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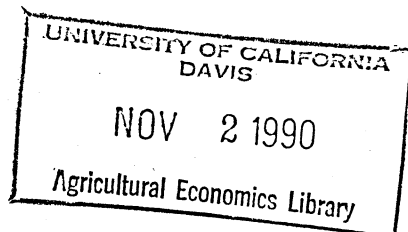
Cotton trade

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U.S. COTTON MARKETING LOAN PROGRAM AND
THE COMPETITIVENESS OF U.S. COTTON
EXPORTS

Carol E. Bray and Charles Bausell

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MARKETING LOAN PROGRAMS AND THE
COMPETITIVENESS OF U.S. COTTON EXPORTS

Carol Bray and Charles Bausell¹

The U.S. upland cotton program was authorized by the Food Security Act of 1985 to cover crop years 1986/87 to 1990/91. The major objectives of the program were to keep U.S. ending stocks at close to 4 million bales, protect cotton farm income, and make U.S. cotton price competitive on world markets. The Acreage Reduction Program (ARP) was used to control production, and cotton farmer income was protected through the target price and the loan rate. The marketing loan (ML) was the tool developed to keep U.S. cotton exports competitive on world markets (3).

The cotton marketing loan program offers a potential subsidy to farmers based on the Adjusted World Price (AWP) and its relationship to the loan rate. The AWP is intended to represent the average world price adjusted to U.S. location and quality. Whenever the AWP is below the loan rate, producers repay their cotton loans at the AWP, otherwise producers repay their loans at the loan rate plus carrying charges (1, pp.16-17).

Prior to the development of the marketing loan, U.S. producers could only pay back their cotton loans at the loan rate.

¹ Senior Economist and Assistant Director respectively, U.S. General Accounting Office. The views expressed in this paper are those of the authors and not necessarily those of the GAO.

Therefore, the U.S. loan rate represented the minimum price for U.S. cotton. It became the floor price on both the domestic and the international markets for U.S. cotton (2, p.34). Unsold cotton was accumulated by the government. By allowing producers to redeem cotton at the AWP, when world prices were below the loan rate, it was believed that the AWP would replace the loan rate as the floor price for cotton. Since the AWP was linked to the world price, U.S. cotton should have been more competitive in the export market.

In the first year of the program, cotton exports rose dramatically, from the unusually low 2.0 million bales recorded in 1985/86 to 6.7 million bales in 1986/87. Ending stocks dropped from 9.4 in 1985/86 to 5.0 million bales in 1986/87 (4, pp.52-53). These developments were taken as evidence that the program appeared to be accomplishing its major objectives. In 1987/88 however, the price of U.S. cotton began to increase relative to the average for the world market (2, pp.35-36). By the end of 1988/89 exports were down and ending stocks were 7 million bales, the highest level experienced under the program (4, pp.52-53). It looked as though the program was no longer working.

This study explains why U.S. cotton was not competitive on the world market under the cotton marketing loan program in 1987/88 and 1988/89. The problems with the marketing loan are revealed from analysis of price relationships on the international and domestic cotton market. The first section describes the relationship between the price of U.S. cotton sold on the world market and the average world market price. The second section discusses the

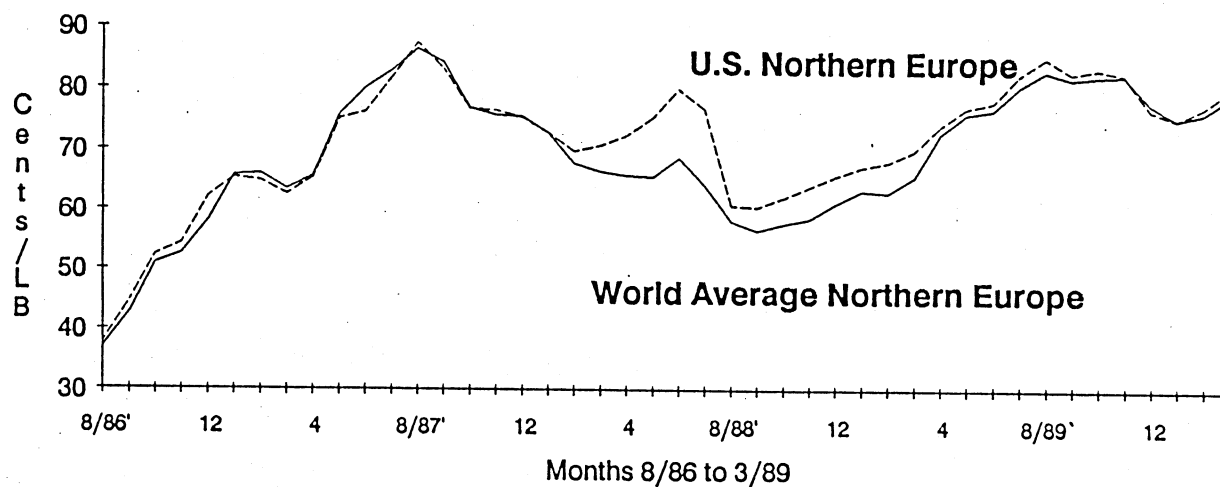
relationship between U.S. spot prices, the AWP and the loan rate on the domestic market. The third and fourth sections discuss the influence of the loan rate on producer price expectations, and shows how U.S. domestic prices were maintained above world market prices.

U.S. COTTON ON THE WORLD MARKET

Graph 1 illustrates price relationships between U.S. cotton and the world market price during the period August 1986 through March 1990 (latest data available at the time of analysis.) Both the prices shown are world cotton prices and represent the same cotton quality. The World Average Northern European price (NE) is the average of the 5 lowest priced cotton growths sold on the world market. The U.S. Northern Europe price is the Memphis Territory quote.

The graph shows that from August 1986 to February 1988, the price of U.S. cotton closely followed the average for the world market. In February 1988, however, the price of U.S. cotton moved significantly higher than the world average and remained higher through March 1989. During this period U.S. cotton was less competitive on the world market. Exports declined 6% from 6.7 million bales in 1986/87 to 6.3 million bales in 1988/89. Ending stocks increased 42% from 5 to 7.1 million bales from 1986/87 to 1988/89 (4, pp.52-53).

**Graph 1: RELATIONSHIP BETWEEN U.S. AND WORLD
AVERAGE PRICES IN NORTHERN EUROPE**



U.S. COTTON ON THE DOMESTIC MARKET

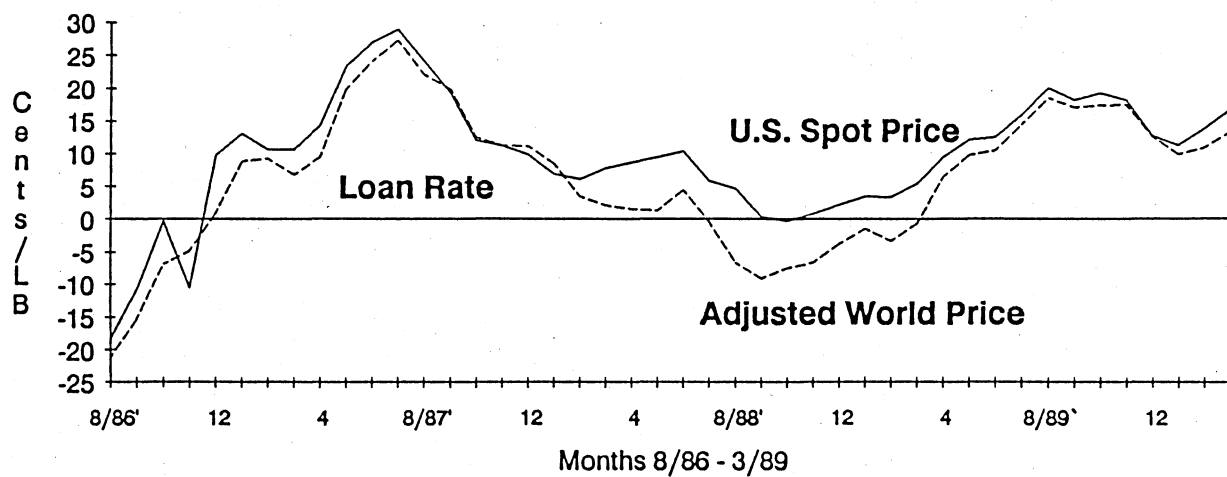
Graph 2 shows relationships between the U.S. spot price and the AWP for the period August 1986 through March 1990. The prices shown here are the U.S. spot price and the AWP.² The data represent the difference between each price and the loan rate. Therefore, zero represents the effective loan rate.

The graph shows that the divergence between U.S. and world prices that appeared on the world market from February 1988 through March 1989 also appeared on the domestic market. The price divergence occurred as the AWP approached and fell below the loan rate. From February through June 1988, the AWP was above the loan rate. During this period, producers could repay their loans at the loan rate plus the costs which accrued while the cotton was being stored (carrying charges). From July 1988 through March 1989, the AWP was below the loan rate therefore, producers could redeem their loans at the AWP (carrying charges were paid by the government).

During both periods, U.S. cotton would have remained price competitive on world markets if producers redeemed their cotton and sold at prices close to the AWP. Under these conditions U.S. spot prices would have been equal to the AWP. This did not happen from February 1988 through March 1989. The following discussion explains why U.S. spot prices did not move with world prices during this period.

² Both prices represent the same quality and location.

GRAPH 2: PRICE RELATIONSHIP BETWEEN U.S. SPOT PRICE, AWP, AND LOAN RATE



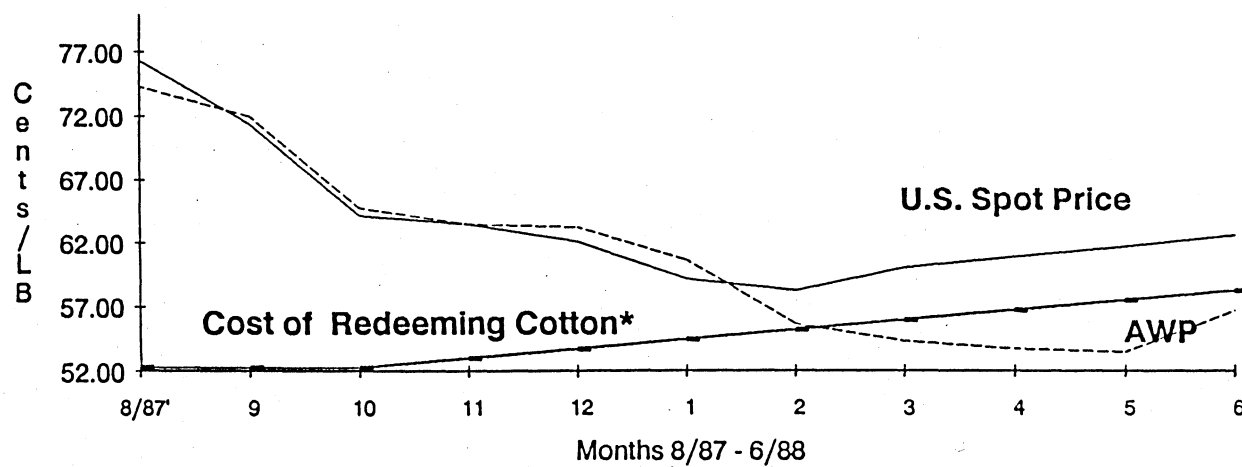
LOAN RATES, CARRY CHARGES, AND PRODUCER EQUITY

Graph 3, which covers the period August 1987 through June 1988, shows the relationship between monthly U.S. spot prices, the AWP and estimated producers' costs of paying back their cotton loans on the 1987 crop. The estimated costs of loan redemption equalled the loan rate plus carrying charges. It was assumed that producers put cotton in storage in October, (about mid-way through the harvest period). Carrying charges were estimated at 0.75/cents/bale/month (5, p.7).

The graph shows that by February 1988, it cost producers more to redeem their loan than they could receive for the cotton if they sold at prices close to the AWP. United States spot prices, therefore, stopped reflecting world prices and started to reflect domestic costs of redeeming cotton plus an additional producer's marketing margin ("producer equity" is the term used by the industry).³ While the AWP continued to drop, domestic prices rose in each successive month by the cost of storage. The floor for domestic prices was determined by the loan rate, carry charges and producer equity. During this period producers were not interested in redeeming their cotton and selling at prices close to the AWP because it cost them more to redeem the cotton than they would receive by selling it on the world market (AWP).

³ Producer equity can be thought of as the minimum profit above the cost of redeeming the loan necessary to induce the producer to take cotton out of loan. (5, p.7)

Graph 3: PRICE RELATIONSHIP BETWEEN U.S. SPOT PRICE, AWP, AND THE COST OF REDEEMING COTTON



* Cost of redeeming cotton = loan rate (52 cents/lb.) + carrying charges (0.75 cents/lb./mo.)

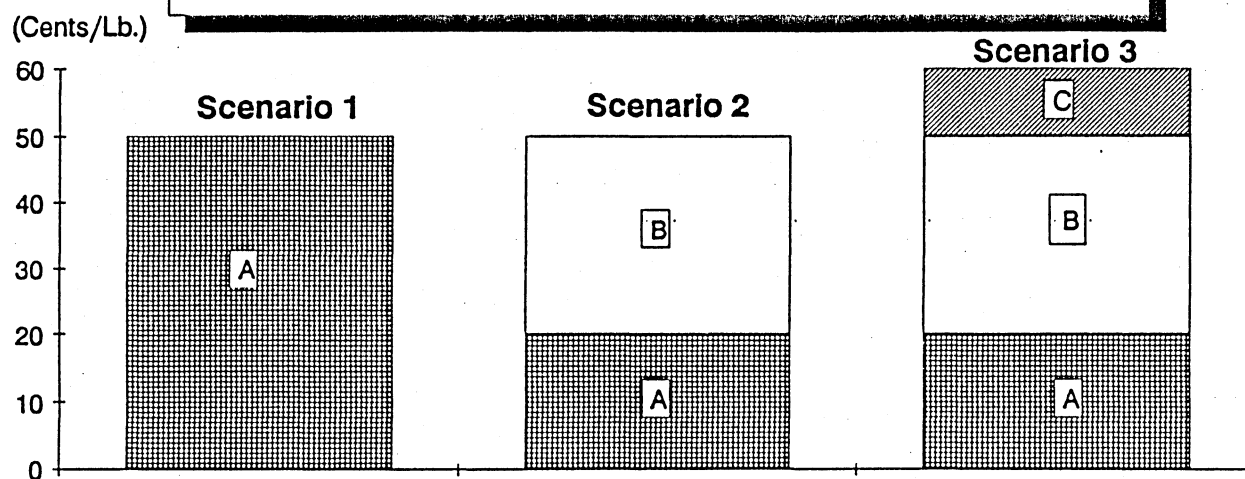
When the AWP dropped below the loan rate, in July 1988, producers could redeem their loans at the AWP, which was less than the loan rate. In addition, after August 22, they no longer had to pay accrued storage costs. Despite these reductions in the costs of redeeming cotton loans, U.S. spot prices remained above the AWP. The marketing loan still did not provide producers with an incentive to redeem their loans and market cotton at prices close to the AWP.

Producer incentives when the AWP is below the loan rate are illustrated in the three scenarios depicted in Graph 4. Scenario 1 shows the price producers would receive if they kept cotton under loan and/or forfeited the cotton to the government. Under this scenario they would receive the loan rate from the Government.

Scenario 2 shows the price producers would receive if they redeemed cotton and sold it for the AWP. Under this scenario they would receive the difference between the loan rate and the AWP, shown as area A in the graph, as a payment from the government. It would cost them area B (the AWP) to redeem the loan and they would receive a price equal to area B (the AWP) by selling the cotton on the world market. The combination of these two payments equals the loan rate. Under these conditions, producers are indifferent between 1) redeeming their cotton loans and selling at the AWP and 2) leaving the cotton with the government.

Scenario 3, shows the payment producers receive if they redeem the loan and sell it for a price greater than the AWP. Under this scenario they receive an amount equal to the difference between the loan rate and the AWP, shown as area A, from the government. In

Graph 4: PRODUCER INCENTIVES WHEN THE AWP IS BELOW THE LOAN RATE



addition, it costs producers area B (the AWP) to redeem the loan but they receive B+C from the market for a total price of A+B+C. This total price is greater than the loan rate by area C. Area C, therefore, represents the minimum profit above the cost of redeeming the loan which gives producers a price greater than the loan rate and incentive to take cotton out of loan. Area C, represents the producer marketing margin called producer equity. It is the same producer equity identified as affecting domestic prices during the February through June 1988 period.

Cotton traded from July 1988 through March 1989 sold at premium to the AWP (as illustrated in scenario 3), domestic prices were higher than the AWP, and U.S. cotton was less competitive on the world market. This scenario was possible because the government accumulated stocks. Scenario 3 demonstrates that the loan rate played a role in setting U.S. floor prices by influencing producer's price expectations.

POLICY IMPLICATIONS

As long as producers have the option of leaving cotton with the government under loan, the cost of redeeming the loan determines the domestic floor price. An additional margin is necessary to provide producers an incentive to take cotton out of loan. This positive margin applies whether the AWP is above the loan rate (with the cost of redeeming the loan based on the loan rate) or below the loan rate (with the cost of redeeming the loan based on the AWP).

The existence of this positive minimum margin means that U.S. floor prices will be higher than the rate at which loans can be redeemed. If the loan redemption rate is set equal to the world price, U.S. floor prices will generally be greater than the world price.

In order to keep U.S. cotton competitive on the world market it is necessary to assure that U.S. domestic prices stay close to the world market average.

CONCLUSION

The U.S. loan redemption rate, storage costs and producer equity are major determinants of U.S. domestic prices. Even if the loan redemption rate is set lower than the loan rate as in the case of the marketing loan, producers still have the option of leaving cotton with the government in exchange for the loan rate. For this reason, the loan rate affects producers price expectations and is reflected in domestic prices through producer equity. Producer equity represents the additional amount producers have to receive above the cost of redeeming the loan which gives them a total price greater than the loan rate. Producer equity has the effect of keeping domestic prices above world prices particularly if the loan redemption rate is set at the world price.

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GLOSSARY

World Average Northern Europe: As used by USDA and the cotton industry, it is the average of the five lowest quoted prices for cotton delivered to Northern Europe from various exporting countries.

U.S. Northern Europe: Quoted price of U.S. grown, (Memphis Territory) cotton delivered in Northern Europe.

Adjusted World Price: The world average northern europe price adjusted to U.S. quality and location. It is a reference price administered by the USDA. The AWP in relation to the loan rate determines whether producers can redeem their loans at the loan rate or the AWP.

U.S. Spot Price: The average quoted price for cotton in seven U.S. geographical areas as designated by the Secretary of Agriculture.