



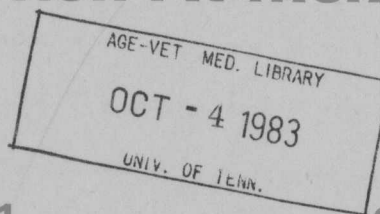
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CASH-FUTURES PRICE RELATIONSHIPS FOR TENNESSEE COTTON AT MEMPHIS

Cash-Futures Price Relationships For Tennessee Cotton At Memphis



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TABLE OF CONTENTS

	Page
INTRODUCTION - - - - -	1
OBJECTIVE - - - - -	4
SOURCE OF DATA - - - - -	5
FACTORS THAT AFFECT BASIS - - - - -	5
Supply and Demand - - - - -	5
Transportation and Storage - - - - -	6
Delivery on Futures Contract - - - - -	7
Quality Differences - - - - -	7
Buyer Competition - - - - -	8
HOW COTTON PRODUCERS CAN USE BASIS DATA - - - - -	8
Hedging - - - - -	8
Cash Contracting - - - - -	10
Spot Sales - - - - -	13
HOW TO READ THE BASIS TABLES - - - - -	14
COTTON BASIS RELATIONSHIPS - - - - -	14
Price Variability - - - - -	14
Basis Consistency - - - - -	17
CONCLUDING REMARK - - - - -	19
REFERENCES - - - - -	20
APPENDIX - - - - -	21

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INTRODUCTION

Cotton prices in recent years have been highly volatile, making the marketing decisions of producers increasingly difficult. Price variability is not just a complex problem for producers but also for cotton merchants and textile millers. Much of this price volatility is due to three factors--an expanded export market, supply uncertainty, and fluctuating national and international economic conditions.

The annual export market for U.S. cotton expanded from an average of 4.2 million bales for the 1970-72 marketing years to an average of 7.1 million bales during the 1978-80 period [9,10, and 12]. Current dependence on this export market complicates price forecasting because a large importer entering or leaving the market can have a substantial effect on price.

Yield variability has become a serious production problem nationally as well as locally. During the past 11 years, average annual cotton yields in Tennessee have varied from 290 to 597 pounds per acre (Table 1). The coefficient of variation in yield per acre for Tennessee growers over this 11-year period was 0.24, while the coefficient ranged from 0.14 to 0.20 in other southern cotton producing states. Thus, it appears that Tennessee growers' uncertainty regarding cotton yields is slightly greater than that confronting cotton growers in other states. Supply uncertainty also

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Table 1. Cotton yields per acre in selected cotton producing states, 1971-1981

Year	Tenn.	Ala.	Ark.	La.	Miss.	Mo.	Tex.
	----- pounds -----						
1971	597	551	522	576	613	614	263
1972	543	470	488	509	599	520	408
1973	472	423	513	481	651	501	431
1974	290	429	374	423	448	335	269
1975	339	405	485	535	454	449	293
1976	295	399	392	474	376	305	353
1977	408	337	534	583	581	437	408
1978	490	443	417	450	561	496	294
1979	357	510	549	712	657	550	389
1980	349	411	330	395	488	353	234
1981	496	539	496	511	628	422	387
Average	421	447	464	513	551	453	339
Std. Dev.	99	62	70	84	90	91	67
C.V. ^a	0.24	0.14	0.15	0.16	0.16	0.20	0.20

^aCoefficient of variation calculated by dividing the standard deviation by the mean.

Source: U.S. Department of Agriculture [9 and 10].

exists with the world production of cotton, which in turn can readily affect the demand for U.S. cotton.

The market for cotton products in the U.S. is affected by the general economic situation. Assuming that consumer tastes and preferences remain unchanged, expenditures for many cotton products are adversely influenced by a decline in real per capital income. Therefore, while the demand for cotton may be strong at planting time, recessionary and/or inflationary pressure can affect the aggregate demand for cotton lint in both the domestic and export markets.

Cotton producers are confronted with a risk management situation as they consider alternative methods of cotton marketing and pricing. When to sell and when to store are important marketing decisions. Cotton farmers in Tennessee have several marketing alternatives which they may consider: forward cash contracting, hedging on the futures market, and spot (cash) sales. Storage and deferred pricing may also be incorporated into a farmer's marketing strategy. An awareness of how these marketing options can be combined in a marketing strategy should assist producers in reducing risk and/or increasing returns [1,2,3,4, and 5].

"Basis" is used to describe the difference between simultaneous prices for cotton futures and spot cotton. Since there are different spot markets and several futures months, the basis needs to be quoted by reference to a particular spot market and futures month.¹ For example, suppose the October, 1981, basis for Memphis, Tennessee, is 375 points (1 point - 1/100 cent). This would mean the current cash price in Memphis is 3.75 cents per pound below the October 1981 futures contract being traded on the New

¹There are nine major spot markets in the U.S. and five futures contract months on the New York Cotton Exchange (March, May, July, October, and December).

York Cotton Exchange. An individual producer selling cotton through a gin in West Tennessee would determine his own local basis by adding to the Memphis basis the difference between the Memphis spot market price and the price he could receive at his local gin. If a producer has offers to buy his cotton at the gin at 2.5 cents off the Memphis spot market price, then his local basis would be 625 points (Memphis basis of 375 points plus discount of 250 points for local price compared to Memphis price).

Changes in the basis over time can be forecast because cash and futures prices generally fluctuate in the same direction and tend to converge as the contract month approaches. The fundamental underlying relationship between cash and futures prices is that the difference between the two represents the cost of storage and transportation. When cash prices are below futures prices, which is the normal situation, there are positive returns to storage and the situation is termed a "carrying charge market." If the basis is weak² the implication is that the situation is appropriate for storing cotton and hedging through the sale of futures contracts to earn returns on storage. If the basis is strong³, selling for current delivery is often preferred over storing for future delivery. If the cash price exceeds the futures price, then returns to storage are negative and the situation is referred to as an "inverted market."

OBJECTIVE

Futures markets provide some opportunity to producers for risk management and pricing; therefore, farmers need an understanding of how to use

²The basis is weak when cash prices are at wider than expected discounts to futures prices.

³The basis is strong when the difference between cash price and futures price is smaller than expected.

a commodity futures market.⁴ The objective of the research reported here was to examine the relationship between cash prices for cotton at Memphis, Tennessee, and futures prices for cotton established at the New York Cotton Exchange. An estimation of basis at county locations in Tennessee was preferred but sufficient price data were not available.

SOURCE OF DATA

In this study, the cotton basis at Memphis, Tennessee, was calculated with reported USDA spot market prices and futures market prices on the New York Cotton Exchange. The spot market quotations on Thursday of each week were subtracted from the Thursday closing futures market prices for each futures month. Since most cotton cash market transactions occur during the normal trading hours of the futures exchange, cash and futures prices on the same day can reasonably be compared.

FACTORS THAT AFFECT BASIS

While the basis has been defined as the difference between cash and futures prices, several factors have an effect on the basis and cause it to strengthen or weaken over time. These factors are: supply and demand for cotton, supply and demand for transportation and storage facilities, quality differences, and buyer competition.

Supply and Demand

The cash price paid for cotton in West Tennessee is generally heavily influenced by the same economic forces that affect international demand and

⁴There are two futures markets for cotton--the New York Cotton Exchange and the New Orleans Commodity Exchange. The quality of cotton grown in Tennessee much more nearly matches the quality specifications of the futures contract traded on the New York Cotton Exchange rather than the New Orleans Commodity Exchange.

supply. A short-term aberration can occur when a local shipper or merchant experiences a shortage or surplus which pushes the Memphis spot market prices out of their normal relationship with prices in other major cotton markets.⁵

Supply-demand forces will often result in a cotton basis which is slightly different from the historical average. If the available quantity is small, perhaps due to a short crop, or demand is strong, then buyers eagerly bid for cotton and may push cash prices up faster than futures prices. The result is a narrower (or stronger) basis, which is a favorable situation for those selling cotton. In contrast, a large supply and/or weak demand usually result in a wide (or weak) basis. The willingness of cotton growers to sell can, at least temporarily, affect the local supply, the cash price level, and the size of the basis.

Transportation and Storage

The local basis for an individual cotton producer includes the cost of transporting cotton from his farm to a central market, such as Memphis. A widening of the local basis will probably occur if transportation costs increase. A temporary shortage of rail cars and truck-trailer units to move cotton from gins to warehouses to textile mills is generally reflected in lower cash bids for cotton and a wider basis. These higher transportation costs are usually reflected in lower cash prices offered to producers even though futures prices are unaffected by these factors.

Although transportation and storage shortages can be a price problem in the cotton industry, the problem is less important than in the grain

⁵There are nine major spot cotton markets in the U.S. The Memphis market is the largest of these nine.

sector. There is presently excess warehouse storage capacity in the U.S. cotton industry. This excess capacity removes some potential price pressure which can result from transportation-storage deficiencies.

Some cotton buyers are in a better position to fill a large commercial order than are others. For example, merchants in Memphis have an advantage over merchants in some states to quickly ship cotton to Gulf ports to fill new export orders. Those buyers who have a distance, size, or transportation advantage are generally in a better position to offer higher prices and a narrower basis.

Delivery on Futures Contract

Delivery of cotton to fulfill a futures contract involves more than just the cost of transportation to a designated warehouse. The cotton must be reclassified from an additional sample from each bale. These costs are paid by the seller and, by comparison, are considerably greater than the additional delivery costs for grains [3].

Quality Differences

Futures contracts on the New York Cotton Exchange specify grade 41 (strict low middling), staple 34 (1 1/16" fiber length), with 3.5 to 4.9 micronaire (mike) [5]. If a grower sells cotton which differs in quality from the above specifications, a premium or discount will need to be considered. In an average year, approximately 40% of the upland cotton ginned in Tennessee is untenderable⁶ [8]. These untenderable bales can be hedged, but the grower must account for quality discounts in calculating his local basis.

⁶Untenderable means the cotton is below minimum deliverable standards with respect to grade, staple, and mike for settlement of futures contracts.

Buyer Competition

Raw cotton merchants buy from growers and sell to mills. The price they can pay growers for cotton is limited by the maximum price they can receive when cotton is resold. Although handling margins are usually relatively small, the extent of buyer competition for the producer's cotton in a particular area can influence prices paid to some degree.

HOW COTTON PRODUCERS CAN USE BASIS DATA

Basis data can be used in three primary ways in a cotton grower's marketing program: (1) using the futures market to hedge cotton sales; (2) evaluating cash contract offers; and (3) making spot (cash) sales.

Hedging

Tennessee cotton growers can forward price cotton on the futures market by establishing a hedge, although hedging is not used as extensively as cash contracting.⁷ Hedging on a futures market is a risk aversion or price protection technique available to numerous cotton growers and merchants. Simply stated, a futures market hedge involves the sale of a futures contract for cotton that the grower intends to actually sell on the cash market at a later date. At the time of the actual cash sale, an offsetting transaction (contract purchase) is made on the futures market. Success in the hedging activity depends heavily on the ability of the hedger to estimate the basis. If the hedger can accurately predict in advance what the basis will be at the time of the cash sale, then the hedger can avoid price risk by accurately predicting the net price he will receive when the hedge is closed and the cotton actually sold. The

⁷The size of a futures contract (50,000 lbs. or about 100 bales) may prohibit many growers from hedging.

potential exists for a producer to use the futures market to establish a price for the crop prior to harvest (production hedge) or lock in a return for storage after harvest (storage hedge).

A production hedge can be used to establish an approximate price for a growing crop or one that is still to be planted. To effectively use basis information in making or evaluating a production hedge, the following procedure can be used:

1. Select the month in which the cotton is likely to be actually sold. The typical harvest months in Tennessee are October and November.
2. Choose the nearest futures contract month but not one maturing before the time the crop is expected to be sold. This usually means that the December futures contract month is the appropriate one to use for pricing harvest-delivery cotton. The approximate price being offered through a futures hedge can be determined by subtracting the estimated basis and estimated hedging costs (brokerage commission plus interest on margin deposit) from the quoted futures prices. For example, if the estimated October basis at Memphis is 350 points, hedging costs are estimated at 30 points per pound (based on commission of \$75 per contract and interest for six months at 15% on a margin deposit of \$1,000), and the December cotton futures contract is trading at 71.50 cents per pound, then the expected Memphis price being offered by the hedge is 67.70 cents ($71.50\text{¢} - 3.5\text{¢} - 0.3\text{¢}$). This Memphis price can be adjusted to the local level by subtracting the expected discount of local spot prices compared to spot prices at Memphis.

The accuracy of this price estimate depends on the accuracy of the basis estimate.

A storage hedge can be used to lock in a storage return and/or substantially reduce the risk of lower prices on commercially-stored cotton. The procedure for evaluating a cotton storage hedge is:

1. Select the month when the sale of stored cotton is expected and/or when the hedge is most likely to be lifted. If the sale of stored and hedged cotton is anticipated in April, the closest futures contract month is May. Subtract the predicted May basis from the current May futures price. This calculated price represents the localized amount being offered for delivery of cotton out of storage in April. To determine the potential gross storage return being offered by the futures market, subtract the current spot price from the localized futures price offered for April delivery.
2. Subtract the futures hedging cost and the storage costs (including interest on stored inventory) from the gross storage return to determine the net storage return potential. If the basis is accurately predicted the net storage return estimate should also be accurate.

Cash Contracting

If a cotton producer prefers to avoid the risk of a price decline through the use of a cash contract rather than hedging on the futures market, knowledge of the basis is still useful. A merchant may offer to buy a grower's cotton for delivery in October and November. This offer may be made at any time before harvest and perhaps even before the crop is planted. Most of these bids are based on the current price of December

cotton futures. A typical offer would be based on a specific number of cents or points per pound below the December futures price, usually with allowances for premiums or discounts based on quality differentials from the specified contract quality requirements. The number of cents the merchant subtracts from the futures price is influenced by the basis, plus a charge for handling costs, risk, and profit. The merchant will usually hedge such a contract purchase on the futures market by immediately selling December cotton futures to avoid the risk of a subsequent drop in price.

Since 1973, the proportion of Tennessee's cotton crop forward cash contracted has ranged from 1% to 65% (Table 2). The proportion of the cotton crop contracted in the other South Central states varied similarly from less than 2% to 86%; however, the proportion of Tennessee's cotton crop contracted was usually the lowest of the five states.

If a cotton grower is evaluating a cash contract (either fixed price or basis type), he can use the basis estimates to determine whether or not the offered contract basis is fair. If, for example, the average harvest basis is 450 points under the December futures price, the best new-crop offer is 800 points off December, the grower may desire to: (1) delay contracting until the basis improves; (2) shop around for a narrower contract basis; or (3) consider hedging in the futures market. When considering a call contract⁸, the producer should be aware of recent basis patterns for the period when the price is expected to be called.

The cash contract basis will usually be somewhat greater than the actual basis during the delivery period, because the buyer is also faced

⁸With a call contract the grower is assured of a market for the contracted cotton, yet the specific price has not been set. The grower is usually permitted to specify (call) the day within a certain time period and the price he receives is a pre-designated number of points below the closing futures market price.

Table 2. Forward cash contracting of upland cotton by south central and southeastern growers, 1974-1981

State and Area	Share of cotton crop contracted								Average ^a 1974-81
	'74	'75	'76	'77	'78	'79	'80	'81	
	- - - - - percent - - - - -								
South Central States:	30	15	75	20	39	35	65	19	37
Arkansas	30	17	86	18	38	27	62	16	37
Louisiana	21	2	72	6	29	23	41	8	25
Mississippi	37	17	70	30	48	50	80	28	45
Missouri	36	12	84	23	46	40	79	26	43
Tennessee	17	1	65	2	17	13	46	9	21
Southeastern States: ^b	10	5	53	12	16	23	33	10	20

^aNot weighted by acreage.

^bIncludes Alabama, Georgia, North Carolina, and South Carolina.

Source: Cotton Market News [11].

with basis considerations when he resells cotton. Obviously, the buyer incurs costs and risks when contracting with growers. His costs include brokerage commission and interest on margin deposits. Risk is assumed by the buyer when the contract basis is established because, at the time of delivery, the cash basis may well be considerably larger than the contract basis which was fixed earlier. Cotton buyers may widen the cash contract basis by several points per pound compared to historical cash basis to account for these risks.

Spot Sales

Even though a cotton farmer may not forward price his crop through a cash contract or a futures market hedge, he may use the information available from futures markets and basis movement to help determine an opportune time to sell on the spot market. When the local basis widens (weakens) it may indicate that local buyers do not need cotton, or local offerings are abundant relative to demand; therefore buyers generally bid less aggressively. If the basis strengthens, i.e., the discount to the nearby futures decreases, this indicates that local buyers need cotton and are willing to pay a price that is better than usual relative to the futures price.

Cotton growers should consider the possible explanations for a much wider or narrower basis than would ordinarily be expected at some particular time of the year. Is the narrow basis only a temporary situation which the grower may want to take advantage of or is it an indication of higher prices to come in future weeks? When a wide or weak basis is giving a "slowdown" signal, is it a local situation only? If so, are prices outside the local area enough higher to justify the additional cost of transportation required to sell cotton in some distant market?

HOW TO READ THE BASIS TABLES

The basis tables in this study were constructed with the futures contract months across the top of the table. The calendar months of the year in which sales are made are listed vertically down the left side, starting with August, which is the first month of the cotton marketing year. A summary of basis values over the 1975-76 through 1980-81 period is presented in Table 3. The basis estimates shown in the body of the table are in cents per pound. Unless otherwise indicated, the values are positive, which means that futures market prices were above cash prices. Negative values indicates that futures prices were below cash prices. To locate the average basis estimate for Memphis during October, read down the column on the left to October, then read across to the December contract month. The "3.31" located at this intersection indicates that over this six-year period, cash prices at Memphis during October averaged 3.31 cents per pound under the December futures price. If a cotton grower learns from record-keeping or from a ginner that his local basis averages about 2 cents under Memphis, he understands that local cash prices during October have been about 5.3 cents under December futures prices in recent years.

COTTON BASIS RELATIONSHIPS

Price Variability

Over the past seven years the cash price for cotton as reported by the U.S. Department of Agriculture Market News Service in Memphis, Tennessee has moved through two major cycles (Figure 1). Beginning at 34.85 cents per pound on January 1, 1975, prices climbed to a peak of 88.10 cents about

Table 3. Average cotton basis for each futures trading month over six marketing years, from 1975-76 through 1980-81, Memphis, Tennessee.

Month of marketing year	Futures contract month ^a											
	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
	----- cents per pound -----											
August	2.31	2.31	3.22	3.79	4.14							
September	2.94	3.58	4.66	5.33	5.55							
September	b	3.69	4.90	5.60	5.74	3.33						
October		3.31	4.52	5.17	5.19	2.26						
November		3.27	4.60	5.39	5.45	2.41						
November		b	4.45	5.40	5.62	3.70	3.61					
December			4.71	5.71	6.16	2.26	1.34					
January			4.51	5.72	6.41	3.55	1.57					
February			3.77	4.65	5.30	2.52	0.40					
February			b	4.20	4.71	2.51	0.34	1.11				
March				3.42	3.96	2.49	0.57	1.35				
April				2.64	3.22	1.87	0.04	0.98				
April				b	2.43	1.50	-0.11	0.89	1.55			
May					1.92	1.19	-0.30	0.54	1.18			
June					1.91	1.43	0.50	1.25	1.86			
June					b	1.75	0.61	1.20	1.66	2.02		
July						1.69	0.83	1.57	2.08	2.38		

^aSee Appendix Tables 1-6 for monthly averages during each marketing year.

^bSee Appendix Table 7 for dates indicating the adjustment to the next futures month for calculating the "nearby" basis.

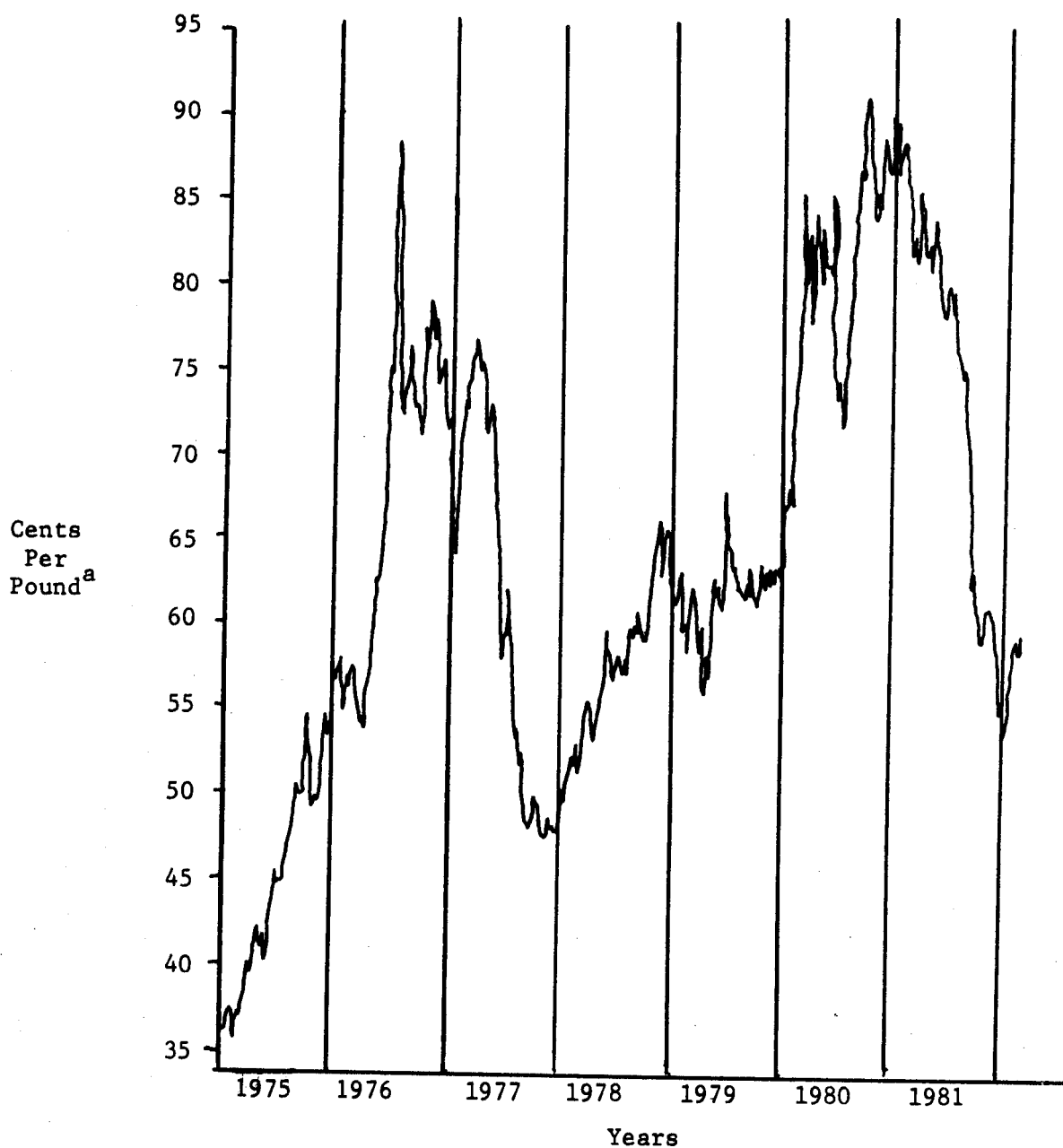


Figure 1. Spot Market Prices for Cotton in Memphis, Tennessee, 1975 Through 1981

^aGrade 41, staple 34, micronaire 3.5 to 4.9.

Source: Market News Service [7].

18 months later. About 18 months after this peak, prices bottomed at 47.34 cents on November 2, 1977. Cotton prices then appeared to exhibit fairly steady growth until experiencing a rapid increase during the latter part of 1979. During 1980 and the first half of 1981, cotton prices remained in the upper 70's and 80's. Over the last half of 1981, cotton prices fell precipitously.

Basis Consistency

Although cotton prices varied greatly in recent years, a fairly consistent pattern for the "nearby" basis was exhibited over each of the six cotton marketing years covered in Table 3. At the beginning of each marketing year in August, the average October basis over the six years was 231 points. As the marketing year progressed, the basis usually increased in November or December and then narrowed through the spring and early summer months.

With respect to forward contracting and hedging, the December basis is of special interest because December is the nearest futures month during the harvest period. The variability of the December basis is exhibited in Figure 2. In October and November, the basis for December futures for Memphis cotton averaged 331 and 327 points, respectively. Thus, the basis for December futures can be expected at certain probability values to be within an identifiable range during the major harvest period. For example, based on 1975 through 1981 period, there is a 95 percent probability that monthly average of the December futures basis in October will be within the range of 223 to 429 points.⁹

⁹The standard deviation of the average monthly December basis in October from 1975 through 1980 is 49 points.

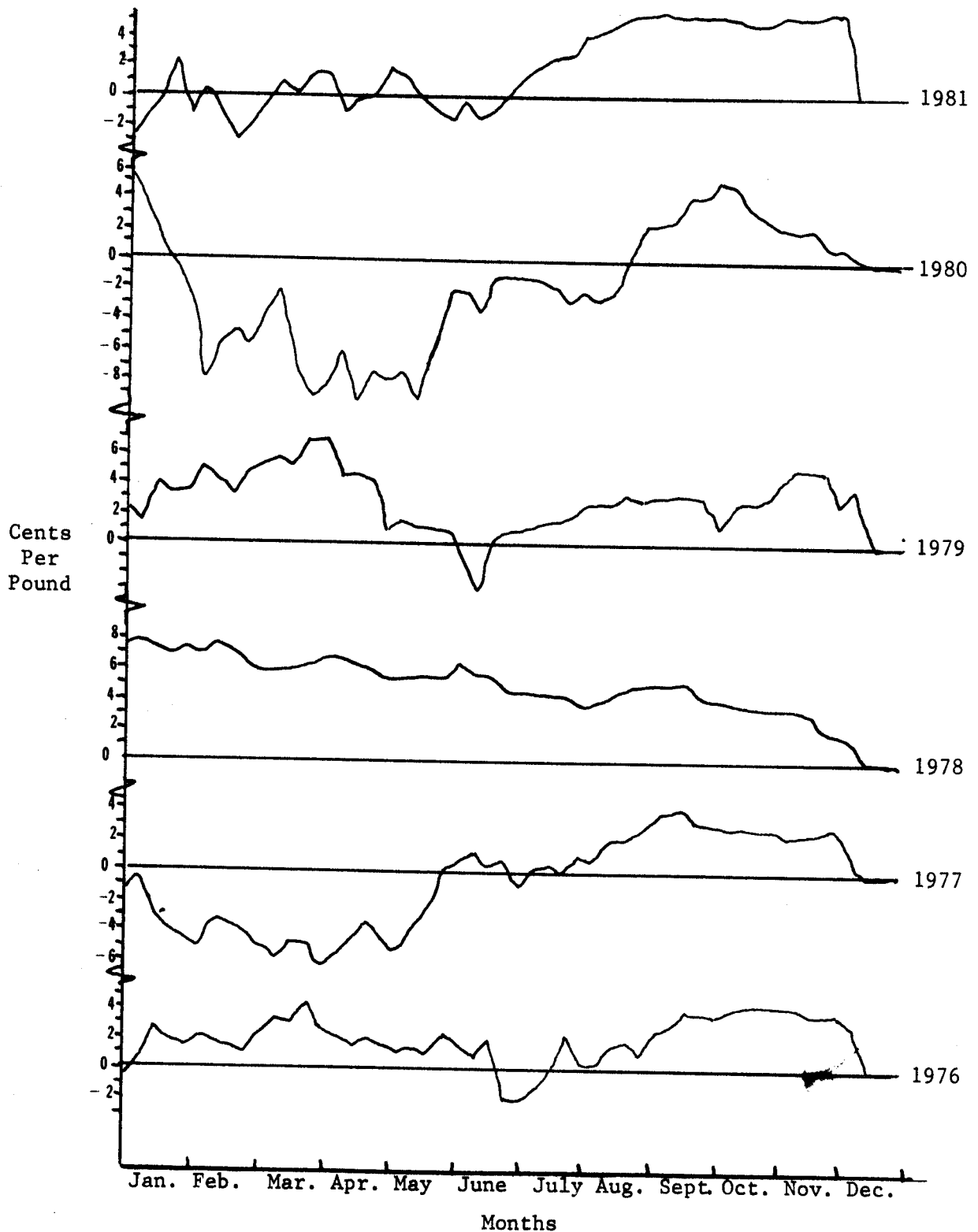


Figure 2. December Basis for Spot Cotton in Memphis, Tennessee, with Cash Equal to Zero, for 1976 Through 1981

CONCLUDING REMARK

In an attempt to assist cotton producers with their marketing decisions, the differences between spot market prices for cotton in Memphis, Tennessee and New York Futures Market prices over the past few years were examined. This review of the basis for Tennessee cotton producers should provide additional insight for growers evaluating price offers on forward contracts. However, the reader is reminded that basis considerations entails only part of the overall evaluation needed to rationally accept or reject contract offers. Obviously, the actual price offered is the most critical consideration. Yet dramatic fluctuations in cash prices over the past few years emphasizes the difficulty in trying to predict cash prices just a few months in advance.

REFERENCES

1. Brooker, John R. and Danny Terry. Cotton Marketing Alternatives, RR. No. 82-06, Dept. of Agricultural Economics and Rural Sociology, University of Tennessee Experiment Station, April 1982.
2. Dahl, Reynold and Patrick Henneberry. Cash-Futures Price Relationships--Guides to Grain Marketing. Station Bulletin 517, Agricultural Experiment Station, University of Minnesota, 1977.
3. Loyd, M. I. and H. M. Harris, Jr. The Cotton Basis for Selected S.C. and Adjacent Markets. Extension Economics Report No. 26, Department of Agricultural Economics and Rural Sociology, Clemson University, Clemson, South Carolina, February 1979.
4. McLemore, Dan L. and John R. Adams. "Futures Market Basis for Tennessee Slaughter Hogs, 1970-79," Tennessee Farm and Home Science, Progress Report No. 112, Agricultural Experiment Station, University of Tennessee, Knoxville, 1979.
5. New York Cotton Exchange. Cost Booklet for Delivering and Receiving on New York Cotton Exchange Futures Contracts. New York, N. Y., Revised Edition, 1979.
6. Spencer, William (editor). "Forward Contracting Can Shift The Risk, Cotton Grower. Vol. 17, No. 3. 4646 Poplar Ave., Memphis, Tenn., March 1981.
7. U.S. Department of Agriculture. Cotton Price Statistics. Agric. Mkt. Service, Cotton Division, Selected volumes from 1975-81, Memphis, Tenn.
8. U.S. Department of Agriculture. Cotton Quality Crop of 1979. Agric. Mkt. Service, Cotton Division, Vol. 53, No. 7, Memphis, Tenn., Sept. 1980.
9. U.S. Department of Agriculture. Statistics on Cotton and Related Data 1960-78. ESCS, Statistical Bulletin No. 617, Washington, D.C., March 1979.
10. U.S. Department of Agriculture. Supplement for 1981 to Statistics on Cotton and Related Data 1960-78. ESCS, Statistical Bulletin 617, Washington, D.C., May 1982.
11. U.S. Department of Agriculture. "Weekly Cotton Market News," Agricultural Marketing Service, Cotton Division, 4841 Summer Ave., Memphis, Tenn., Vol. 63, No. 22, January 8, 1982.
12. U.S. Department of Commerce. Cotton Production and Distribution. U.S. Bureau of Census, Bulletin No. 202, Washington, D.C., 1966.

Appendix

Table 1. Monthly average cotton basis for each futures trading month of the 1975-76 marketing year, Memphis, Tennessee.

Year and month	Futures contract month											
	1975		1976				1977					
	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
	----- cents per pound -----											
<u>1975</u>												
August	2.91	3.27	4.05	4.62	5.16							
September	2.70	3.44	4.21	4.65	5.19							
September	a	3.34	4.32	4.80	5.14	5.13						
October		2.85	4.12	4.78	5.24	5.12						
November		2.46	4.01	4.86	5.33	5.28						
November		a	4.11	5.04	5.44	4.06	3.33					
December			4.13	4.74	5.00	2.88	1.58					
<u>1976</u>												
January			4.39	5.27	5.54	3.19	1.08					
February			3.47	4.52	5.23	3.97	2.07					
February			a	4.28	4.65	3.01	1.14	1.79				
March				3.85	4.48	3.57	2.57	3.39				
April				3.12	3.80	3.07	2.22	3.09				
April				a	3.30	3.50	2.27	3.05	3.49			
May					2.70	2.90	1.37	1.64	1.78			
June					2.71	3.18	1.56	0.79	-0.16			
June					a	3.18	0.28	-1.04	-2.95	-6.02		
July						2.25	-0.63	-1.32	-2.79	-5.32		

^aSee Appendix Table 7 for dates indicating the adjustment to the next futures month for calculating the "nearby" basis.

Appendix

Table 2. Monthly average cotton basis for each futures trading month of the 1976-77 marketing year, Memphis, Tennessee.

Year and month	Futures contract month											
	1976		1977						1978			
	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
	----- cents per pound -----											
<u>1976</u>												
August	2.67	1.28	1.86	1.97	0.97							
September	2.86	2.54	3.28	3.96	3.10							
September	a	3.46	4.43	5.15	4.19	-2.15						
October		3.90	4.67	4.74	2.76	-5.81						
November		4.09	4.93	5.11	2.92	-5.37						
November		a	4.76	4.84	3.34	3.77	8.26					
December			4.07	4.69	4.31	-6.50	-5.57					
<u>1977</u>												
January			3.74	4.39	4.63	0.94	-2.15					
February			3.40	3.11	3.16	-0.98	-4.56					
February			a	3.43	3.40	0.68	-3.47	-3.15				
March				3.47	3.40	-0.60	-5.14	-4.83				
April				3.51	3.58	-0.89	-5.56	-5.04				
April				a	3.70	0.40	-3.51	-2.97	-2.57			
May					2.52	0.05	-3.50	-3.04	-2.54			
June					2.00	1.82	0.62	1.23	1.83			
June					a	1.80	0.17	0.58	1.00	1.69		
July						1.51	-0.02	0.53	1.08	1.76		

^aSee Appendix Table 7 for dates indicating the adjustment to the next futures month for calculating the "nearby" basis.

Appendix

Table 3. Monthly average cotton basis for each futures trading month of the 1977-78 marketing year, Memphis, Tennessee.

Year and month	Futures contract month											
	1977		1978					1979				
	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
	----- cents per pound -----											
<u>1977</u>												
August	1.67	1.76	2.62	3.22	3.95							
September	2.82	3.85	4.94	5.65	6.37							
September	a	3.46	4.49	5.10	5.56	5.29						
October		3.06	4.09	4.83	5.43	5.63						
November		2.57	3.41	4.15	4.95	5.80						
November		a	3.34	4.14	4.94	5.75	6.31					
December			3.66	4.49	5.30	6.30	7.04					
<u>1978</u>												
January			3.89	4.95	5.94	6.87	7.45					
February			3.71	4.89	5.95	7.02	7.35					
February			a	4.49	5.59	6.72	7.14	8.24				
March				3.03	4.22	5.78	6.17	7.24				
April				2.59	3.83	5.67	6.55	7.83				
April				a	3.37	5.27	6.25	7.45	8.07			
May					2.42	4.36	5.56	6.56	7.16			
June					1.90	4.36	5.79	6.90	7.56			
June					a	3.03	4.68	5.96	6.86	7.79		
July						2.32	4.22	5.80	6.77	7.76		

^a See Appendix Table 7 for dates indicating the adjustment to the next futures month for calculating the "nearby" basis.

Appendix

Table 4. Monthly average cotton basis for each futures trading month of the 1978-79 marketing year, Memphis, Tennessee.

Year and month	Futures contract month											
	1978			1979				1980				
	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
	----- cents per pound -----											
<u>1978</u>												
August	2.61	4.51	6.34	7.20	7.96							
September	2.98	5.22	7.38	8.23	8.47							
September	a	4.21	6.42	7.56	7.84	4.86						
October		3.73	6.19	7.40	7.63	3.43						
November		3.40	6.42	8.04	8.57	3.03						
November		a	5.95	7.71	8.07	2.23	0.49					
December			5.41	7.34	8.36	3.70	2.07					
<u>1979</u>												
January			4.74	6.85	8.43	4.85	2.86					
February			3.43	5.74	7.33	5.37	4.09					
February			a	4.47	6.51	5.51	4.53	6.00				
March				3.09	5.09	5.79	5.50	6.87				
April				1.54	3.23	4.78	4.78	6.18				
April				a	1.40	2.92	2.73	4.15	5.13			
May					0.17	1.49	0.94	1.81	2.72			
June					0.88	0.52	-1.02	-0.22	0.60			
June					a	1.94	0.77	1.30	2.21	3.11		
July						1.95	1.51	2.45	3.24	4.01		

^aSee Appendix Table 7 for dates indicating the adjustment to the next futures month for calculating the "nearby" basis.

Appendix

Table 5. Monthly average cotton basis for each futures trading month of the 1979-80 marketing year, Memphis, Tennessee.

Year and month	Futures contract month											
	1979		1980				1981					
	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
	----- cents per pound -----											
<u>1979</u>												
August	2.00	2.90	4.24	5.37	6.38							
September	2.03	3.25	5.00	6.40	7.49							
September	a	2.79	3.90	5.01	5.94	6.28						
October		2.73	3.39	4.48	5.60	6.15						
November		4.85	6.06	7.31	8.21	6.89						
November		a	6.00	7.68	8.91	7.92	7.58					
December			6.17	7.66	8.90	6.66	6.52					
<u>1980</u>												
January			7.65	6.05	7.03	3.27	1.21					
February			3.66	3.85	4.13	-2.16	-5.45					
February			a	3.21	3.23	-1.51	-4.67	-4.50				
March				2.06	1.13	-2.48	-5.79	-5.43				
April				0.79	-0.45	-4.27	-7.94	-7.30				
April				a	-1.70	-5.28	-7.38	-6.55				
May					-0.62	-3.59	-6.34	-5.38	-4.42			
June					0.48	-1.53	-2.42	-1.14	0.12			
June					a	0.04	-0.90	0.39	1.57	2.77		
July						0.00	-2.01	-1.57	-0.88	-0.34		

^aSee Appendix Table 7 for dates indicating the adjustment to the next futures month for calculating the "nearby" basis.

Appendix

Table 6. Monthly average cotton basis for each futures trading month of the 1980-81 marketing year, Memphis, Tennessee.

Year and month	Futures contract month											
	1980		1981					1982				
	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
	----- cents per pound -----											
<u>1980</u>												
August	2.00	0.13	0.22	0.34	0.39							
September	4.21	3.18	3.12	3.09	2.70							
September	a	4.88	5.81	5.97	5.76	0.54						
October		3.59	4.68	4.81	4.45	-0.99						
November		2.25	2.89	2.72	-1.17							
November		a	2.55	2.97	3.00	-1.56	-4.31					
December			4.82	5.35	5.09	-0.47	-3.62					
<u>1981</u>												
January			5.66	6.79	6.91	2.15	-1.03					
February			4.97	5.76	6.01	1.92	-1.10					
February			a	5.34	4.90	0.66	-2.66	-1.71				
March				5.00	5.45	2.87	0.13	0.84				
April				4.27	5.30	2.83	0.20	1.11				
April				a	4.50	2.21	-0.01	1.04	1.74			
May					4.33	1.94	0.15	1.66	2.35			
June					3.48	0.24	-1.54	-0.08	1.20			
June					a	0.50	-1.36	0.03	1.29	2.79		
July						2.10	1.90	3.55	5.06	6.43		

^aSee Appendix Table 7 for dates indicating the adjustment to the next futures month for calculating the "nearby" basis.

Appendix

Table 7. Five pivotal dates in each cotton crop year that indicate the appropriate time to switch to the next futures contract month in the calculation of the "nearby" basis for bale cotton at Memphis, Tennessee.

Calender month	Futures contract month	Pivotal dates month	Crop Year						
			75-76	76-77	77-78	78-79	79-80	80-81 ^a	81-82
			-----day of month-----						
August	October								
September	October	Sept. _____	17	15	21	20	19	16	16
September	December	Sept. _____	18	16	22	21	20	17	17
October	December								
November	December	Nov. _____	19	17	16	15	21	13	13
November	March	Nov. _____	20	18	17	16	22	14	14
December	March								
January	March								
February	March	Feb. _____	18	16	15	21	20	12	11
February	May	Feb. _____	19	17	16	22	21	13	12
March	May								
April	May	Apr. _____	21	20	19	18	16	15	16
April	July	Apr. _____	22	21	20	19	17	16	17
May	July								
June	July	June _____	16	22	21	20	18	16	15
June	October	June _____	17	23	22	21	19	17	16
July	October								

^aBeginning with the 1980-81 crop year, the switch to the next futures month was made five working days before the first notice day.