Is Hedging Ghana's Cocoa Export Revenue Risk Beneficial?

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This paper assesses the usefulness of risk hedging on futures markets for Ghana as a cocoa exporter subject to concurrent price and output (revenue) risks. Ghana was chosen for analysis because it is the world's second largest exporter of cocoa beans and its cocoa industry has performed strongly in the last decade. Using recent cash and futures price data, the cocoa exporter's utility maximization problem (UMP) is solved using a Constant Relative Risk Aversion (CRRA) utility function which displays risk vulnerability. Simulation results indicate that production risk drives the optimal hedge ratio well below unity for all values of the risk parameter. When transaction costs are incorporated, into the hedger's UMP, optimal hedge ratios decline further for reasonable values of the risk parameter. Importantly, however, optimal hedge ratios remain positive. The findings indicate that limited use of the futures market is optimal for Ghana as a cocoa exporter. Hedging will smooth Ghana's export revenue risk leading to improved credit score for the country with corresponding low interest rates on leverage. Hedging cocoa export revenue risk will therefore improve the performance of Ghana's economy.