

## **Authors**

Marshall Burke Stanford University

Edward Miguel University of California, Berkeley Center for Effective Global Action (CEGA)

Lauren Bergquist Lauren Bergquist

NBER WORKING PAPER SERIES

SELL LOW AND BUY HIGH: ARBITRAGE AND LOCAL PRICE EFFECTS IN KENYAN MARKETS

> Marshall Burke Lauren Falcao Bergquist Edward Miguel

Working Paper 24476

NATIONAL BUREAU OF ECONOMIC RESEARCH 1050 Massachusetts Avenue Cambridge, MA 02138 April 2018

We thank Christopher Barrett, Kyle Emerick, Muroel Fafchamps, Susan Godlonton, Kelsey Jack, Jeremy Magrader, Nicholas Minot, and Dean Yang for useful discussions, and thank seminar participants at ASSA, BREAD, CSAE, IFPRI, Kellogg, Michigan, NEUDC, Northwestern, Stanford, PacDev, UC Berkeley, and the University of Chicago for useful comments. We also thank Peter LeFrancois, Ben Wekesa, and Innovations for Poverty Action for excellent research assistance in the field, and One Acre Fund for partnering with us in the intervention. We gratefully acknowledge funding from the Agricultural Technology Adoption Initiative and an anonymous donor. All errors are our own. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bareau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-swie used or been subject to the review by the NBER Board of Directors that accompanies official NEE mehication.

© 2018 by Marshall Burke, Lauren Falcao Bergquist, and Edward Miguel. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, it given to the source.

## Sell Low and Buy High: Arbitrage and Local Price Effects in Kenyan Markets

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 buy at lower prices and sell at higher prices, increasing farm revenues 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 shape individual level profitability estimates. In contrast to existing experimental work, the results indicate a setting in which microcredit can improve firm profitability, and suggest that GE effects can substantially shape microcredit's effectiveness. In particular, failure to consider these GE effects could lead to underestimates of the social welfare benefits of microcredit interventions.

April 24, 2018