**Profitable Marketing Strategies for Mississippi Soybeans – Final Report**

 **Project No. 57-2024**

**William E. Maples** wem87@msstate.edu

**Background**

Approximately 5% of small producers and 27% of large producers utilize futures contracts to market their grain (USDA-ERS, 2020). Additionally, in 2016, around 150,000 US farms used forward marketing contracts with their local elevators (MacDonald, 2020). Futures and forward contracts are useful tools for locking in prices for grain before harvest or for stored grain after harvest. In Mississippi, over 2 million acres of soybeans were harvested in 2024, resulting in the production of more than 127 million total bushels across over 2,900 farms (MS Dept. of Ag & Commerce, 2024). Over 79% of Mississippi’s total soybean production for 2023 was in the Delta region (MSPB, 2024). A modest increase in the price received by soybean producers through improved marketing can have a substantial financial impact.

In this study, various pre-harvest and post-harvest marketing strategies for Greenwood and Greenville soybeans are examined. This research aims to determine the profitability of various strategies through both routine and systematic means. Routine strategies are based on a strict time schedule, whereas systematic strategies involve actively observing the market on a day-to-day basis and making sales based on current market prices. Marketing is important but often overlooked, and emotionally driven decisions combined with the near-infinite number of possible market decisions often make this task overwhelming and difficult for producers. The primary objective of this study is to provide producers with concrete information that can be used to combat emotionally driven marketing and enhance the profitability of their soybean operations.

For all price data, historical futures prices were obtained from Barchart, and historical cash prices were sourced from the USDA-AMS Mississippi Grains Report Archive (Mississippi Daily Grains, 2008-2023). Greenwood and Greenville were selected as the two representative locations due to the availability of cash price data from AMS. For purposes of this study, producers are assumed to use futures hedging as their primary risk management strategy. The use of futures was chosen primarily due to the availability of data, as a historical time series of forward contract prices for Mississippi does not exist. Study results, though, can be extrapolated to other risk management tools.

**Pre-Harvest Strategies**

The pre-harvest period is defined as the window between the January preceding planting and harvest time, which typically occurs in the 40th week of the year, corresponding to late September or early October. Based on the strategy being implemented, the producer can begin marketing on January 1st or wait until the final day before harvest. In all of these strategies, 20% of yield is sold at harvest. There are four pre-harvest strategies, and they are as follows:

1. Harvest: 100% of bushels are sold at the harvest cash price; the control group
2. Target: The producer sells in 20% increments at four price targets for each period. If a higher target is reached before a lower target, the producer will sell all bushels up to that target; higher targets override lower targets. The remaining 20% is sold at the cash price.
3. MAMJ: The producer sells in 20% increments at four specific times, the first week of March, April, May, and June, respectively, as long as the price is above their breakeven price
4. Target-Time Hybrid: a mix of the Target and MAMJ strategy, where the producer sells at the 20% increments if they haven’t hit one of their pricing targets by that date

For the target strategy, pricing targets are derived from a certain percentage above the break-even cost, which is simply the cost of production per acre divided by the expected yield per acre (Mississippi State Extension). The four targets are breakeven, followed by 10%, 20%, and 30% above breakeven, respectively.

The results of these strategies for Greenwood, MS, can be found in Table 1. Aside from 2012, the cash market strategy performed the lowest with an average price of $10.39/bu and the timed March-June strategy performed with the highest average price of $10.76/bu. As for consistency, the hybrid strategy had the lowest standard deviation at $1.32/bu, while the cash market strategy had the highest at $1.94/bu. The cash market strategy also had the lowest minimum received price out of the four strategies, coming in at $7.68/bu.

The results of these strategies for Greenville, MS, are presented in Table 2. Again, aside from 2012, the cash market strategy yielded the lowest average price of $10.67/bu. The dominant strategy was the same as Greenwood, and the timed March-June incremental sales strategy resulted in the highest average price of $11.03/bu. The hybrid strategy had the lowest standard deviation of $1.26/bu, and the cash market strategy had the highest at $1.90/bu. Similar to Greenwood, the cash market strategy also had the lowest minimum price, coming in at $7.98/bu.

**Post-Harvest Strategies**

 The post-harvest period in this report refers to the 12-month period after harvest. In all four of the post-harvest strategies outlined, 20% of production is sold immediately at the harvest cash market price due to the likelihood that producers do not have enough on-farm storage for 100% of their crop. The strategies are examined for two different post-harvest sale periods: January (week 2) and May (week 19). The strategies are:

1. Harvest: 100% of bushels are sold at the harvest cash price; the control group
2. Cash: bushels are sold at the cash price during the sale period.
3. Carry or Store: if the market carry is greater than 120% of interest costs, sell the carry; if not, store until cash market sale
4. Carry or Harvest: if the market carry is greater than 120% of interest costs, sell the carry; if not, sell 100% of bushels at harvest
5. Next Harvest: holding too long until week 40 of the following year and selling straight in the cash market.

Interest costs are factored into every strategy except for the first cash strategy. They are derived by multiplying the Quarter 1 interest rate of the crop year times the harvest cash price, representing an opportunity cost of holding grain.

The January and May post-harvest strategy results for Greenwood, MS, can be found in Tables 3 and 4, respectively. The highest-performing January strategy was selling at the January cash price with an average price of $11.11/bu, and the highest-performing May strategy was the “carry or store” strategy with an average price of $11.16/bu. The lowest-performing January strategy was the “carry or harvest” strategy, with an average price of $10.55/bu, and the lowest-performing May strategy was also the “carry or harvest” strategy, with an average price of $10.45/bu. Overall, the lowest-performing strategy was the “next harvest” strategy, with an average price of $9.77/bu. For both January and May, the “carry or harvest” strategy had the lowest standard deviation ($1.87/bu and $1.97/bu, respectively), and the “carry or store” strategy had the highest standard deviation ($2.11/bu and $2.50/bu respectively). The overall dominant post-harvest strategy was the May “carry or store” with an average price of $11.16/bu.

The post-harvest strategy results for Greenville, MS., can be found in Tables 5 and 6, respectively. The highest-performing January strategy was the “carry or store” strategy, with an average price of $11.43/bu, and the highest-performing May strategy was the cash market strategy, coincidentally with the same average price of $11.43/bu. The lowest-performing January strategy was the “carry or harvest” strategy, with an average price of $10.81/bu, and the lowest-performing May strategy was also the “carry or harvest” strategy, with an average price of $10.64/bu. Overall, the lowest-performing strategy was the “next harvest” strategy, with an average price of $10.02/bu. For both January and May, the “carry or harvest” strategy had the lowest standard deviation ($1.86/bu and $1.95/bu, respectively), and the “carry or store” strategy had the highest standard deviation ($2.08/bu and $2.51/bu respectively). The overall dominant post-harvest strategy was both the January “carry or store” and the May cash tying with an average price of $11.43/bu.

**Benefits to Producers**

 This report provides a comprehensive overview of several basic and easy-to-follow strategies. The key benefit of this project is that it demonstrates to producers how they can benefit from a straightforward marketing plan. By setting decision dates and price targets, a producer can create a simple plan that increases their average final price over time. Over the sixteen years examined in this study, it was consistently demonstrated that relying solely on cash sales was the least effective strategy. The strategies discussed in this study can serve as a starting point for producers who currently do not have a marketing plan in place.

**End Products**

Findings from this study will be incorporated into two publications by the Mississippi State University Extension Service. The first publication will focus on developing pre-harvest marketing strategies, and the second will focus on post-harvest marketing strategies. These publications are currently being drafted.

**Tables**

Table 1. Pre-Harvest Marketing Results ($/bu) for Greenwood, MS.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Crop Year | Harvest | Target | MAMJ | Hybrid |
| 2008 | 9.29 | 10.17 | 11.36 | 10.17 |
| 2009 | 9.00 | 9.68 | 9.17 | 9.68 |
| 2010 | 10.57 | 10.06 | 9.33 | 10.06 |
| 2011 | 10.93 | 11.90 | 12.43 | 11.90 |
| 2012 | 15.15 | 12.46 | 13.43 | 12.46 |
| 2013 | 13.18 | 13.26 | 13.01 | 13.26 |
| 2014 | 8.86 | 10.59 | 11.16 | 10.59 |
| 2015 | 8.89 | 9.67 | 9.45 | 9.74 |
| 2016 | 9.34 | 9.56 | 9.67 | 10.09 |
| 2017 | 8.95 | 9.08 | 8.98 | 8.98 |
| 2018 | 7.68 | 8.26 | 8.99 | 9.01 |
| 2019 | 8.58 | 8.58 | 8.51 | 8.58 |
| 2020 | 10.06 | 10.06 | 8.96 | 9.99 |
| 2021 | 11.85 | 11.14 | 12.67 | 11.07 |
| 2022 | 12.37 | 11.83 | 13.34 | 11.83 |
| 2023 | 11.61 | 11.84 | 11.67 | 12.03 |
| **Avg** | **10.39** | **10.51** | **10.76** | **10.59** |
| Min | 7.68 | 8.26 | 8.51 | 8.58 |
| Max | 15.15 | 13.26 | 13.43 | 13.26 |
| Median | 9.70 | 10.11 | 10.42 | 10.13 |
| Stdev | 1.94 | 1.39 | 1.75 | 1.32 |

Table 2. Pre-Harvest Marketing Results ($/bu) for Greenville, MS.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Crop Year | Harvest | Target | MAMJ | Hybrid |
| 2008 | 9.54 | 10.42 | 11.61 | 10.42 |
| 2009 | 9.25 | 9.88 | 9.42 | 9.88 |
| 2010 | 10.82 | 10.31 | 9.58 | 10.31 |
| 2011 | 11.18 | 12.15 | 12.68 | 12.15 |
| 2012 | 15.40 | 12.71 | 13.68 | 12.71 |
| 2013 | 12.98 | 13.06 | 12.81 | 13.06 |
| 2014 | 9.17 | 10.91 | 11.48 | 10.91 |
| 2015 | 9.11 | 9.89 | 9.67 | 10.40 |
| 2016 | 9.64 | 10.16 | 9.97 | 10.52 |
| 2017 | 9.25 | 9.39 | 9.28 | 9.38 |
| 2018 | 7.98 | 8.51 | 9.29 | 9.12 |
| 2019 | 8.95 | 9.01 | 8.87 | 9.01 |
| 2020 | 10.40 | 10.33 | 9.30 | 10.33 |
| 2021 | 12.15 | 11.37 | 12.97 | 11.37 |
| 2022 | 12.82 | 12.28 | 13.79 | 12.28 |
| 2023 | 12.06 | 12.53 | 12.12 | 12.48 |
| **Avg** | **10.67** | **10.81** | **11.03** | **10.90** |
| Min | 7.98 | 8.51 | 8.87 | 9.01 |
| Max | 15.40 | 13.06 | 13.79 | 13.06 |
| Median | 10.02 | 10.37 | 10.72 | 10.47 |
| Stdev | 1.90 | 1.35 | 1.72 | 1.26 |

Table 3. January Post-Harvest Marketing Results ($/bu) for Greenwood, MS.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop Year | Harvest | Cash | Carry or Store | Carry or Harvest | Next Harvest |
| 2008 | 9.29 | 9.43 | 10.14 | 10.14 | 8.26 |
| 2009 | 9.00 | 9.18 | 9.18 | 9.00 | 9.92 |
| 2010 | 10.57 | 12.95 | 12.95 | 10.57 | 10.17 |
| 2011 | 10.93 | 11.51 | 11.51 | 10.93 | 14.39 |
| 2012 | 15.15 | 14.12 | 14.12 | 15.15 | 12.18 |
| 2013 | 13.18 | 13.02 | 13.02 | 13.18 | 8.00 |
| 2014 | 8.86 | 10.00 | 9.19 | 9.19 | 8.33 |
| 2015 | 8.89 | 8.71 | 8.71 | 8.89 | 8.79 |
| 2016 | 9.34 | 9.66 | 9.66 | 9.34 | 8.38 |
| 2017 | 8.95 | 9.13 | 9.33 | 9.33 | 7.13 |
| 2018 | 7.68 | 8.39 | 7.92 | 7.92 | 8.08 |
| 2019 | 8.58 | 9.01 | 8.83 | 8.83 | 9.45 |
| 2020 | 10.06 | 13.17 | 13.17 | 10.06 | 11.20 |
| 2021 | 11.85 | 13.15 | 13.15 | 11.85 | 11.68 |
| 2022 | 12.37 | 14.43 | 14.43 | 12.37 | 10.91 |
| 2023 | 11.61 | 11.86 | 12.13 | 12.13 | 9.46 |
| **Avg** | **10.39** | **11.11** | **11.09** | **10.55** | **9.77** |
| Min | 7.68 | 8.39 | 7.92 | 7.92 | 7.13 |
| Max | 15.15 | 14.43 | 14.43 | 15.15 | 14.39 |
| Median | 9.70 | 10.75 | 10.82 | 10.10 | 9.45 |
| Stdev | 1.94 | 2.06 | 2.11 | 1.87 | 1.85 |

Table 4. May Post-Harvest Marketing Results ($/bu) for Greenwood, MS.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop Year | Harvest | Cash | Carry or Store | Carry or Harvest | Next Harvest |
| 2008 | 9.29 | 10.12 | 10.68 | 10.68 | 8.26 |
| 2009 | 9.00 | 8.33 | 8.33 | 9.00 | 9.92 |
| 2010 | 10.57 | 12.23 | 12.23 | 10.57 | 10.17 |
| 2011 | 10.93 | 13.29 | 13.29 | 10.93 | 14.39 |
| 2012 | 15.15 | 14.03 | 14.03 | 15.15 | 12.18 |
| 2013 | 13.18 | 13.72 | 13.72 | 13.18 | 8.00 |
| 2014 | 8.86 | 9.21 | 9.21 | 8.86 | 8.33 |
| 2015 | 8.89 | 9.73 | 9.73 | 8.89 | 8.79 |
| 2016 | 9.34 | 8.97 | 8.97 | 9.34 | 8.38 |
| 2017 | 8.95 | 9.19 | 9.19 | 8.95 | 7.13 |
| 2018 | 7.68 | 7.40 | 7.13 | 7.13 | 8.08 |
| 2019 | 8.58 | 8.08 | 8.08 | 8.58 | 9.45 |
| 2020 | 10.06 | 14.67 | 14.67 | 10.06 | 11.20 |
| 2021 | 11.85 | 15.06 | 15.06 | 11.85 | 11.68 |
| 2022 | 12.37 | 13.13 | 13.13 | 12.37 | 10.91 |
| 2023 | 11.61 | 11.10 | 11.10 | 11.61 | 9.46 |
| **Avg** | **10.39** | **11.14** | **11.16** | **10.45** | **9.77** |
| Min | 7.68 | 7.40 | 7.13 | 7.13 | 7.13 |
| Max | 15.15 | 15.06 | 15.06 | 15.15 | 14.39 |
| Median | 9.70 | 10.61 | 10.89 | 10.31 | 9.45 |
| Stdev | 1.94 | 2.49 | 2.50 | 1.97 | 1.85 |

Table 5. January Post-Harvest Marketing Results ($/bu) for Greenville, MS.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop Year | Harvest | Cash | Carry or Store | Carry or Harvest | Next Harvest |
| 2008 | 9.54 | 10.36 | 10.36 | 9.54 | 8.49 |
| 2009 | 9.25 | 8.57 | 8.57 | 9.25 | 10.15 |
| 2010 | 10.82 | 12.38 | 12.38 | 10.82 | 10.40 |
| 2011 | 11.18 | 13.53 | 13.53 | 11.18 | 14.62 |
| 2012 | 15.40 | 14.27 | 14.27 | 15.40 | 11.96 |
| 2013 | 12.98 | 13.88 | 13.88 | 12.98 | 8.32 |
| 2014 | 9.17 | 9.54 | 9.54 | 9.17 | 8.53 |
| 2015 | 9.11 | 9.94 | 9.94 | 9.11 | 9.08 |
| 2016 | 9.64 | 9.26 | 9.26 | 9.64 | 8.66 |
| 2017 | 9.25 | 9.48 | 9.48 | 9.25 | 7.41 |
| 2018 | 7.98 | 7.74 | 7.46 | 7.46 | 8.43 |
| 2019 | 8.95 | 8.39 | 8.39 | 8.95 | 9.76 |
| 2020 | 10.40 | 14.96 | 14.96 | 10.40 | 11.47 |
| 2021 | 12.15 | 15.43 | 15.43 | 12.15 | 12.12 |
| 2022 | 12.82 | 13.57 | 13.57 | 12.82 | 11.34 |
| 2023 | 12.06 | 11.53 | 11.53 | 12.06 | 9.64 |
| **Avg** | **10.67** | **11.43** | **11.41** | **10.64** | **10.02** |
| Min | 7.98 | 7.74 | 7.46 | 7.46 | 7.41 |
| Max | 15.40 | 15.43 | 15.43 | 15.40 | 14.62 |
| Median | 10.02 | 10.94 | 10.94 | 10.02 | 9.70 |
| Stdev | 1.90 | 2.49 | 2.51 | 1.95 | 1.82 |

Table 6. May Post-Harvest Marketing Results ($/bu) for Greenville, MS.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop Year | Harvest | Cash | Carry or Store | Carry or Harvest | Next Harvest |
| 2008 | 9.54 | 9.68 | 10.38 | 10.38 | 8.49 |
| 2009 | 9.25 | 9.42 | 9.42 | 9.25 | 10.15 |
| 2010 | 10.82 | 13.18 | 13.18 | 10.82 | 10.40 |
| 2011 | 11.18 | 11.75 | 11.75 | 11.18 | 14.62 |
| 2012 | 15.40 | 14.36 | 14.36 | 15.40 | 11.96 |
| 2013 | 12.98 | 13.16 | 13.16 | 12.98 | 8.32 |
| 2014 | 9.17 | 10.34 | 10.34 | 9.17 | 8.53 |
| 2015 | 9.11 | 8.92 | 8.92 | 9.11 | 9.08 |
| 2016 | 9.64 | 9.96 | 9.96 | 9.64 | 8.66 |
| 2017 | 9.25 | 9.43 | 9.62 | 9.62 | 7.41 |
| 2018 | 7.98 | 8.71 | 8.24 | 8.24 | 8.43 |
| 2019 | 8.95 | 9.34 | 9.17 | 9.17 | 9.76 |
| 2020 | 10.40 | 13.47 | 13.47 | 10.40 | 11.47 |
| 2021 | 12.15 | 13.44 | 13.44 | 12.15 | 12.12 |
| 2022 | 12.82 | 14.87 | 14.87 | 12.82 | 11.34 |
| 2023 | 12.06 | 12.30 | 12.57 | 12.57 | 9.64 |
| **Avg** | **10.67** | **11.40** | **11.43** | **10.81** | **10.02** |
| Min | 7.98 | 8.71 | 8.24 | 8.24 | 7.41 |
| Max | 15.40 | 14.87 | 14.87 | 15.40 | 14.62 |
| Median | 10.02 | 11.05 | 11.07 | 10.39 | 9.70 |
| Stdev | 1.90 | 2.06 | 2.08 | 1.86 | 1.82 |

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