

Final Progress Report
Sustainability Science Program, Harvard University
Term: September 1, 2009 – August 31, 2010
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Name: B. Kelsey Jack

Research Fields:

environmental economics, development economics, experimental economics

Degree program, institution and graduation date:

PhD, Public Policy, Harvard University, 2010

Faculty hosts at Harvard:

Christopher Avery (HKS), Nava Ashraf (HBS)

SSP-related Research Activity:

Title: Developing country markets in environment and health

Abstract: Markets organize decision making by efficiently allocating scarce resources and revealing the value of a good or service. Consequently, policy makers often seek to establish markets where they do not naturally exist, such as where externalities from individual decisions fall outside of existing markets. Competition among potential buyers and sellers and the information conveyed through prices will, in theory, improve individual decisions. While the theory is clear, empirical evidence on the performance of new markets and on the behavior of individuals in these markets remains scarce. Research on these topics offers implications for the growing number of markets used to achieve policy goals in developing countries and in settings where individual decisions create externalities, such as environment and health.

Problem identification:

Environment and health outcomes are underprovided because of market failures caused by externalities. Individual interests are poorly aligned with social interests in many cases. Creating markets to alter individual incentives can help address the problem, but many challenges face market designers, particularly for implementation in developing country settings. These challenges are observed in agricultural decision making that generates (positive or negative) environmental externalities and in health distribution systems that rely on volunteers or semi-volunteers to spread information and health technologies.

Key questions:

Do individuals respond to the incentives provided by market decisions? Are new market formats understood by inexperienced participants? How do individuals use the information provided within a market to shape their decisions? How well do standard theories predict individual behavior in new markets in environment and health?

Methods for answering questions:

I contribute to the empirical evidence on the question through the use of field experiments in developing countries. Randomly assigning individuals or communities to different treatments and measuring behavioral response provides causal evidence from a minimally artificial research setting. Data are collected through a variety of instruments including surveys, experimental games, and market behavior (auction bids, price acceptance, sales data, consumption data). Current project sites include Malawi, Zambia, Indonesia (concluding this year) and Bolivia.

Final products:

The research has produced three papers used in my dissertation for satisfaction of the PhD requirements in Public Policy at Harvard.

Relevant recommendations:

All three essays demonstrate the importance of market design for new programs aimed at creating incentives for externality generating behavior in developing countries. The findings of the research in Malawi suggest that mechanisms may trade off quality and quantity in their allocation of land use contracts under a limited budget. The choice of mechanism will therefore depend on the precise policy objective. The research in Indonesia suggests that market designs that offer participants a chance to learn will improve the performance of the market, from the policy maker's standpoint. Thus, designs that allow for repetition or incorporate explicit training are likely to be more successful in producing an efficient allocation. The research in Zambia shows that pricing choices in subsidized markets may affect demand through the quality signal sent by the price. Focusing consumer attention on the subsidy rather than the price may help leverage this quality inference process to help augment take up through the subsidy. These policy implications are all somewhat tentative, given the persistent challenges associated with generalizing findings from a single empirical study to other contexts.

Major intellectual advancement activities:

Collaboration with the Agricultural Technology Adoption Initiative at MIT. Initiation of new research projects.

Citations:

Jack, B.K. (2009) "Essays on Developing Country Markets in Environment and Health." Mimeo, Harvard University.

Grants or awards:

Harvard GSAS Dissertation Completion Grant (2009-10)
NSF grant for research in Zambia (graduate student stipend)
Harvard Environmental Economics Dissertation Prize (2010)

Principal collaborators outside of Harvard:

Nigel Asquith (Natura Bolivia)
Oriana Bandiera (LSE)
Juan-Camilo Cardenas (Universidad de los Andes)
Paul Ferraro (Georgia State)
Beria Leimona (ICRAF)
Jesse Shapiro (University of Chicago)
Emir Kamenica (University of Chicago)
Paulina Oliva (UCSB)
Raymond Guiteras (University of Maryland)
Rachel Glennerster (MIT)
Alain de Janvry (UC Berkeley)

New contact information:

Poverty Action Lab (J-PAL), MIT (2010-11)
Department of Economics, Tufts University (2011-)