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## SELLING LOW AND BUYING HIGH: AN ARBITRAGE PUZZLE IN KENYAN VILLAGES

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### Abstract

Large and regular seasonal price fluctuations in local grain markets appear to offer African farmers substantial inter-temporal arbitrage opportunities, but these opportunities remain largely unexploited: small-scale farmers are commonly observed to “sell low and buy high” rather than the reverse. In a field experiment in Kenya, we show that credit market imperfections limit farmers’ abilities to move grain inter-temporally. Providing timely access to credit allows farmers to purchase at lower prices and sell at higher prices, increasing farm profits and generating a return on investment of 28%. To understand general equilibrium effects of these changes in behavior, we vary the density of loan offers across locations. We document significant effects of the credit intervention on seasonal price fluctuations in local grain markets, and show that these GE effects greatly affect our individual level profitability estimates. We also find suggestive evidence that these GE effects generate benefits for program non-recipients, benefits which are unlikely to be recouped by a financial institution and suggest a potential role for public intervention. In contrast to existing experimental work, our results thus indicate a setting in which microcredit can improve firm profitability, and suggest that GE effects can substantially shape estimates of microcredit’s effectiveness. Failure to consider these GE effects could lead to substantial misestimates of the social welfare benefits of microcredit interventions.

**JEL codes:** D01, D04, G21, O13, O16, Q12

**Keywords:** storage; arbitrage; microcredit; credit constraints; agriculture

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# Selling low and buying high: An arbitrage puzzle in Kenyan villages

Large and regular seasonal price fluctuations in local grain markets appear to offer African farmers substantial inter-temporal arbitrage opportunities, but these opportunities remain largely unexploited: small-scale farmers are commonly observed to “sell low and buy high” rather than the reverse. In a field experiment in Kenya, we show that credit market imperfections limit farmers’ abilities to move grain inter-temporally. Providing timely access to credit allows farmers to purchase at lower prices and sell at higher prices, increasing farm profits and generating a return on investment of 28%. To understand general equilibrium

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