone. CFR costs were equivalent to 44-50 cents per pound in early 2002 (with 1 U.S. dollar = 760 CFA), among the cheapest in the world. All things equal, the strengthening of the euro (and therefore of the CFA franc), against the U.S. dollar, increased cotton production costs expressed in dollars by 40%.

#### **4. Structure of the Cotton Sector in the African Franc Zone**

The 8 countries producing over 20,000 tons of lint each (Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Mali, Senegal, Togo), account for 99% of the total output in the African franc zone.

The cotton sector is characterized by its vertical integration (“filière intégrée”). In most countries (Burkina Faso, Cameroon, Chad, Mali and Senegal), a single company has a legal monopsony in the purchasing and ginning of all seed cotton and is responsible for the sale of cotton lint to the domestic and the export markets. Ginning was liberalized in 3 countries (Benin, Côte d'Ivoire, Togo) in the second part of the 1990s and similar moves are planned in other countries, notably in Burkina Faso and Mali. There is still widespread state regulation and intervention. The fixed producer price system has, so far, been maintained in all countries, with pan-territorial and pan-seasonal prices announced in advance of each season. Ginners are required to purchase all the seed cotton produced and producers are required to sell all of their seed cotton to the ginners. However, governments are divesting from cotton companies. The national cotton company in Senegal has been privatized and the National Union of Cotton Producers of Burkina Faso (UNCPB) owns a 30% stake in the national cotton company. State-owned cotton companies in Benin and Côte d'Ivoire will be privatized in the near future.

Cotton production is characterized by its atomization. There are an estimated 2 million cotton growers in the African franc zone. On average, a grower harvests 1 to 1.5 tons of seed cotton per season, equivalent to 2 to 3 bales after ginning. The African grower competes on the world market with U.S., Australian and Brazilian growers producing, on average, 700 bales, 2,000 and 3,000 bales, respectively (mechanically harvested).

Cotton producers' associations developed rapidly in the CFA countries during the 1990s, assuming more responsibilities in the sector, particularly in the distribution of inputs and the procurement of seed cotton to individual farmers. There are more than 1,000 producer associations in the region at different levels (village, regional, national).

Seed cotton production is sold directly by producers or by their associations to the ginning companies, without a layer of private traders or middlemen in between like in East African countries where the cotton sector has been fully liberalized.

Altogether, there were 23 ginning companies in the eight countries, and a total of 83 gins in 2003/04. The average gin processes about 30,000 tons of seed cotton per season, in 5 months, producing 12,500 tons of lint (55,000 bales), valued at some \$18 million FOB in 2003/04.

More details on the structure of the cotton sector in the various countries are presented in table 1.

Over 15 international cotton merchants (Box 1), including the world's largest cotton trading companies (according to ICAC survey of world trade) are engaged in the trade of African franc zone cotton, buying cotton from ginners, selling to foreign textile mills, and arranging shipment to destination. The five major merchants handle about 70% of the total production. A few merchants are vertically integrated in Benin, Côte d'Ivoire and Togo, ginning cotton and marketing both cotton seed and lint. Compagnie Cotonnière (COPACO), a subsidiary of Dagrís (ex-CFDT), has strong institutional links (through crossed shareholdings) with most countries. About 300 spinners use African franc zone cottons in more than 50 importing countries. Merchants also commonly trade cotton among themselves.

Local traders are involved in the marketing of cotton, contracting with the ginning companies and reselling the cotton to international merchants who actually export cotton and sell it overseas.

A dozen input suppliers (fertilizers, pesticides, and some herbicides) and more than 15 domestic and international banks provide supplies and financing to the cotton sector in the African franc zone.

**Box 1. International Companies Trading West African Cotton \***

*Major (more than 100,000 tons):*

Compagnie Cotonnière SA (COPACO), Paris, France  
Louis Dreyfus Cotton International NV (LDCI), Antwerpen, Belgium  
Paul Reinhart AG, Winterthur, Switzerland  
L'Aiglon SA, Genève, Switzerland  
Dunavant SA, Genève, Switzerland

*Large (50,000 to 100,000 tons):*

Plexus Cotton Ltd, Liverpool, UK  
Société Cotonnière de Distribution (CDI), Lausanne, Switzerland  
Mambo Commodities, Paris, France

*Other:*

Cargill Cotton, Liverpool, UK  
Weil Brothers and Stern, Merseyside, UK  
Devcot, Lille, France  
Olam International, Singapore  
Baumann Hinde & Co Ltd, Southport, UK  
Goenka-Impex SA, Genève, Switzerland  
OCTC, Switzerland  
Ecom, Pully, Switzerland  
Cogecot Cotton SA, Genève, Switzerland

*\* Ranked by estimated volume of African franc zone cotton purchased in 2003/04.*

**Table 1. Structure of the Cotton Sector in the African Franc Zone Countries**

Country	Production of Lint (Tons, 03/04 est.)	Ginning Companies Gins	Shareholders
Mali	260,000 tons (record) No. 1 in Africa	CMDT (Compagnie Malienne pour le Développement des Textiles) 17 gins	Government 60% Dagris 40%
Burkina Faso	260,000 tons (record) No. 2 in Africa	SOFITEX (Société Burkinabè des Textiles) - 9 gins	Government 35% Dagris 34% Producers 30% Banks
Benin	135,000 tons (172,000 in 01/02)	SONAPRA - 10 gins ICA group - 3 gins (SOCOBE/CGB/ICB) IBECO - 1 gin LCB - 1 gin MCI - 1 gin SIECB - 1 gin SODICOT - 1 gin	Government Private  Private Private Private Private Private
Cameroon	100,000 tons (103,000 in 01/02)	SODECOTON (Société de Développement du Coton du Cameroun) - 7 gins	Government 59% Dagris 30% Private
Côte d'Ivoire	85,000 tons (177,000 in 99/00)	CIDT-"Nouvelle" - 4 gins Ivoire-Coton - 3 gins LCCI - 3 gins URECOS-CI - 1 gin X - 1 gin (Bouaké)	Government Private Private Producers Private
Togo	65,000 tons (78,000 in 98/99)	SOTOCO - 3 gins (Société Togolaise du Coton) SICOT - 1 gin SOPIC - 1 gin SOCOSA - 1 gin	Government  Private Private Private
Chad	48,000 tons (103,000 in 97/98)	COTONTCHAD (Société Cotonnière du Tchad) 9 gins	Government Dagris 19% Private
Senegal	22,000 tons (record)	SODEFITEX (Société de Développement des Fibres Textiles) - 5 gins	Dagris 51%, Government, Private

**Other cotton producing countries in West and Central Africa**

*African franc zone:*

*Central African Republic (1 ginner - 6 gins); Guinea Bissau (1 gin); Niger (1 gin)*

*Non-CFA countries:*

*Congo Rep. Dem.; Ghana (3 ginner - 5 gins); Guinea (1 ginner - 2 gins); Nigeria (52 gins in 1999)*

## 5. Existing Marketing and Pricing Systems

As detailed in box 2, the cotton marketing calendar (and, therefore, the financial cycle) of one specific season ( $t/t+1$ ) extends over 30 months, from the middle of the year ( $t-1$ ), when ginning companies order inputs, to the end of year ( $t+1$ ), when export sales are completed. In the countries where a bonus is distributed to producers based on the profit of the previous season, the calendar may extend 5 more months.

### **Box 2. Cotton Marketing Calendar (2003/04 season)**

*Mid-2002:*

Ginning companies order and purchase inputs (fertilizers, insecticides, some herbicides) for 2003 (credit from inputs suppliers)

*November 2002-May 03:*

Inputs distributed to farmers (during ginning of 2002/03 crop, including seeds, one-year credit, no payment up front)

*1st quarter 2003:*

Forward sales start for shipments Jan-Dec 04

*March/May 2003:*

Producer price and input prices announced before plantings  
(Except in Côte d'Ivoire where producer price is announced before ginning, leading to frequent conflicts between ginners and producers)

*June-early July 2003:*

Plantings

*Mid-2003:*

Crop financing negotiated with banks (local and international), using forward sales contracts as collateral

*November 2003-April 2004:*

Seed cotton purchases from farmers, recovery of input credit, ginning,

*December 2003-December 2004:*

Export shipments

*November 2004-May 2005:*

When applicable, payment of "ristourne" to producers (add-on to procurement price for 2004/05 based on cotton company profit in 2003/04, if any)

## 5.1. How West African Cotton Is Marketed

Most contracts between ginners and international merchants are private contracts concluded during visits or on the phone. Personal relationships are very important in the cotton business and in Africa. It is customary for cotton traders to enter into agreement on the sale of cotton using verbal agreements that have the same binding force as written contracts signed by parties based on international law. A verbal agreement for the sale of cotton is usually confirmed by signing a formal contract, by fax or electronic mail. Some ginning companies (in Cameroon, Côte d'Ivoire and Mali) invite selected authorized buyers to tender by fax or e-mail. The national cotton company of Chad sells directly to spinners through commissioned local agents and to merchants to specified destinations. There are preferential arrangements, giving first refusal to closely connected merchants but no exclusivity. COPACO takes advantage of its institutional links with most cotton companies. Crop financing provided by merchants is guaranteed by sales contracts.

Written contracts incorporate all the major terms of sales. Quantity is specified in metric tons; usually 500 to 10,000 tons per contract in 1 to 3 monthly shipments, and smaller quantities for prompt shipment at the end of season. Quality is stipulated "on type", meaning that cotton is sold on basis of exporter's private type or sample for grade and color. Staple length, micronaire, and strength (if applicable) are separately guaranteed. Payment is by letter of credit at sight or cash against usual shipping documents. Le Havre rules and arbitration (Association Française Cotonnière) rules and arbitration apply to most contracts between ginners and merchants (Box 3). Most contracts are concluded FOB (free on board). In other words, the seller (ginning company) pays the cost of transportation of cotton from the gin to the shipping port and of loading the cotton on board the ocean vessel. The most common method used in the CFA countries by the cotton ginner is to sell lint is through a forward contract with an international merchant. These sales can be in advance of planting the crop, during the season or after ginning. About 50% of expected production is generally sold forward before ginning, more when merchants are bullish. Most cotton is sold prior to being actually ginned, except the remaining balance at the end of the season. Sale and pricing are generally simultaneous, at a fixed price, in euro per kilogram. Some basis pricing is done on call the Cotlook A Index, the African Franc zone quote in *Cotton Outlook* or on call New York futures. Minimum guaranteed price is not very frequent.

### **Box 3. Association Française Cotonnière**

Association Française Cotonnière (AFCOT) is more than 100 years old and has about eighty members, including firms based in France and other countries. Membership includes cotton merchants, agents, shippers, controllers, transport organizations, ports, banks and spinners. AFCOT is ruled by a board of directors composed of members, usually merchants and controllers. AFCOT has several committees, including the Advisory Committee for Arbitration and Supervision of the Types, and the Committee on Value Differences. AFCOT publishes Le Havre General Rules, which regulate contracts for the sale of cotton and arbitration. According to a 2003 estimate, up to 100,000 tons of cotton are sold annually in Europe under AFCOT Rules.

The terms and conditions of contracts between international merchants and spinning mills differ from those of the contracts between merchants and ginners. Sales are commonly private contracts concluded through local commission agents in importing countries. Quantity is usually 100 to 2,000 tons per contract (net certified shipping weights or net landed weights), in 1 to 6 monthly shipments. Cotton is usually sold “on type” (original types or merchant’s private types) but also “on description” (using the “universal standards for U.S. upland cotton”). Quality and staple length bought are often “upgraded” in sales contracts. Contracts giving sellers the option to deliver types “equivalent to a specified type” among several origins are common.

Cotton is generally sold forward at fixed prices in U.S. cents per pound CFR port of import. Spinners usually start covering their needs around March, and buying pressure is stronger when prices are rising. Some mills buy on call New York futures, sales on call Cotlook A Index are exceptional. LCA rules and arbitration (Box 4) apply to most contracts between merchants and spinners, except for sales to China (Mainland), where Chinese terms apply. Payment is generally by irrevocable L/C at sight (up to 150 days in certain markets); payment cash against documents or upon arrival is less common.

#### **Box 4. The Liverpool Cotton Association**

The Liverpool Cotton Association dates back to 1882. The membership of the LCA includes buyers and sellers of cotton, international merchants, government marketing organizations, spinners, banks, cotton controllers and others involved in the cotton business. One of the major functions of the LCA, as well as other national cotton associations, is to reduce risks involved in international cotton trade and to provide an effective mechanism for settlement of disputes arising between parties involved in trade and to uphold equitable trading practices and the sanctity of contracts worldwide. Membership in the LCA is in excess of 300 registered firms in over 60 countries worldwide. It is estimated that over 60% of the world’s cotton trade is bought and sold under the Liverpool Cotton Association Bylaws and Rules. Contracts made subject to Liverpool Rules are dependent upon Liverpool Arbitration in the event of a dispute between parties. If a firm refuses to abide by arbitration or appeals a decision, the firm is included on a default list, and may be suspended from registration with the LCA.

Table 2. Terms and Conditions of Contracts

	<b>Between Ginners &amp; Merchants</b>	<b>Between Merchants &amp; Spinners</b>
Negotiation	Mostly private contracts Invitations to tender	Private contracts
Quantity	500 to 10,000 tons per contract, in 1 to 3 monthly shipments Less for prompt shipment at the end of season	100 to 2,000 tons per contract, in 1 to 6 monthly shipments More to China (Mainland)
Quality	Grade on national or ginners' type Staple, micronaire, Strength  Some control at origin (Take up)	Grade on merchants' types or on description Staple, micronaire, Strength
Pricing	Euros per Kg Mostly fixed price forward sales <5% On call Cotlook A Index, WA quote, or NY futures <5% Minimum guaranteed price  No carrying charges	U.S. cents per pound Mostly fixed price forward sales <10% On call NY futures  Carrying charges may apply
Delivery Terms	FOB export port Shipping month specified	Mostly CFR port of destination some CIF and delivered mill specified shipping month
Weight	Shipping weight	Net certified shipping weight or net landed weight
Payment	L/C at sight or CAD (against shipping docs)	Mostly L/C COA, CAD
Rules & Arbitration	Mostly Le Havre (AFCOT) LCA	Mostly Liverpool (LCA) CIQ SA (State Administration of China Entry-Exit Inspection and Quarantine of the People's Republic of China)

## 5.2. Pricing Mechanisms

### Seed Cotton Pricing

The mechanism for establishing seed cotton price paid to growers is essentially a two-stage process. In the first stage, the official minimum procurement price for seed cotton is announced before planting, generally in March or April, taking into account the estimated cost of production (including an opportunity cost of family labor) and anticipated world prices less ginning and transportation costs, or according to a multi-year agreement between the ginning companies and the producers. Pan-seasonal and pan-territorial pricing is the rule. Discounts apply to lower qualities (1 or 2 only). The price of inputs to be deducted from the sales of seed cotton is announced at the same time. In some countries, notably in Burkina Faso and Cameroon, the floor price is eventually supplemented by a bonus (“ristourne”), corresponding to a partial distribution of profits of the ginning company during the previous season. In Côte d’Ivoire, the producer price is not announced prior to planting but prior to ginning, which led in the past to frequent disputes between producers and ginners, the former refusing to deliver seed cotton.

### Lint Cotton Pricing

Ginners usually base their prices on the Cotlook A Indexes (Annex I), valued at the prevalent exchange rate for the shipping period considered. Ginners are always reluctant to start selling new crop below their provisional cost of production. New York cotton futures are not a reasonable base for pricing African franc zone cotton. Export prices follow the Cotlook A Index since the African franc zone quote in Cotton Outlook is most of the time among the cheapest five quotations taken into account in the calculation. However, the Cotlook A Index is not a traded market (except in OTC swaps) and is only indicative of average quotes (as declared by merchants) and not of actual transaction prices. The so-called African ‘Franc zone’ style quoted in Cotton Outlook is not representative of actual quality premium or discounts for specific origins. In declining order, spinners’ would rate the various origins as follows: Côte d’Ivoire, Burkina Faso, Togo, Senegal, Chad, Mali, Benin and Cameroon.

Some merchants provide sellers with call contracts which allow the ginner to sell its cotton today and fix the price, based on the *Cotton Outlook* Indexes or, less frequently, on New York futures, and a quoted currency exchange rate, at some later date.

Some merchants offer guaranteed minimum price contracts, which allow the ginner to participate in market increases over a stipulated base price, should that occur. The guaranteed minimum price is lower than the market price on the same day. Most fixed price contracts, sellers call contracts and guaranteed minimum price contracts are priced for a specific grade to be delivered.

## **6. Allocations of Risk**

### **Producers**

With the present system, producers have no financial risk because inputs are distributed on one-year credit. Price risk is negligible, thanks to the fixed price, the same all season for the whole country. Pan-seasonal pricing protects farmers from the usual seasonal drop after harvesting when farmers are eager to sell as fast as possible because they need cash. Pan-territorial pricing protects isolated farmers located far from a gin and from the export port. Counterpart risk is non-existent, because marketing is guaranteed. Quality risk is low, since the grading system is not very rigorous, most seed cotton is bought as 1<sup>st</sup> quality, and there is no price incentive to reduce contamination. Production risk is significant in the absence of crop insurance, as the crop depends on the rainy season and is contingent on pest control. The biggest risk for producers is the risk of late payment for their crop, (and even of non-payment as in recent seasons in Côte d'Ivoire), which is correlated with the storage risk.

### **Ginners**

Most risks for ginners lie on the buying side of seed cotton for producers. The financial risk is high since inputs and crop financing extend over two and a half years. The cotton company is de facto credit guarantor during the period starting with the opening of the letter of credit for importing inputs to the end of payments by cotton importers. The input recovery risk is very low, thanks to the linkage between input supply and seed cotton marketing and to the producers' joint liability. Recovery rates exceed 95% but tend to decline in the countries where ginning has been liberalized, because some farmers sell their seed cotton to another ginner than the one who supplied them inputs. Seed cotton delivery risk is moderate and increases with competition between ginners. The price risk is high, as the producer price is fixed in advance of lint sales.

On the selling side of lint to merchants, ginners offset the exchange risk by pricing their cotton in euros. The counterpart risk is low and the contract performance risk is moderate because buyers are selected established players. However, defaults of buyers and, more frequently, delayed shipments, increase when prices drop between the contract date and the shipment. Nevertheless, ginners seldom apply carrying charges to late shipments, as they could. Quality risk is significant, since seed cotton grading is not very rigorous and contamination is not factored into procurement prices, leading to claims from buyers. As a result, the price fixed in the contract is not necessarily the price the seller will finally receive. The storage risk is not transferred to merchants, because they ship cotton only after having found a buyer. The financial risk of sales is low because contracts are covered by letters of credit.

## **Merchants**

On the buying side from ginners, the financial risk for merchants is low, except in the case of pre-financing or pre-payment. In contrast, the price risk is high, because the purchase price is generally fixed before cotton is delivered. The exchange risk is high because cotton is purchased in euros and sold in dollars. Delivery risk is moderate, as ginners are reliable established players, with a few exceptions among the private newcomers. Volume risk increases with competition among ginners, particularly when there is a ginning overcapacity (Benin). Quality risk is significant as contracted quantities and qualities may not be available for shipment.

On the selling side to spinners, the price risk is moderate, because merchants' long positions can be hedged, using the futures market or cash arbitrage. Counterpart and contract performance risks are moderate because cotton trade is based on relationships, and the sanctity of contracts is well protected by the default lists. However, defaults of buyers and, more often, delayed shipments increase when prices drop between contract and shipment; high-price contracts are always at risk. Quality risk is significant, particularly due to contamination. Financial risk is very low (payment through irrevocable L/Cs).

The financial risk for input suppliers and banks is high. Governments are also exposed to price risk with the fixed price system, due to the economic and social importance of cotton in the African franc zone countries. The governments of Benin, Côte d'Ivoire and Mali had to provide emergency support to protect producer prices when world prices collapsed in 2001/02.

**Table 3. Allocation of Risks**

Risk	Producers	Ginners		Merchants	
		Buying	Selling	Buying	Selling
Volume	Significant (weather,pests)	Moderate, Increasing with competition	Moderate	Moderate	Low
Quality	Very low	Significant	Significant	Significant	Significant
Price	Non-existent	High	High	High	Moderate
Currency	Non-existent	Non-existent	Non-existent (sell in euros)	High (buy in euros)	None (sell in \$)
Financial	None (inputs on credit)	High (crop financing)	Low, (CAD, L/C)	Low, unless pre-financing	Low (L/C)
Counterpart	Low (late payments)	Low, Increasing with competition	Moderate	Moderate	Moderate
Storage	Significant (late payments)	Significant	Significant	Non-existent	Non-existent

## **7. Price Risk Management**

### **Producers**

The fixed price system offers the best protection to cotton producers in the African franc zone. Having no know-how of price risk management, African producers try to use their political influence to obtain higher producer prices. Sector-based producer price support mechanisms worked effectively in Burkina Faso, Cameroon and Senegal.

### **Ginners**

Volume of production is not a problem for ginning companies in the African franc zone, which enables them to sell forward. Forward sales fixed price contracts have been used extensively for decades, primarily as a way to secure input and crop financing. Sales are contracted in euros, offsetting the exchange risk. About 50% of each anticipated crop is generally sold before ginning starts. However, volume depends on market expectations of merchants (probably 40% of 2003/04 crop was already sold in April 2003 as trade was bullish, only 10% of prospective 2004/05 crop was committed in April 2004). Higher percentages of forward sales increase the risk of not being able to deliver the contracted quality and may lead to oversold situations.

Guaranteed minimum price contracts accounted for less than 5% of the volume in 2003/04. "On-call" sales (price to be fixed basis Cotlook A Index and/or African franc zone quote) also account for less than 5%.

Ginners use "caution collective" (joint liability) from producers to guarantee input credit recovery and select buyers to guarantee contract performance.

When they are unable to ship the contracted volume, ginners are generally able to renegotiate contracts (rolled to next crop, at a discount or not) in order to avoid invoicing back. When unable to ship the contracted quality, ginners usually apply higher quality at the same price or apply lower quality at a discount with buyer's approval. In cases of deviation of quality from contract stipulations, official discounts are applied. However, shipping a quality above the contract does not allow the seller to request a premium from the buyer.

By and large, cotton companies are generally at a disadvantage to negotiate with international traders. Knowledge of market and price discovery are insufficient. Know-how of price risk management tools is very limited or non-existent. There is a strong reluctance, even fear, towards the futures market, put in the same category as the casino.

## Merchants

Merchants usually hold long positions of West African cotton. However, the New York futures (Annex II) market is used with moderation by merchants, due to the basis risk and to avoid margin calls in a very volatile market. About one-third of the African franc zone cotton bought is hedged. Physical hedges (cash market arbitrage) are predominant, using different origins, different crops, and back-to-back purchases/sales.

With one exception, merchants make little use of options, due to the cost of premiums and to the low open interest (in early April 2004, there were only 9,300 Dec 94 put options and only 40 March 95 put options).

In contrast, merchants systematically and immediately hedge their currency risk by buying or selling forward transacting dollars for euros. Eurodollars options, considered too costly, are not used. Risk of non- or late delivery remains and margin calls are not hedged.

Guaranteed minimum price and on-call purchase contracts account for less than 10% of the total volume.

To guarantee contract performance, merchants select sellers and buyers. National cotton companies are considered reliable, defaulting in good faith, while private ginners are ranked from "crooks" to "first class professional". Delivery risk is handled by renegotiating terms, invoicing back or rolling contracts to next crop at a discount. Quality risk is handled through applications and claims, often taking advantage of the poor know-how of ginning companies regarding contractual disputes. In some cases, merchants use their personal relationships or their political connections to renegotiate contract terms when the market turns against them.

Merchant-to-merchant business (B2B) is increasing as a way to hedge positions. First-hand sales from merchants to spinners are estimated at 75% of purchases from ginners. 80,000 tons of West African cotton have been electronically traded on the "international marketplace" of The Seam so far in 2003/04.

The use of over-the-counter (OTC) instruments by merchants is also increasing. Index swaps offered by The Seam (on line), Cargill Investor Services (CSI) and Rabobank are cash-settled, bilateral agreements between two parties. There is no basis risk for quality descriptions different from the New York futures contract. Nevertheless, cotton swap transactions involve a counterpart credit risk.

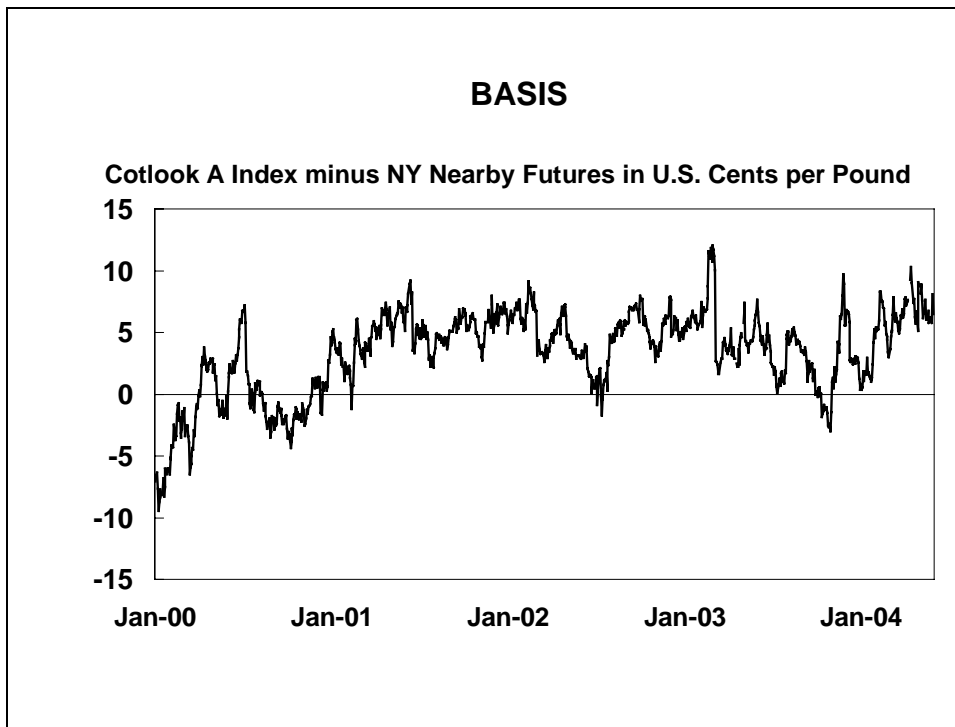
Know-how of price risk management instruments is unequal among merchants. One of the largest international merchants systematically hedges its positions on New York and extensively uses options and other hedging strategies.

## 8. Basis Risk is a Major Inhibitor

NYBOT cotton futures can be an effective tool to manage international cotton price risk, however the most significant inhibitor is the basis risk.

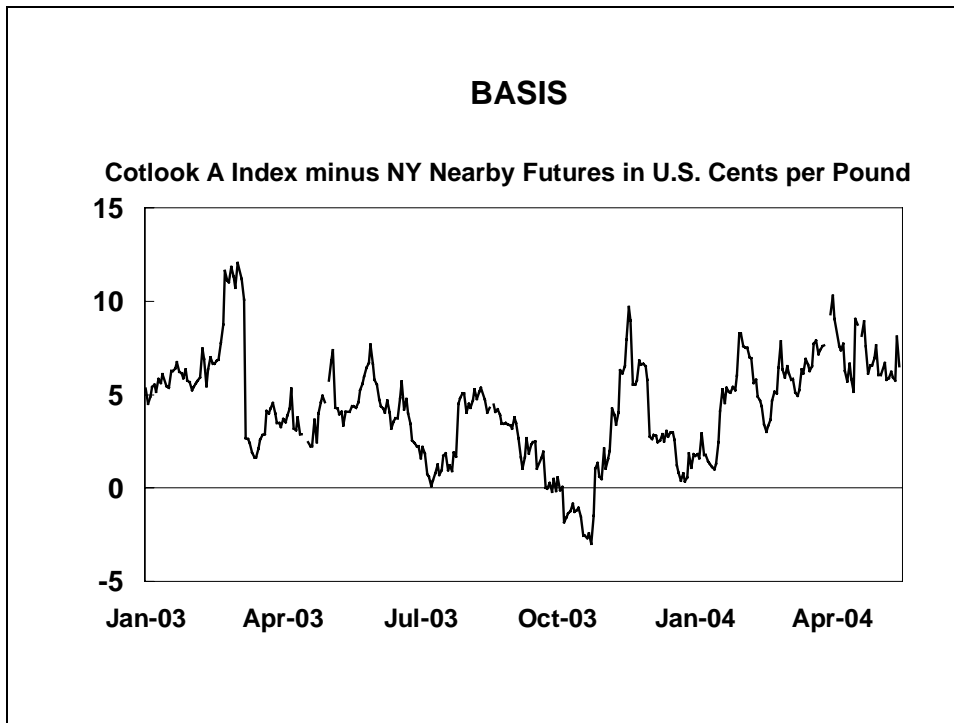
NYBOT cotton futures allow for delivery of U.S. cotton only, the base quality is inferior to African franc zone cotton and NYBOT reflects U.S. supply & demand. As a result, the basis between the Cotlook A Index and the New York nearby futures contract fluctuates widely. The basis averaged 3.25 cents per pound "on" NY since January 2000, and fluctuated between 9.5 "off" and 12 cents "on". The basis skyrocketed from 3 cents "OFF" NY at the end of October 2003 and to 10 cents "ON" one month later.

Figure 7. Daily Basis (January 2000-May 2004)



Fluctuations in the basis cannot be hedged, reducing the benefit from hedging non-U.S. cottons on the NYBOT futures contract. The average basis variation is about half the cash price variation. In 2000/01, total variation in the basis (13.5 cents) represented 45% of the variation in NY futures prices during the season. In 2001/02, the percentage was 25% (10 cents/40), 60% in 2002/03 (12/20) and 45% during the first half of 2003/04 (13/29).

Figure 8. Daily Basis (January 2003-May 2004)



Merchants generally hold long cash or physical positions, and decisions/timing to hedge or not to hedge African franc zone cotton are based on historical basis. They sell futures when the basis is below average ("off" NY). A decreasing basis favors merchants; a widening basis does the opposite. Merchants prefer to avoid the nearby month at least 30 days ahead of the first notice day, because the market has a tendency to become more volatile during that period.

Fluctuations in the basis may decrease in the future. As two-thirds of U.S. cotton are now exported, the U.S. supply and use situation is better correlated to world supply and demand. When Australian cotton first began to be sold on-call, wild basis fluctuations occurred from 1000 "off" to 600 "on". However, NYBOT futures have been successfully used for price management in Australia since 1985. Yet, Australian cotton (machine-picked) is more comparable to U.S. cotton than African franc zone cotton.

### **Input suppliers**

Input suppliers charge higher prices and higher interest rates, including a risk premium to cover their financial risks.

### **Banks**

Banks use forward sales contracts as collateral to their financing of ginning companies. A fixed price contract backed by a letter of credit is the preferred hedge for banks. Banks are not participating in commodity risk management, only in trade financing.

## 9. Conclusions

### 9.1. Lessons Learned

The systems of minimum guarantee prices appear to generally satisfy producers in the African franc zone countries. They were largely insulated from the drop in world prices in 2001/02 (Table 3). Producer prices would have been lower in recent years if they had been directly linked to world prices without the protection of fixed prices. Actually, producer prices rose in Burkina Faso and Mali in 2001/02 when international prices collapsed. Pan-seasonal pricing of cotton protects producers against the seasonal drop in domestic prices at harvest time when the bulk of cotton comes to the market. Pan-territorial pricing allow them to maintain production in remote areas and might be considered to serve a social function particularly if these remote farmers are also amongst the poorest with few other alternatives<sup>1</sup>. However, the practice is less efficient in terms of resource since it gives ginners no incentive to locate with a view of minimizing costs.

International cotton prices dropped 56% from a peak of 94 cents per pound in 1994/95 (the first season after the devaluation of the CFA franc) to a 30-season low of 42 cents in 2001/02. The average producer price rose 37% during the same period. As a result, the producer share in world prices rose from 31% to 68%. However, the producer share in world price is not a very good indicator of the efficiency of the cotton sector because, all things equal, it rises automatically when world prices decline. In addition, the season-average price is not representative of the marketing policy because an important portion of the crop is actually sold forward during the first part of the year, based on the forward Cotlook A Index prevailing during the previous season.

Cotton producers have been beneficiaries of price risk management used by ginning companies and by merchants. However, late payments to producers are recurrent problems and farmers have little incentive to inform themselves about world market prices and to improve the quality of their production.

Some parastatal companies are relatively efficient and have been able to offer stable prices to producers. Reform is proceeding gradually in most countries, and seed cotton prices track world prices more closely than in the past.

An efficient credit system allowing small farmers to acquire quality inputs in a timely manner is certainly the major factor behind the dramatic increase in production in the African franc zone and the link between input credit and seed cotton marketing is crucial.

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<sup>1</sup> One needs to see what is the most efficient way to provide a safety net for these farmers and a choice may be between pan-territorial price support and direct income support. This could be a subject for further investigation.

Producer's cooperatives are gaining credibility and increasing negotiating power in the African franc zone. Producer price support mechanisms have been reasonably well managed in Burkina Faso, Cameroon and Senegal, putting aside reserves in times of high prices to provide a cushion against year-to-year price fluctuations, and the funds were not completely depleted after the drop in world prices. This protection adopts conservative estimates for the guaranteed price and provides a "ristourne" in the following season if prices turn favorable. However, the system is unfair to producers having lower production or no production during the following season and may send the wrong signal to producers, canceling out market signals. Furthermore, the system may impose other economic costs that should be analyzed and considered beyond the financial viability of the stabilization fund over a given period of time<sup>2</sup>.

Through the fixed price system, price risks are transferred from producers to the ginners who mitigate that risk by selling forward at fixed price. Forward contracting represents more than 50% of export sales from the African franc zone.

Overall, marketing cotton from the African franc zone has no particular problem. Ginning companies are established and considered reliable by merchants. Merchants consider it much easier to purchase cotton in CFA countries than in East Africa because offers are not atomized between numerous trading companies and the volume is sufficient to ensure all-year round shipments, while quality standards are relatively consistent. The volume produced by ginners is sufficient to qualify them for forward sales.

Ginners and banks, which operate in a more stable financial environment in the African franc zone than elsewhere in Africa, support the financial risk.

The price risk is, in turn, transferred to merchants and, in some cases, to governments. International merchants do not face significant access problems to risk management instruments, which are readily available to those with the required skills and capital. However, the high basis risk can make it impractical to use a futures cotton or options contract for hedging purposes. OTC instruments could overcome some of the problems related to basis risk.

Producers and ginners are not on equal terms with International merchants who have much more technical expertise and market knowledge. Producers and ginners in the African franc zone have insufficient access to market information, little understanding of the market and of price risk exposure and lack negotiating power. Language is a considerable obstacle, because "cotton speaks English" and African ginners see the market through the eyes of the merchants, who obviously consider their interests first in providing market information.

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<sup>2</sup> A specific cost-benefit analysis of the price stabilization systems for cotton may be warranted but this is not the subject of the present paper. The success (or failure) of price stabilization should not be judged solely on whether the funds for stabilization run out or not but also consider economic costs and benefits, including rent seeking.

There is a strong psychological reluctance among ginners and producers in the African franc zone against market-based price risk management instruments. Access to those markets is impeded by the strict criteria requested by banks, brokers, and futures market to open offshore accounts. Due to the specificity of the cotton sector, approaches being experimented within East Africa are largely irrelevant for the African franc zone. The liquidity of the futures and OTC markets may not be sufficient to absorb the relative large volume of the ginning companies in a short period of time without disturbing the market.

**Table 3. Producer Prices \***

Season	Benin	Burkina	Cameroon	Chad	C.d'Ivoire	Mali	Senegal	Togo	Average
80/81	60	55	80	60	80	55	60	60	64
81/82	80	62	90	60	80	65	68	65	71
82/83	85	62	105	70	80	65	70	65	75
83/84	100	70	117	80	100	75	70	75	86
84/85	100	90	130	100	115	75	70	90	96
85/86	110	100	140	100	115	85	100	105	107
86/87	110	100	150	100	115	85	100	105	108
87/88	100	95	140	100	115	85	100	105	105
88/89	105	95	140	100	115	85	99	95	104
89/90	95	95	95	90	115	85	100	95	96
90/91	95	95	95	90	100	93	100	100	96
91/92	95	95	95	90	90	95	100	100	95
92/93	95	85	85	80	90	85	100	90	89
93/94	100	115	130	90	110	97.5	110	110	108
94/95	140	115	135	120	160	130	166	145	139
95/96	165	165	160	140	170	155	170	170	162
96/97	200	180	160	170	180	155	170	180	174
97/98	200	180	175	195	205	170	185	210	190
98/99	225	185	175	195	200	185	185	200	194
99/00	185	185	180	180	183	160	185	190	181
00/01	200	170	185	165	210	170	185	200	186
01/02	200	200	180	165	190	200	185	200	190
02/03	185	175	175	160	180	200	185	175	179
03/04	190	185	185	160	200	200	185	175	184

\* Prices paid to individual producers in CFA per kg of seed cotton, first quality, including eventual bonus from the previous season, and government subsidies, if any.

## 9.2. Some Ideas to Guide

The liberalization/privatization underway in most CFA countries is likely to increase the price risk exposure of producers. As long as the world cotton market remains distorted, it would be detrimental to West African producers to establish a direct link between world prices and producer prices without offering them any protection.

Competition may not necessarily guarantee higher producer prices as increased competition between ginners/exporters may put pressure on the selling price of lint, as spinners always take advantage of competing offers from several sellers to buy at the cheapest.

Reform must proceed with caution, maintaining and strengthening what works. In particular, the critical link between input supply and seed cotton marketing must be preserved. Price discrimination between producers could aggravate poverty of the poorest, most isolated and less educated ones. Producers, ginners and merchants appear to be overall satisfied with the seed cotton pricing system. The 2-stage mechanism could be improved by paying the bonus during the same season, to avoid sending the wrong signal to producers.

Producers should be progressively more involved in pricing and marketing decisions. Contractual trade relationships between ginners and producer associations should be encouraged. Considerable institutional strengthening and training is required first to reinforce producers' organizations at the cooperative level. In the future, risk management activity could become a normal responsibility for producer associations.

Market-based price risk instruments cannot stabilize or raise prices and cannot offer above-market prices. Price risk management begins with trying to obtain the best possible price at a given time. Ginners need be educated to better understand cotton market and prices, master cotton trade rule and regulations, reinforce their negotiating power and demystify price risk management. Access to information on markets and prices should be facilitated. To improve price discovery, ginners should develop the use of tenders. E-trade could greatly improve the marketing of West African cotton. In addition to its domestic internet-based cotton trading platform, The Seam is developing an "international marketplace" for electronic trading of U.S. and foreign growths, including West African. That could be a very effective means of transparent price discovery brought about by real time multilateral bids and offers, with online contracting. Ginners could also use cotton swaps provided by The Seam to hedge their long positions. However, participating merchants are very reluctant to let in exporters/producers. An alternative could be the development of an electronic trading platform, possibly with the African Cotton Association (Box 5). E-trade also reduces transaction costs.

ACA could develop a marketing pool for its members, including guaranteed minimum price contracts and forward contracts priced on a base type (with premiums/discounts for deviations from the base stipulated in advance, to avoid risk of being unable to deliver specific quality), as well as direct sales to spinners through commissioned agents, to avoid the cost of intermediation by merchants.

Quality improvement and contamination reduction are certainly the most promising avenues for increasing the price of cotton from the African franc zone. Prices are discounted by about 5 cents per pound compared to cotton produced in Zimbabwe (which has similar characteristics and is also hand-picked) because of contamination by foreign matter (mostly plastic strings) in the lint. At the current exchange rate, the discount is equivalent to 25 CFA/kg of seed cotton. Eliminating contamination is possible provided that the right signals are sent to farmers through a more rigorous pricing system, discounting contaminated seed cotton, or giving a premium to uncontaminated cotton. No other component of the cost of production could possibly have a higher impact on producer prices.

#### **Box 5. The African Cotton Association**

The African Cotton Association (ACA) was founded in 2002 and is composed of 27 private and public organizations from 11 countries in Western and Central Africa and is headquartered in Benin with a representative office in Paris. The Association was founded out of concern shared by many of the producing countries about government policies in some of the major producing countries subsidizing cotton production and leading to market distortions. The Association plans to work with other international associations on upholding fair cotton trading rules and the sanctity of contracts. Informational and educational work will play an important part in the association's activity.

## ANNEX I

### The Cotlook Indexes

In the early part of the 20<sup>th</sup> century, with Lancashire as the cotton-manufacturing center of the world, more than 1.1 million tons of cotton was imported through the port of Liverpool. Imports declined and the UK lost its preeminence to Japan in the 1930s but it retained its position as the second largest importing market for cotton until the mid-1950s. UK Imports dropped precipitously afterward and Liverpool is no longer a cotton port today.

Invented by John Garner, the Liverpool CIF Index went public in 1968 in The Cotton and General Economic Review published weekly by Liverpool Cotton Services Ltd. The Index was the average of six of twelve representative weekly quotations for the main types of American Strict Middling 1-1/16" cotton then being traded in Liverpool. The original selection included Memphis, Mexican, Iranian, Greek, Guatemalan, Russian (Pervyi), California/Arizona, Syrian, Turkish, Nicaraguan, El Salvador, and Tanzanian. The selection was reduced to 10 growths in July 1973, dropping two of the Central American quotes. The Index has been calculated from the five cheapest quotations ever since. The number of growths taken into account rose progressively to reach 16 styles in 2001 and has been reduced to 15 as from August 1, 2003.

In October 1972, the weekly publication changed its name to "Cotton Outlook". The Liverpool Index became the Outlook A Index, calculated daily, and a second index, the Outlook B Index, or "coarse count" index was introduced in January 1973. One year later, with the importance of Liverpool as a cotton port vanishing, the basis for price quotations was changed from CIF Liverpool to CIF North European ports. With effect from August 1, 1981, the basis of the Cotton Outlook A Index was changed to Middling 1-3/32" to better reflect the bulk of the cotton traded internationally. The name "Cotlook Index" appeared in October 1987. The "Dual System" was introduced on Aug 1, 1988 to give a better idea of offering prices for shipments nearby and forward. "The Cotlook A Index" is a UK registered trademark of Cotlook limited since October 1992.

In the absence of an international futures market, the Cotlook A Index became regarded as the only reliable guide to world price movements. However, the quotations gathered by Cotton Outlook from sellers and buyers are not firm offering prices and do not represent a level at which mills are prepared to actually buy or merchants actually sell. The offering prices are in general slightly above the latest buying level. As the average of the cheapest five origins, the Index is supposed to be close to the actual contracting level. The A Index is a good proxy for prices of cotton traded internationally. The 1985 U.S. farm bill adopted the A Index as the benchmark for calculating the Adjusted World Price (AWP) for the U.S. marketing loan, as from August 1, 1986. The competitive adjustment provisions of the U.S. price mechanism introduced in 1991/92 are also based on quotations in Cotton Outlook.

Quotations are taken into account regardless of the volume offered (including nominal quotes). Quotes can be somewhat manipulated by merchants. For example, U.S. quotes tend to be overestimated because the higher the quote, the higher the Step 2 payment. In contrast, Uzbek and African franc zone quotes tend to be underestimated because some contract purchase prices are based on the same quotes. The general trend of the Cotlook A Index (up or down) is correlated with fluctuations in the New York futures

cotton market the day before. The A Index almost never moves in the opposite direction to New York, but it does not move exactly in parallel because NY reflects the U.S. supply and use situation rather than the world's. Thus, the "basis" of the A Index to NY nearby futures varies widely (between 12 cents off NY to 10 cents on NY since January 2000).

The Cotlook A Index reflects the prices of Middling type cotton staple length 1 and 3/32 inches for nearby shipment of a specific crop (current or forward). All origins aggregated, this type of cotton accounts for about 35% of world production and 45% of world trade.

Cotton prices over the world do not move exactly in parallel to the Cotlook A Index, but all are affected to some extent by its fluctuations. The prices of the major types of cotton (extra-fine, fine and high-medium for ring spun combed yarn, medium for ring spun carded yarn, and coarse count for open-end yarn) are affected by the supply and demand situation facing the market as a whole. Nevertheless, the premiums and discounts from the average for the prices of different types of cotton widen or narrow according to the relative tightness in each category.

Actual prices of imported cotton, in non-producing as well as in producing countries, are based on the Cotlook A Index or on New York futures (for U.S. and Australian), with appropriate quality and shipping differentials, on the day of the contract concluded prior to shipment, and cotton can be sold more than one year forward). Domestic prices of cotton produced and consumed locally are influenced by the supply and demand situation in each country but are not disconnected from international prices. They are affected by taxes and/or subsidies to the agricultural sector and to the textile industry. Seasonal variations are important with prices usually cheaper by harvest time. Spinners generally buy domestic cotton first and turn to imported cotton when local supply dries out.

The quotations (CIF North Europe) taken into account in the calculation of the A Index are getting more and more "virtual" and less representative of the actual international cotton market. Nowadays, Liverpool is no longer a cotton port and the UK imports less than 1,000 tons. The volume of total imports into North Europe (Ireland, UK, Belgium, Netherlands, France, Germany), about 250,000 tons, accounts for only 4% of world trade. The share of North Europe in U.S. exports is even lower: 0.7% in 2001/02 and 2002/03.

The international cotton market moved and continues to move eastward to Asia. In recognition of that shift, Cotton Outlook introduced Selected Far Eastern C/F quotations in January 1999. In January 2004, Cotton Outlook started publishing the Cotlook Far Eastern (FE) Index, which operates in a similar manner to the Cotlook A Index. The quality description is Middling 1-3/32", quotations are compiled and published daily, and the dual Index system reflects nearby and distant offering rates. 15 growths are eligible, including 6 that are not quoted in the A Index (Benin, Burkina Faso, Côte d'Ivoire, Mali, Orleans/Texas, Tanzanian SG1). However, only two African franc zone quotations are permissible Index constituents on any day out of the four growths listed.

Since January 2004, on average the Cotlook FE Index has been 0.65 cents lower than the A index on the same date. Latest Far Eastern quotes are cheaper than the North Europe quotes for 6 of the 9 styles that are also quoted in the A Index, reflecting lower shipping rates and probably also higher competitive pressures in the Far East market.

## ANNEX II

### The New York Board of Trade/New York Cotton Exchange

The New York Board of Trade (NYBOT) is the parent company of the New York Cotton Exchange (NYCE). The New York Cotton Exchange was founded in 1870 and today is the world's premier marketplace for cotton futures and options trading. The primary economic purpose of the NYBOT cotton futures market is to provide a forum for price discovery and a tool for price risk management. Cotton futures prices are established throughout the trading day by open outcry through the actions of many diverse market participants with a large number of competing buyers and sellers. Price quotes are transmitted worldwide. These prices reflect the latest information about supply and demand and are determined in a trading pit with the narrowest spread between bids and offers possible. In 1984 the NYCE instituted trading in options.

A standard cotton futures contract is traded at the NYCE, called the Cotton No. 2 futures contract. The current Cotton No. 2 futures contract is for 50,000 pounds of Strict Low Middling grade with 1 1/16" staple length (100 bales, or 22.68 tons). The contract permits delivery only of white color cotton of grades from good middling to low middling and light spotted grades of good middling to middling. The minimum fiber strength requirement is 25 grams per tex, and micronaire readings of 3.5 to 4.9 are allowed, with no premiums or discounts. The Contract is traded for five delivery months: March, May, July, October and December. The nearest ten delivery months are available for trade. For example in April 2003 the latest delivery month available for trade was March 2005. In 2002 the volume of Cotton No. 2 contracts traded at the NYCE was 2.3 million contracts, and 1.2 million cotton options were traded.

Position limits:

2,500 contracts maximum (56,700 tons) on any single month (300 contracts only on spot month = 6,800 tons) with a combined limit of 3,500 contracts (79,380 tons) for all months.

High daily volatility increases risk of margin calls (daily price fluctuation: 3 cents).

The initial and maintenance minimum margin is \$1,600 for hedgers (and \$2,240 for speculators).

The open interest is low on forward months: in early April 2004, there were only 16,000 Dec 94 contracts and 3,600 Mar 95 contracts.

Recognizing the need for hedging instruments for non-U.S. cotton, the NYCE introduced a World Cotton Futures Contract in 1992. With a trading unit of 50,000 pounds, the contract was to be settled based on a consecutive 5-day average of the Cotlook A index. Despite high expectations and the trading platform of the NYCE, the world contract was traded sporadically during its two years of existence and failed to attract significant volumes. The major reasons for its failure were the lack of an equivalent spot market with well-defined quality specifications and physical delivery locations, an element of subjectivity in the nature of the A Index, and currency exchange risks for cotton of undefined origin. The world contract was terminated in 1994.

# **Commodity Risk Management Approaches for Cotton in West Africa**



**Presented to the  
2004 ITF Meeting, Rome, Italy**

**By Gérald Estur,  
International Cotton Advisory Committee**

# Outline

- **Overview of the Cotton Sector in African franc zone**
- **Marketing and Pricing Systems**
- **Allocation of Risks**
- **Lessons Learned**
- **The Way Ahead**



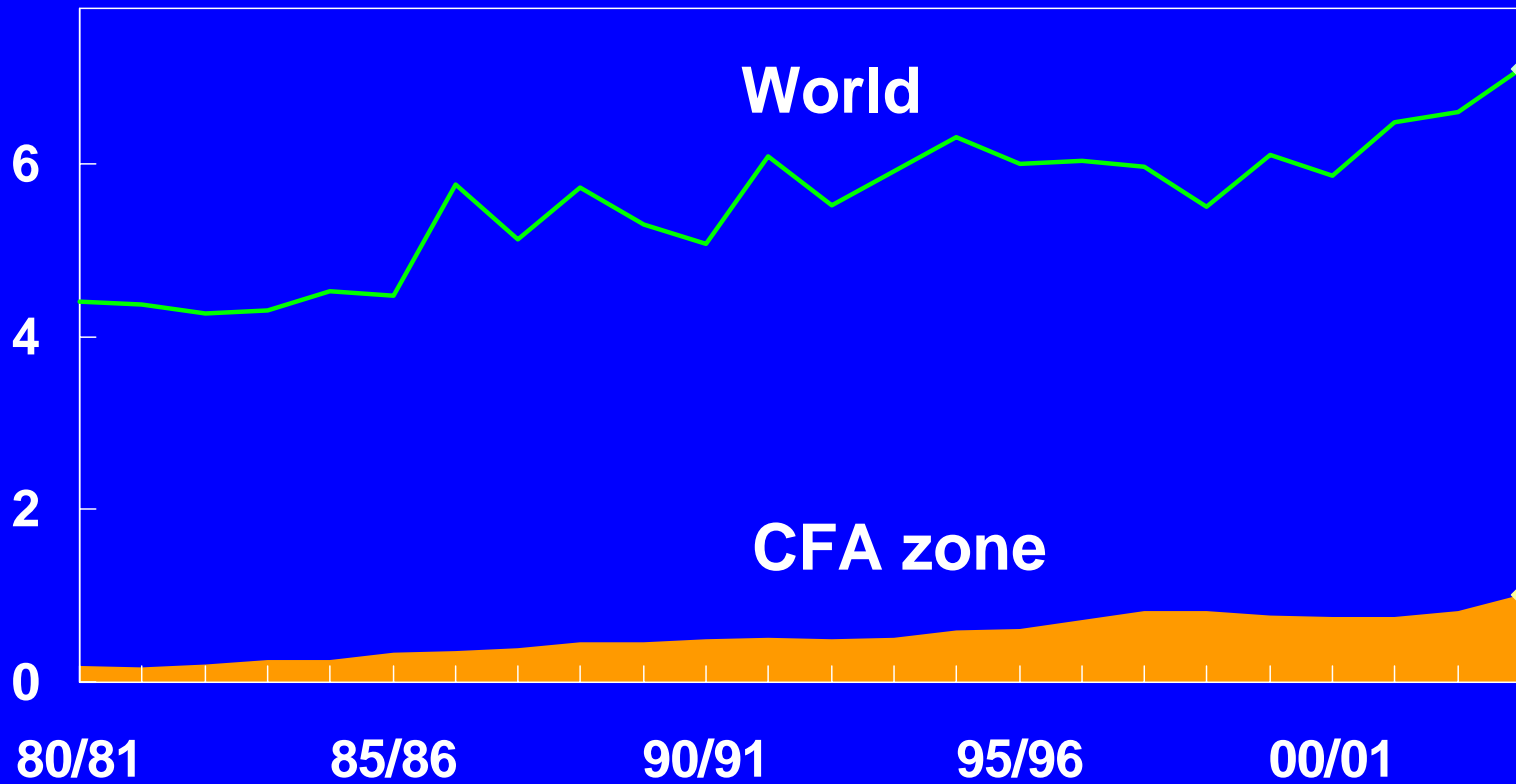
# Overview of the Cotton Sector in the CFA zone

- One million tons (5% of world) produced in 11 countries
- 100% rain fed cultivation
- Small-scale farms
- Labor intensive (100% hand-picked)
- Above-average quality
- Cost-competitive (unpaid family labor)
- Export-dependent (97% exported)
- **Price-taker** (15% of world, 2<sup>nd</sup> after U.S.)
- High exposure to price volatility



# COTTON EXPORTS

Million Tons

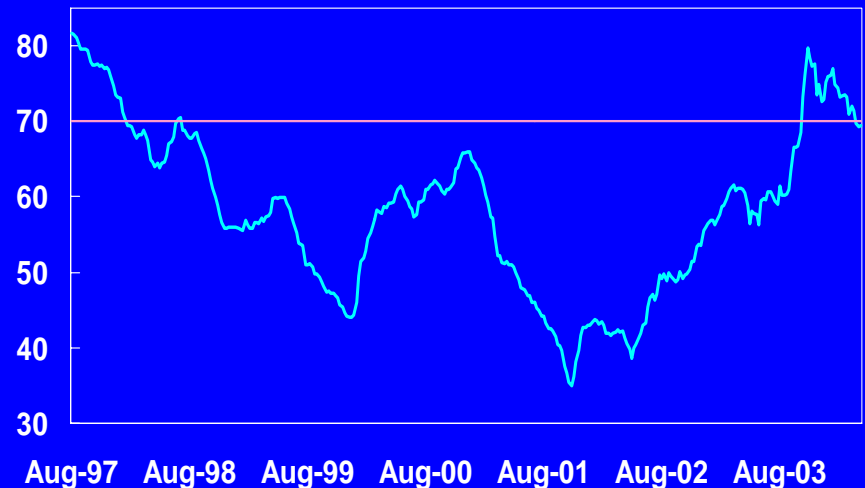


# Cotton Prices are Volatile

- **Season averages**
- **Monthly fluctuations**
- **Daily Fluctuations**
- **Volatility may increase**
- **Affects producers, ginners, trade, banks & governments**

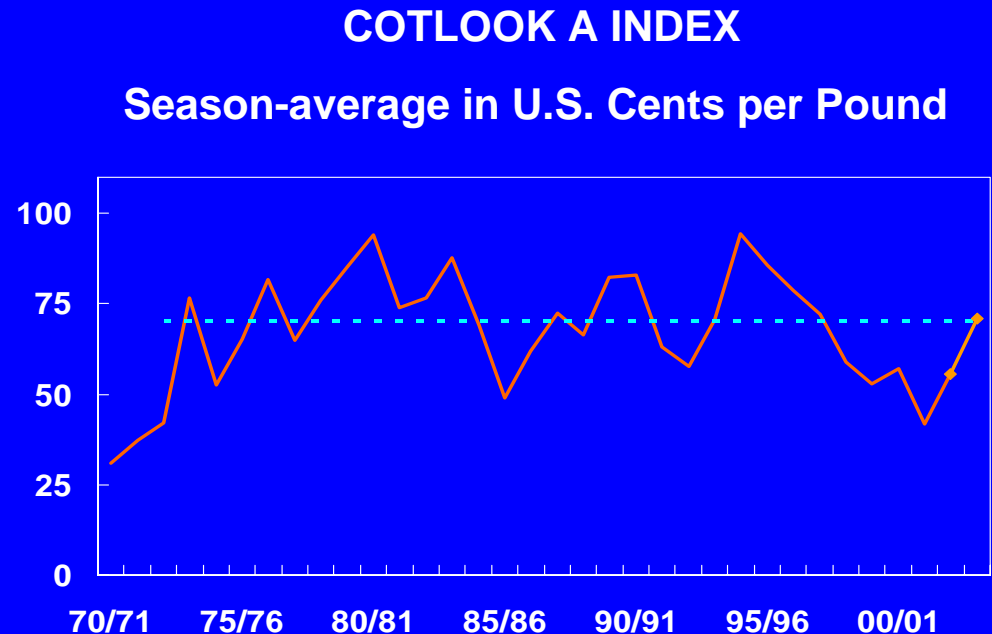
## COTLOOK A INDEX

U.S. Cents per Pound (Middling 1-3/32", CIF North Europe)



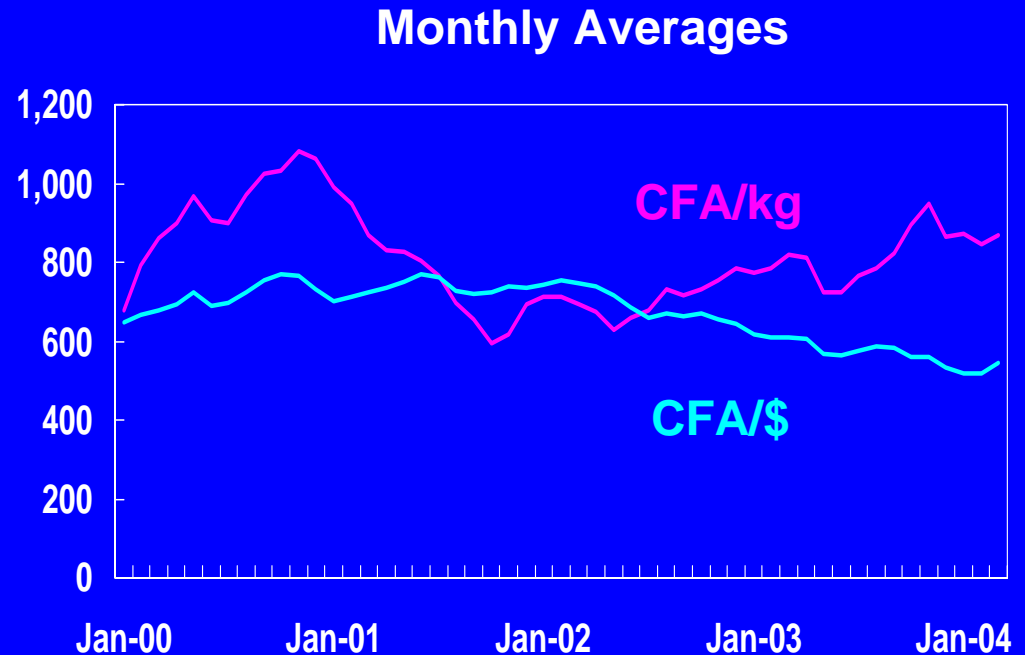
# Price Fluctuations are Unpredictable

- ICAC price projections
- NYBOT cotton futures
- Unlikely to improve



# Currency Risk

- . Int'l cotton prices in US\$
- . Production costs in CFA
- . CFA franc pegged to euro
- . Affects revenues & costs
- . Exchange rates volatile & unpredictable



# Cotton Sector Structure

- . 8 countries producing over 20,000 tons of lint each
- . Vertical integration (“filière intégrée”)
- . About 1.5 million producers
- . 1,000+ producers associations (village, regional, national)
- . No middlemen between producers & ginners
- . 21 ginning companies ( 81 gins):
  - Monopsony in Burkina Faso, Cameroon, Chad, Mali, Senegal
  - Liberalized in Benin, Côte d’Ivoire, Togo
- . 15+ international cotton merchants
- . 300+ importers/spinners in 50+ countries
- . 10+ input suppliers; 15+ domestic & foreign banks



# Pricing Mechanisms

## Seed cotton

- . Minimum procurement price announced before planting taking into account cost of production & world price
- . Pan-seasonal & pan-territorial pricing
- . 2 or 3 qualities only
- . Cost of inputs deducted from seed cotton sales
- . Stabilization mechanisms in some countries
- . Floor price eventually supplemented (“ristourne” following season)

## Lint cotton

- . Sales in euro per kg FOB port (mostly @ fixed price) based on Cotlook A Index & African franc zone quote
- . Quality premiums & discounts



# Risk Allocation: Producers

- **Financial risk: none (inputs on credit)**
- **Price risk: none (fixed seed cotton price)  
pan-seasonal & pan-territorial pricing**
- **Counterpart risk: non-existent (market guaranteed)**
- **Quality risk: low (grading system not rigorous)**
- **Payment risk: significant (late payments)**



# Risk Allocation: Ginners

- **Financial risk: high (input & crop financing: 2 ½ years )**
- **Input credit recovery risk : low (joint liability from producers)**
- **Seed cotton delivery risk: moderate (increasing with competition)**
- **Price risk: high (fixed producer price)**
- **Exchange risk: none (sales in euro/kg)**
- **Counterpart risk: low**
- **Contract performance: moderate**
- **Quality risk: significant**
- **Payment risk: low (delayed shipments)**



# Risk Allocation: Merchants

- **Financial risk: low (unless pre-financing or pre-payment)**
- **Delivery risk: moderate**
- **Quality risk: significant**
- **Price risk: high**
- **Exchange risk: high**
- **Counterpart risk: low (cotton trade based on relationships)**
- **Contract performance: moderate (sanctity of contracts/default lists)**



# Risk Allocation

- **Banks: financial risk**
- **Input suppliers: financial risk**
- **Governments: emergency price support (Benin, Côte d'Ivoire, Mali)**



# Price Risk Management

## Producers

- . Pricing system
- . Know-how nonexistent

## Ginners

- **Fixed price** sales contracts in euro (95%)
- **Forward sales** (generally about 50% prior to ginning) to secure financing
- Guaranteed minimum price (< 5%)
- “On-call” sales (<5 %, price to be fixed basis Cotlook indexes)
- . Size not a problem
- . Reluctance/fear (futures market = casino)
- . Lack of expertise & negotiating power

## Input Suppliers

- . Higher prices & interest rates

## Banks

- . Forward sales contracts as collateral



# Price Risk Management

## Merchants

- NYBOT futures: opportunistic use (about one-third)
- Physical hedges (crops/origins/sales)
- B2B
- On-call purchases (< 5%)
- OTC
- Currency risk: 100% hedged
- Options: limited use (guaranteed minimum price)
- Delivery risk: renegotiate terms, invoice back
- Quality risk: applications, claims
- Know-how: unequal

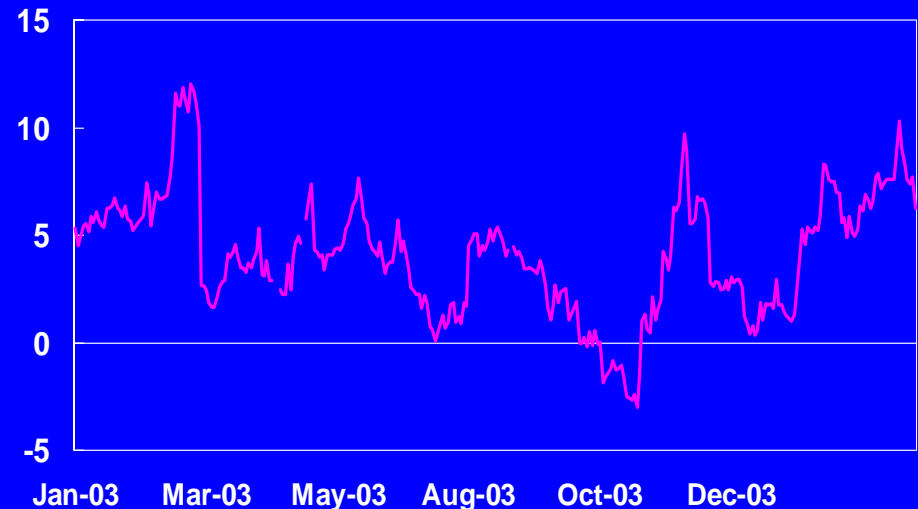


# Major Inhibitor: Basis Risk

- **Non-U.S. cotton can't be delivered on NYBOT**
- **NYBOT quality basis below African franc zone cotton**
- **NYBOT reflects U.S. supply & demand**
- **Average basis variation is about half cash price variation**
- **Fluctuations may decrease**

## BASIS

Cotlook A Index minus NYBOT Spot Futures (U.S. cts/lb)



# Lessons Learned

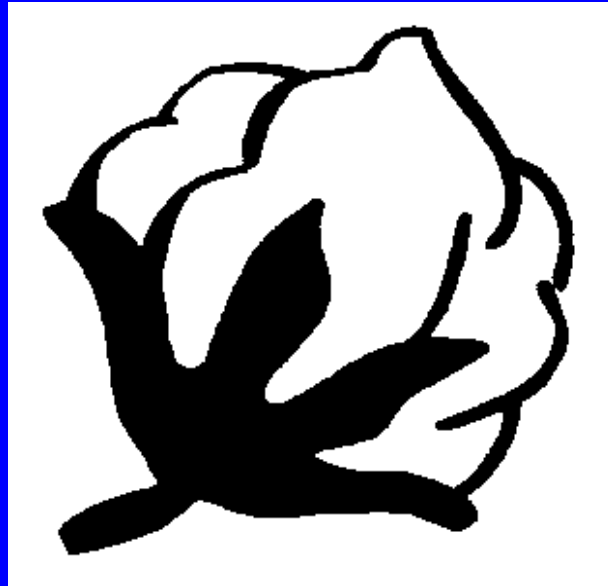
- Marketing cotton from CFA countries is not a problem
- Link between input credit and marketing is crucial
- **Farmers are protected by pricing system**
- Stabilization system worked in Burkina, Cameroon & Senegal
- Competition does not guarantee higher producer prices
- Liberalization/privatization may increase price risk exposure
- **Financial risk supported by ginners, banks**
- Forward contracts widely used
- **Price risk transferred to merchants, governments**
- Basis risk is major inhibitor to hedging
- Considerable lack of expertise & negotiating power:
  - Trade concentrates market knowledge & know-how
  - Insufficient access to market information
  - Little understanding of price risk exposure
  - Psychological & language barriers



# The Way Ahead

- **Maintain & strengthen what works**
  - Link between input credit and marketing
  - Pan-territorial & pan-seasonal pricing
  - 2-stage payment of seed cotton (same season)
  - Improve quality thru more rigorous pricing system for seed cotton
- **Educate producers and ginners**
  - Understanding of prices
  - Cotton trade rules and regulations
  - Demystify price risk management
  - Reinforce negotiating power of ginners
  - Increase role of producers in pricing & marketing decisions
- Facilitate access to information on markets & prices
- Improve price discovery (tenders, e-commerce)
- Expand use of guaranteed minimum price contracts
- Promote forward contracts priced on a base type
- Develop marketing pool, electronic trading platform
- Consider direct sales to spinners





**International Cotton Advisory  
Committee**