Do clients get value from microinsurance?

A systematic review of recent and current research





MILK
Microinsurance Learning and Knowledge

MILK is a project of the MicroInsurance Centre

MICRO INSURANCE CENTRE

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Micro Insurance Centre

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March 2011

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I. Introduction

Long before formal insurance was invented, people developed a range of strategies and behaviors to cope with the risks of shocks and losses beyond their control. One way this was done was accumulating assets with stored value – land, animals, precious metals – which could be sold in times of need. Another strategy was to rely on family and social networks as a way of pooling risks. Another was for the king or landowner to waive debts of farmers who lost crops to weather.[1] Such mechanisms remained unchanged until the late 1600s with the onset of industrialization, urbanization, and large-scale international trade. Only then did insurance evolve into the formal contracts that replaced informal risk pooling. The insurance market has since grown to 4 trillion dollars in premiums worldwide[2], with a great variety of products.

Despite this evolution, insurance has yet to make a widespread impression on the lives of today's poor. Evidence from *Portfolios of the Poor* (Collins et al. 2009) and others (Dercon 2000, Dercon & Krishnan 2003, Fafchamps & Lund 2003, Kruk et al. 2009, Morduch 1995) shows that insurance plays only a small role in the lives of the poor. Instead, poor households use a variety of other strategies to cope with shocks – mainly informal risk pooling, formal and informal credit, and savings. Clarke and Dercon (2009) stress the importance of understanding how these different strategies affect one another. For example, a family's long-term ability to rise out of poverty can be encumbered by short-term coping measures like selling off productive assets, or taking children out of school and sending them into the labor force. Likewise, the depletion of savings to cope with one crisis can leave a family more vulnerable to future risks. Though many low income households are adept at managing risk without access to formal insurance products, these risk management strategies can be costly (such as credit), unreliable (such as friends and family), insufficient (such as state subsidies), or inefficient (such as avoiding risks which may also be potentially productive) (Gertler & Gruber 2002, Ligon 2002, Morduch 1995).

Microinsurance, by offering smaller and simpler products, often through non-traditional delivery channels, can give the poor access to formal insurance services. The nature of microinsurance products suggests that they should be effective in protecting the poor from shocks. However at this stage there is not enough evidence that proves that microinsurance offers better value to the poor than traditional risk strategies. This study reviews existing literature and ongoing studies on the value of insurance to poor clients. It aggregates and organizes the literature, summarizes its key findings and identifies its most significant gaps. This study is intended to inform the direction of new research on the topic by the MILK project.

[1] Hamurabbi's code (law 48) offers weather insurance to grain farmers that forgives their loans in the case of floods or drought.

[2] Plunkett Research, Ltd. (2010). Insurance industry overview. Retrieved from <http://www.plunkettresearch.com/Industries/Insurance/InsuranceStatistics/tabid/238/Default.aspx>

II. Methodology

a. Defining client value

We define client value as either direct or indirect, representing the added value - in comparison to other available risk coping mechanisms - of having insurance either when claims are made or as a result of the changed behavior caused by owning a policy and trusting that it will be honored (see breakdown in box). The definition emphasizes the economic benefits that individuals and their families gain from being insured relative to other alternatives to best understand how insurance can offer more effective ways to cope with risks than its alternatives.

Additionally, we have separated demand issues (e.g. determinants of take-up, renewal and satisfaction) in order to distinguish these issues from the factors that drive the actual value of microinsurance. Demand for microinsurance, much like any retail product (Sutherland, TEDGlobal 2009) can reflect value but is also is influenced by the way products are marketed, packaged, and serviced.

Components of client value

1. ***Expected value:*** **the value clients may get from a product through behavioral incentives and "peace of mind", even if claims are not made.**

2. ***Financial value:*** **the value of the product when claims are made compared with other coping strategies.**

3. ***Service quality value:*** **the externalities created by microinsurance providing access to product-related services of benefit to the client.**

b. Methodology

The landscape survey reviewed 179 studies: of these, about 35 are still in progress or planned, and the remaining 144 have been completed and published. Most of the studies are academic papers from universities and think tanks, and most of these look specifically at microinsurance programs. We also reviewed an extensive body of practitioner literature both on microinsurance and on other types of insurance and their marketing.

Some of the leaders in current thinking about the value of microinsurance are programs and networks such as the ILO's Microinsurance Innovation Facility, the Microinsurance Network, the Microinsurance Academy, the MicroInsurance Centre and other groups aimed at encouraging innovation, promotion and learning in microinsurance. While not academic institutions themselves, these organizations often link with academic initiatives to examine client value, as the methodology of the social sciences is well suited to this. Academic or research initiatives active in this area include the European Development Research Network (EUDN), the World Bank, the US-based Financial Access Initiative (FAI), and the US-based Innovations for Poverty Action (IPA) and Abdul Latif Jameel Poverty Action Lab (J-PAL) projects. Other groups, such as the International Food Policy Research Group (IFPR) and USAID's Partnerships for Health Reform Project, have been active in research into agricultural insurance and health insurance respectively.

Our analysis covered a variety of microinsurance products, including agricultural insurance, health insurance, credit life, life, and funeral insurance. We found that much work has been done on health insurance (93 studies, of which 83 focus on health microinsurance products). Agricultural insurance studies are less common, but are becoming a growing body of rigorous research (29 studies). Studies on other types of insurance are rare – for credit life, life, and accident insurance, we reviewed only seven studies in total.[3] We also reviewed studies analyzing other risk management tools, including formal and informal savings, credit, and cash transfers. Appendix 3 contains a matrix categorizing the studies we reviewed by the type of product, questions addressed, and main results, followed by an annotated bibliography (Appendix 4) providing more detailed summaries of each study.

[3]Some studies are in process, and there are also studies for which information on specific products and/or answers to our questions were not available.

c. Gaps in the research

Despite the large number of studies, our review revealed several gaps and shortcomings in the understanding of client value. One of these was that most research studies (the exceptions being Giné & Yang 2008, Jowett 2003, and a few others), do not examine how or whether microinsurance is used in combination with other financial tools to manage risks. *Portfolios of the Poor* makes it clear that the use of financial products by poor people cannot be analyzed in an isolated manner, because they often combine formal and informal credit, savings, insurance, and cash transfers to meet their needs. A further complication is that it has proved difficult to find useful ways of analyzing the value of insurance after shocks and losses occur, leaving aside the effects of other financial tools on such events.

We found that the selection of products to study had been influenced by issues of methodological difficulty. Academic research has focused on health and agricultural insurance, but very few studies have analyzed the simpler and more widely distributed products, such as life, accident and property damage insurance (Roth et al. 2007). The primary reason for this gap, according to researchers interviewed over the course of this study, is that health and agriculture products offer a more concrete hypothesis of value. Researchers (and the development partners who fund their work) hypothesize that the insurance of crops helps farmers invest more in farm inputs. They expect that health insurance, in particular programs that cover both outpatient and inpatient care, will lead to greater utilization of healthcare services, which in turn will improve health outcomes and reduce out-of-pocket unplanned spending. Another reason for the preference for researching health and agricultural products seems to be that it is more difficult to study the effect (especially the short term effect) of products that cover unpredictable and low frequency events such as death, accidents, and critical illnesses, as compared to higher frequency events such as outpatient health services.

An additional constraint in the research literature on microinsurance has been the almost total geographic concentration of studies in Asia and Africa (Table 1). Rural areas are also over-represented even though these are the most difficult areas to insure given the high cost of distribution, limited infrastructure, and poor access to health services. Of the studies analyzed in this review, about 50% focused on rural areas only, less than 10% were exclusively urban, and the remainder covered both rural and urban areas.

Finally, we identified a gap in the research methodologies used to study client value. While many of the studies were quantitative (see Table 2), few had carried out the randomized control trials (RCTs) needed for more definitive causal explanations. New RCTs are currently in progress that promise to offer more evidence of these causal effects.

Table 1: Research Studies' Regional/Country Locations

Country/Region	# of Microinsurance studies	% of Microinsurance studies[4]
India	26	24%
Philippines	7	6%
Africa	41	38%
Asia	59	55%
Eastern Europe	3	3%
Latin America and Caribbean	5	5%

Table 2: Microinsurance Studies by Methodology

	Total Number of Studies (Number In Progress)			
	Total[5]	RCT	Other Quantitative	Qualitative and Literature Review
Health Microinsurance	82 (*21*)	15 (*13*)	57 (*5*)	8 (*1*)
Agricultural Microinsurance	27 (*10*)	8 (*5*)	15 (*3*)	2 (*0*)
Other Microinsurance	6 (*3*)	1 (*1*)	3 (*1*)	1 (*0*)

[4] Of the 108 microinsurance studies that are country-specific.
[5] Includes studies that are in the pipeline for which methodology is not yet available.

III. Findings of existing studies

a. Evidence of agricultural insurance boosting farmers' investment

Agricultural microinsurance products come in a variety of different forms, aiming to protect farmers against a range of risks, including low crop yields, poor rainfall, low crop prices, and livestock death. Almost all of the agricultural microinsurance studies we reviewed were published since 2005, and almost all analyzed the new field of weather index insurance.[6] Most studies focused on how farmers' investment decisions were influenced by having insurance (expected value), rather than the benefits of insurance when claims were made (financial value). This emphasis is consistent with the relative infrequency and unpredictability of weather shocks.

The studies reviewed suggest that agricultural microinsurance increases business investment and/or incentivizes farmers to make riskier but more profitable business decisions. However, relatively few studies of this topic have been completed, and not all show conclusively that microinsurance has a positive impact on businesses. Two notable studies of non-weather-index products appear to provide some of the most conclusive evidence of value in agricultural microinsurance. Cai et al. (2010) found that Chinese farmers with livestock insurance are significantly more likely to raise sows. Karlan et al. (2008), in their study of farmers with crop price indemnified loans, found that insured farmers spent relatively more on chemicals for their primary crop. This suggests that combining crop price insurance with loans does boost agricultural production. The study by Karlan et al enriches earlier research, which typically analyzes agricultural insurance products in isolation from other tools. The linkages between agricultural insurance and investment, when cash transfers or loans are combined with insurance, are promising. New RCTs that are in the pipeline aim to shed more light on these linkages.

b. Many health insurance studies but few assertions of health outcomes

The largest group of studies focus on how health insurance influences the use of health services, most of them finding that insurance encourages greater utilization (e.g. Atim 2009, Criel et al. 2009, Hamid et al. 2009). One study of health service utilization in Nicaragua based on a randomized control experiment (Fitzpatrick et al., forthcoming) notes that toddlers are more likely to visit a healthcare provider when their parents are insured. Several other studies measure the impact of insurance on out-of-pocket spending for low-income groups; they generally find that spending for low-frequency catastrophic events such as hospitalization and surgery decreases (e.g. Aggarwal 2010, Devadasan et al. 2007, Wagstaff & Pradhan 2005). Results for recurring spending on routine and preventive treatments are less conclusive (e.g. Aggarwal 2010, Bogg et al. 1996, Ekman 2007).[7]

Studies of health outcomes are fewer and show less conclusive data. Wang et al. (2009) analyzed a large rural health insurance program in China over a three-year period. They found lower levels of anxiety and pain for those insured, but no changes in people's ability to take care of themselves – which suggests that longer time periods are needed to assess clinical outcomes. Hamid et al. (2009) found that those with annual prepaid insurance cards in rural Bangladesh show improved general health and physical functioning, but these results are not statistically significant.

Although most of the health insurance studies were done for developing countries, two

[6] Index-based products overcome one of the main design flaws in traditional crop insurance, namely the costly administrative difficulty of verifying claims of crop failure with traditional crop insurance (see for example Hazell et al. 2010). These products are a promising method of delivering risk management tools to consumers, as they can be provided at relatively low cost and are more likely to pay claims in a timely and accurate manner. Giné et al. (2010) note that rainfall index products can significantly reduce the cost of crop failure policies by reducing transaction costs, which can be large, particularly in the most remote rural areas and in relation to the small size of the policies. As index policies pay claims according to a measurable weather limit or trigger, claims administration is also more straightforward from the perspective of the farmer, who does not need to submit verification of a loss.

[7] Other studies showed that health insurance may increase household consumption (Chou et al. 2003), protect assets (Aggarwal 2010), and smooth cash flows (Hamid et al. 2010). Unfortunately most of these studies were not randomized control experiments, so it is difficult to attribute causality to changes in health seeking behaviors.

important studies of traditional insurance in the US used rigorous methodologies on a large scale to investigate a variety of health insurance impacts. The first was the Rand Health Insurance Experiment, an RCT completed in 1982 that compared various health insurance plans, ranging from entirely free care to fee-for-service care with 95% coinsurance by the insured. This multimillion dollar 12-year study (Newhouse 1993) found that as cost-sharing with the insured increases, utilization of healthcare services decreases. Lower cost-sharing led to some positive health outcomes for the poorest and sickest (those with high blood pressure). The second study (Long & Masi 2009, Long et al. 2009) was a natural experiment conducted by the Commonwealth Fund. This extensive US$ 1 million study took place over three years (2006-2009), measured the impact of a 2006 healthcare reform in Massachusetts that moved the state toward near-universal health insurance coverage. However the study did not analyze health outcomes, despite its wide outreach and budget.

It is difficult to generalize about the results of the many health studies reviewed. Much of the evidence is inconclusive or not robust. The fact that there are few randomized studies says something about the measurement difficulties involved in studying health impact (particularly health outcomes), mainly because of the many variables at play. Adverse selection, for example, can lead to an overestimation of the impact on healthcare utilization but also to an underestimation of the impact on health outcomes, especially when decisions to purchase insurance are based on characteristics that are difficult to observe.

IV. Gaps in knowledge about client value

a. Unexplored products: life, accident, disability and property

Other than health and agriculture, research on microinsurance products has been limited, despite the fact that *The Landscape of Microinsurance in the World's 100 Poorest Countries* shows that the top two microinsurance products were life (56%) and accidental death and disability (20%). Health products make up only 11% of the products currently on the market (Roth et al. 2007).

A few research studies, most of them yet to be completed, are working on analyzing the value of life, credit life, and accident policies. One challenge in studying these products is the infrequency and lack of predictability of the events covered. RCTs would require large (possibly unattainable) sizes of control and treatment groups in order to ensure a statistically significant number of claims, and long time frames to pick up longer-term impacts.[8] Most research on these products has consisted of practitioner reports, usually geared toward generating greater demand for products by improving their development, marketing and servicing. These efforts might or might not improve value to clients, but they cannot build value into a product that had no financial value to begin with.

Clearly there is a gap in existing research on client value of products such as life, accident, and property insurance that address large and unexpected shocks in the lives of poor people. Researching the financial value of microinsurance products after a shock event would provide additional evidence of the financial costs and benefits of insurance on the insured household compared to formal and informal alternatives. Efforts to study this will have to embrace new research methods that are capable of looking at unanswered questions about value with rigor, and from a broader perspective.

b. Unanswered questions

As we have seen, despite the large body of existing research, there are still tremendous gaps in our understanding of the value of microinsurance to clients. To draw more insights from the existing knowledge, we devised 17 broad questions that relate to the expected, actual, or service value of insurance as addressed (to a greater or lesser extent) in the literature.

Figure 1 summarizes these questions, records the number of studies for each product type, and indicates whether these studies show positive value (+) for insurance or inconclusive value (~).[9] We then highlight some of the issues, particularly those where we found large gaps. These include the effect of microinsurance in protecting assets (including savings), protecting income, stimulating household or business investment, consumption, and health outcomes. We then discuss the importance of reviewing these and other questions in order to understand value more completely.

The important gaps and issues relating to the categories in Figure 1 are:

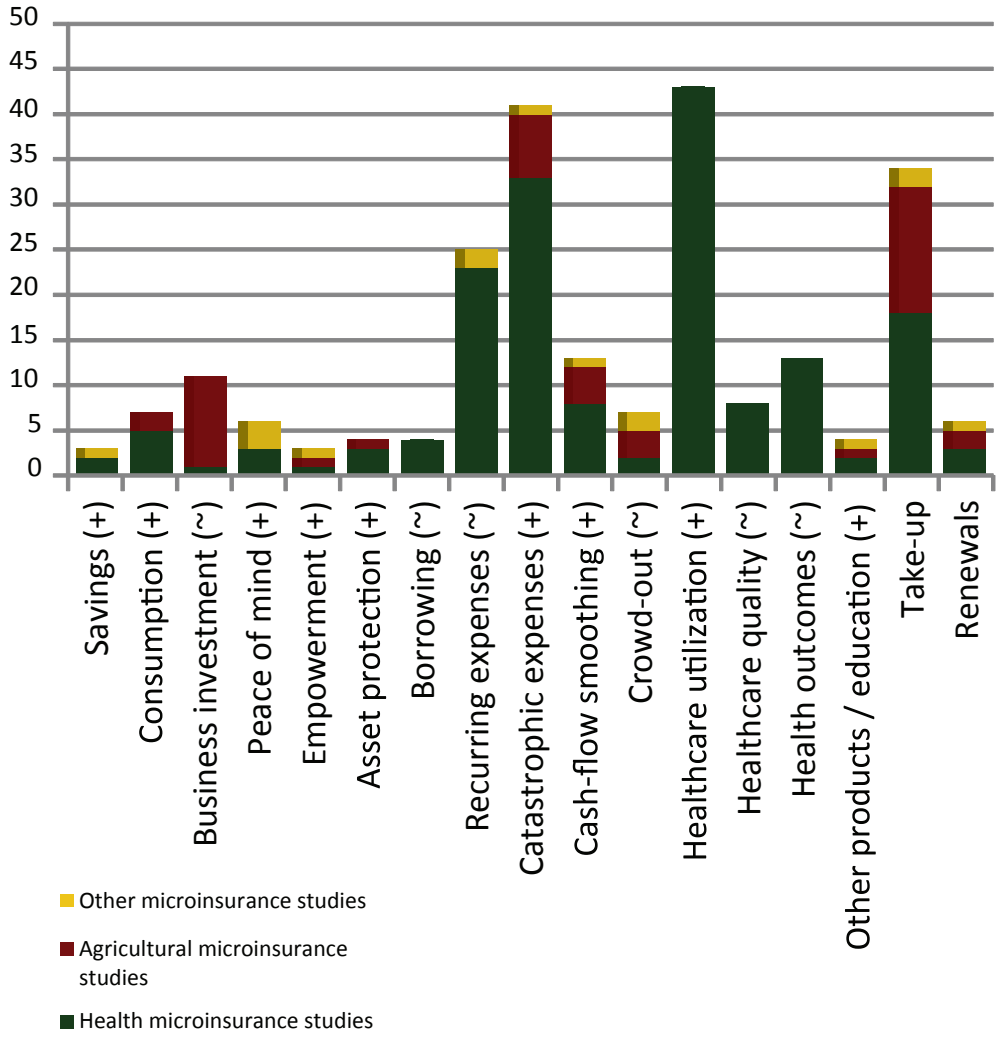
1. ***Asset protection:*** Insurance is primarily meant to protect assets, including savings, but the extent to which it succeeds when financial shocks occur has not been studied extensively. In particular, very few studies (one is Sync Consult 2006) have examined how some poor people use insurance to protect assets, taking into account their use of alternatives such as savings, loans, social networks, or state subsidies as well as the possibility of not having access to any tools.

2. ***Cash flow smoothing/Income protection:*** Microinsurance can have a cash flow smoothing value in cases when small payments are made over relatively frequent periods to cover events that are frequent but unpredictable, such as outpatient health care.[10] Few studies have examined this benefit.

3. ***Consumption effects:*** Microinsurance may have large consumption effects when claims place large amounts of cash in beneficiaries'

[8] Additionally, ethical and logistical questions about approaching people shortly after a significant emotional shock such as death or severe illness complicate such studies.
[9] The studies did not conclusively show negative value for any of the questions.

Figure 1: Summary of findings of microinsurance client value studies



hands.[11] However, recipients of a large sum of cash are often pressured by family and neighbors to spend it or lend it out (Karlan 2010). Little evidence has been presented about these trade-offs, but the sale of microinsurance products to the upper ranges of low income populations poses questions about the relationship between insurance and consumption, the type of consumption that insurance may incentivize, and the value of that consumption.

4. ***Household and business investment:*** The literature on agricultural insurance suggests that insurance may provide farmers with greater certainty about future income and thus encourage them to invest more in crop production. However, it is not clear whether this effect would translate into a non-agricultural setting where the investment would be in a microenterprise or other business. We found no studies that examined whether products that cover business risks (loss of inventory, machinery, or accident for example) might incentivize greater investment in the business.

5. ***Peace of mind:*** Insurance is often associated with peace of mind. Knowing one is protected

[10]This concept builds on studies that suggest that microcredit may be valuable to poor clients in helping them to smooth out the irregular cash flows that are typical of informal businesses and farming (Morduch 1998). Informal risk-sharing arrangements (Dercon & Krishnan 2003) and remittances from family members working abroad (Yang & Choi 2007) can also be used to smooth cash flows.

[11]This concept borrows from literature on microcredit (Chowdhury 2007) and remittances (Yang 2005), which has shown these products to have an impact on the consumption levels of the poor. While noting that there is still little conclusive evidence of the impact of microcredit on investment and income, Chowdhury makes the point that if a poor person starts from very low levels of consumption, there is nowhere to go but up.

can help reduce economic anxiety, a condition in which many poor households live on a daily basis. Some studies have suggested that insurance can reduce the anxiety of meeting health costs, or provide other types of "peace of mind," but very few studies address this issue specifically in any detail.

6. ***Client segmentation:*** A number of studies point to the effect of client segments – gender, age, life cycle, income, and education – on insurance take-up. However, because many studies report averages, these differences in behaviors or benefits by client segment are often obscured.[12] It is plausible to consider that different segments may benefit differently. There could be great benefits in re-examining the data of existing studies to understand the relative value of microinsurance to each segment.

7. ***Health outcomes:*** Health insurance research has been constrained by the logistical, ethical and methodological issues related to assessing health outcomes. Many of the products studied provided comprehensive health coverage, including large scale public programs, while others provided somewhat more limited but still broad coverage, such as inpatient hospital services. New efforts to provide narrow and focused health coverage in microinsurance will provide opportunities to study the specific effects of these products on one or two targeted health outcomes.[13]

[12]We found that a number of studies segmented groups by income. Some of these found that relatively better off groups benefit more from insurance. This could be because utilization of healthcare services, for example, may incur costs not covered by the policy, costs that the poorest are unable to pay (Aggarwal 2010). It could also be that an insurance product is less effective in protecting a very small asset base than a relatively larger one (Chantarat et al. 2009). Other studies have found that insurance increased equity in access to healthcare services (Dror et al. 2006, Jowett et al. 2004).

[13]For example, AllLife in South Africa offers HIV and diabetes management and prevention packages that are strictly tied to preventative behaviors that are recorded on site.

V. Conclusions and recommendations

While the literature suggests broadly where microinsurance may have value for the poor, there are clearly significant gaps. Essential questions have not been answered by the literature, particularly questions about how insurance is used by the poor to protect their assets and income from financial shocks. Some of the most common microinsurance products – life and accident – have been the least studied. Rural bias and regional bias reveal additional gaps.

New studies need to take into account methodological considerations. While RCTs provide the most rigorous evaluation of causal effects, RCTs can be costly and cannot always answer questions about the financial value of products covering unexpected and low frequency events within a short time frame. However RCTs are very effective for understanding the value of products that cover high frequency events, and they can offer important insights into the demand for microinsurance. New studies should also consider the possibility that poor individuals may in some cases be best served by other mechanisms, or by some combination of loans, savings, insurance and cash transfers.

New methodologies can also "do the client math," drawing from lessons learned from the financial diaries in Portfolios of the Poor. Client math studies would aim to better understand the benefits (cash in) and costs (cash out) of insurance, gain a better understanding of the role that insurance can play in helping the poor cope with financial shocks. Such studies should incorporate a qualitative understanding of value and client perceptions, as well as a contextual understanding of the existing access to formal and informal coping mechanisms available to clients. Taken together, the quantitative and qualitative components of "client math" studies can help provide a richer understanding of how, when, and why the poor use insurance to protect themselves from shocks and whether insurance really offers value to clients.

The planning of new studies should aim to both deepen and broaden the understanding of client value. It should extend learning to urban settings, to models outside Africa and Asia, and to products outside of agriculture and health insurance. It is in these knowledge-gap areas that the MILK Project will focus its research – working with other teams, drawing from lessons learned in existing literature, and studying other questions and other contexts, in an effort to provide greater clarity about the value of microinsurance to clients and their families.
The appendices below are a reference guide for the 179 studies analyzed for this review. They include academic and practitioner literature

Appendix 1: Overview of Landscape Methodology and Description of Appendices

on microinsurance, traditional insurance, government insurance programs, and a variety of other risk management mechanisms.

We separate components of client value into three broad categories: expected value (the value clients may get from a product through behavioral incentives and peace of mind, even if claims are not made), financial value (the amount paid out when claims are made), and service quality value (externalities created by providing access to services). We further divide each of these categories into specific questions. We also review studies that analyzed demand.

Appendix 2 is a list of studies in progress or planned. It indicates the researchers, funders, and research institutions involved in each study, and the research methodology, type of insurance, and the current status and/or expected completion date of the study. More detailed descriptions of these studies appear in Appendix 4.

Appendix 3 is a matrix categorizing the studies by context and methodology, and indicating how each study respond to the 17 questions related to value.

Appendix 4 includes an annotated bibliography of each of the studies we reviewed. Each entry briefly describes the insurance product or other risk management mechanism, the methodology, and the findings. It also lists "key words" for each study and indicates whether the study areas were urban, rural, or both.

Appendix 5 is a list of 104 additional studies we identified but did not annotate or include in the matrix of Appendix 3.

Appendix 2: Pipeline Studies

Institute/Funder	Researcher(s)	Type of Study	Type of Insurance	Status
Centre for Insurance & Risk Management	Not available	RCT	Health (Calcutta Kids)	Baseline data collected 2010; follow-up survey in 2011
Centre for Insurance & Risk Management	Not available	RCT	Health (CARE Foundation)	Not available
Centre for Insurance & Risk Management; International Food Policy Research Institute; International Initiative for Impact Evaluation	Shukla, A., Patankar, M., Hill, R. V., Robles, M., Torero, M., Rampal, P., & Liu, Y.	Non-experimental quantitative	Weather securities	Expected completion 2012
Cordaid; University of Twente; CARD MBA	Morsink, K.	Non-experimental quantitative	Composite accident, life, and property	Expected completion 2012
FAI	Karlan, D., Zinman, J., Ruger, J., & Giné, X.	RCT	Composite accident, life, and health	Data collection complete; analysis ongoing
FAI	Karlan, D., Zinman, J., & Giné, X.	RCT	Health (PhilHealth)	Ongoing
FAI; Micro Insurance Academy	Morduch, J.	Non-experimental quantitative	Health (UpLift)	Ongoing; implementation began in 2009
ICICI Bank Social Initiatives Group; J-PAL	Duflo, E., Banerjee, A., & Hornbeck, R.	RCT	Catastrophic health (Swayam Shakti)	Expected completion August 2010
ICICI Bank Social Initiatives Group; USAID BASIS; Self Employed Women's Association (SEWA)	Cole, S., Tobacman, J., & Chattopadhyay, R.	Experimental	Agricultural weather index	Expected completion 2015
ILO Microinsurance Innovation Facility	Cole, S., & Gaurav, S.	Experimental	Agricultural	Expected completion 2010
ILO Microinsurance Innovation Facility	Wahhaj, Z., & Outes-Leon, I.	Quantitative using behavioral games	Agricultural	Expected completion January 2011
ILO Microinsurance Innovation Facility	de Janvry, A., Sadoulet, E., & Cai, J.	RCT	Agricultural area-based yield	Expected completion January 2011
ILO Microinsurance Innovation Facility	Patankar, M., & Upadhyay, G.	Non-experimental quantitative	Agricultural crop insurance	Expected completion 2010
ILO Microinsurance Innovation Facility	Chakrabarty, S.	RCT	Credit-life; Health	Expected completion 2010
ILO Microinsurance Innovation Facility	Clarke, D., & Macchiavello, R.	Quantitative using laboratory experiments	Group-based agricultural	Expected completion 2010
ILO Microinsurance Innovation Facility	Khan, J., Islam, Z., Gazi, R., Alam, M. K., & Perez Koehlmoo, T. L.	RCT	Health	Expected completion March 2011
ILO Microinsurance Innovation Facility	LeMay-Boucher, P., Dagnelie, O., Tenikue, M., & Sall, M.	Quantitative using experimental games	Health	Expected completion February 2011
ILO Microinsurance Innovation Facility	Sikod, F., & Abba, I.	Not available	Health (community-based)	Expected completion January 2011
ILO Microinsurance Innovation Facility	Pham, K. S., & Pham, T.	Non-experimental quantitative	Health (Health Care for the Poor Program)	Expected completion January 2011

Institute/Funder	Researcher(s)	Type of Study	Type of Insurance	Status
ILO Microinsurance Innovation Facility	Lammers, J., Janssens, W., Katera, L. A.	Quantitative using experimental games	Health, bundled with loans	Expected completion January 2011
ILO Microinsurance Innovation Facility	Tobacman, J., & Stein, D.	Quantitative using laboratory experiments	Weather and livestock index	Expected completion 2010
ILO Microinsurance Innovation Facility; Glaxo-Smith-Kline (France)	Lepine, A., Le Nestour, A., & Mbaye, S.	RCT	Health (national agro-sylvo-pastoral insurance)	Baseline study complete; expected completion 2012
ILO Microinsurance Innovation Facility; Swedish Cooperative Centre	Dercon, S., Gunning, J. W., & Zeitlin, A.	RCT	Composite health, funeral, and accidental death and disability (Bima Ya Jamii)	Expected completion September 2012
Institute of Microfinance	Ahsan, S. M., Hamid, S. A., & Barua, S.	Non-experimental quantitative	Health	Expected completion July 2011
Micro Insurance Academy; Seventh Framework Programme of the European Commission	Rutten, F. Dror, D., Rösner, H.-J., & Radermacher, R.	RCT	Health (community-based)	Expected completion 2013; baseline research completed August 2010
Not available	Sautmann, A.	Not available	Health (Action for Health Program)	Field work has not begun
SMERU Research Institute	Not available	Quantitative with an experimental component	Life	Expected completion 2013
Social Sciences & Humanities Research Council	Chemin, M., & de Laat, J.	RCT	Health (National Hospital Insurance Programme)	Expected completion September 2011
Social Sciences & Humanities Research Council; Swedish Cooperative Centre	Chemin, M., de Laat, J., & Haushofer, J.	RCT	Composite health, funeral, and accidental death and disability (Bima Ya Jamii)	Expected completion September 2012
USAID BASIS; Center on the Economics and Demographics of Aging; Agence Française de Développement (AFD)	Levine, D. I., Hema, N., & Ramage, I.	RCT	Health (SKY)	Data collection
USAID BASIS; Financial Sector Deepening Kenya; The World Bank; International Livestock Research Institute	Mude, A., Barrett, C. B., Carter, M. R., Ikegami, M., & McPeak, J.	RCT	Agricultural index-based livestock	Expected completion 2013
USAID BASIS; Instituto de Estudios Peruanos	Carter, M., Boucher, S., & Trivelli, C.	RCT	Agricultural yield-index (AgroPositiva)	Expected completion 2011
USAID BASIS; University of Chicago; IPA	Osei, R. D., Karlan, D., Osei-Akoto, I., & Udry, C.	RCT	Agricultural weather index	Data collection; expected completion February 2012

Appendix 3: Landscape Matrix of Research and Studies on Client Value in Microinsurance

		Context Category	KEY CODE TYPE OF STUDY: RCT: Randomized control trial Quant: Other quantitative analysis Qual: Qualitative study Lit: Literature review CONCLUSIONS IN STUDY: (+) yes (-) no (~) mixed or inconclusive (o) not yet available				
		Microinsurance			Other Insurance		Other Risk Management[14]
Questions		Agriculture	Health	Other	Agriculture	Health & Life	
Expected Value (When Claims are not made)	Does insurance lead to reduced savings?		RCT: Karlan et al (+) Quant: Chou et al 2003 (+)	Quant: SMERU (o)		Quant: Farley and Wilensky 1985 (+) Quant: Engen and Gruber 2001 (+) (LIFE INSURANCE)	Quant: Hubbard et al 1995 (+),Powers 1995 (+)
	Does insurance increase consumption or household investment?	RCT: Carter et al (o), Cole et al (o)	Quant: Chou et al 2003 (+), Hamid et al 2010a (+), Wagstaff and Pradhan 2005 (+) ■ Aggarwal 2010 (~) ■ Karlan et al (o),			Quant: Gruber and Yelowitz 1999 (+) ■ Starr-McCluer 1996 (-)	Quant: Eswaran and Kotwal 1989 (+), Hodinott 2006 (+)
	Does insurance increase business investment or lead to riskier business decisions?	RCT: Cai et al 2010 (+) ■ Gine and Yang 2009 (-) ■ Karlan et al 2010 (~) ■ Carter et al (o), Cole et al (o), Mude et al (o), Osei et al (o) Quant: Hill and Viceisza 2010 (+) ■ Patankar et al (o), Shukla et al (o)	RCT: Karlan et al (o)		Quant: Horowitz and Lichtenberg 1993 (+), O'Donoghue et al 2007 (+) ■ Goodwin et al 2004 (~), Roberts et al 2003 (~) ■ Roberts et al 2007 (-)		RCT: Dupas and Robinson 2010 (+), Duflo et al 2009 (+) Quant: Dercon 1996 (+), Eswaran and Kotwal 1989 (+), Fafchamps 1992 (+), Fafchamps and Pender 1997 (+) ■ Bouchet et al 2008 (-), Dercon and Christiaensen 2008 (-) ■ Kurosaki and Fafchamps 2002 (~) Qual: Giné et al 2010 (-)
	Does insurance provide "peace of mind" effects on the health and psychology of clients		RCT: Karlan et al (+) ■ Chemin et al (o) Qual: Young 2006 (+)	Quant: Sync Consult 2006 (+) Qual: Hintz 2010 (+), Young 2006 (+)		Quant: Lave and Ricci 1998 (+)	
	Does having insurance empower clients to take decisions?	RCT: Karlan et al 2010 (+)	Qual: Young 2006 (+)	Qual: Young 2006 (~)			RCT: Ashraf et al 2010 (+)

[14] This column describes devices other than insurance (including savings, asset accumulation and sales, formal and informal credit, and gifts) in their capacity as risk-management mechanisms. For purposes of this column, these other mechanisms should be substituted for "insurance" in each question (e.g. "Does insurance lead to reduced savings?" becomes "Does access to credit lead to reduced savings?"). Also described in this column are studies showing the impact that an absence of risk management tools has on the questions (e.g. "Does lack of access to credit lead to increased savings?")

		Context Category	KEY CODE TYPE OF STUDY: RCT: Randomized control trial Quant: Other quantitative analysis Qual: Qualitative study Lit: Literature review CONCLUSIONS IN STUDY: (+) yes (-) no (~) mixed or inconclusive (o) not yet available				
		Microinsurance			Other Insurance		
Questions		Agriculture	Health	Other	Agriculture	Health & Life	Other Risk Management
Financial Value (When claims are made)	Does insurance protect assets?	Quant: Chanterat et al 2009 (+)	Quant: Aggarwal 2010 (+), Kruk et al 2009 (+) ■ Pham and Pham (o)				Quant: Fafchamps and Lund 2003 (+), Hodinott 2006 (+)
	Do households with insurance borrow less when an insured event happens?		RCT: Karlan et al (-) Quant:: Aggarwal 2010 (+), Kruk et al 2009 (+) ■ Pham and Pham (o)				
	Does insurance lead to lower recurring expenses?[15]		RCT: Thornton et al 2009 (-) ■ Lepine et al (o), Rutten et al (o) Quant: Aggarwal 2010 (+), Franco et al 2008 (+), Msuya et al 2004 (+), Schneider and Diop 2001 (+), Wagstaff and Pradhan 2005 (+) ■ Bogg et al 1996 (-), Diop et al 2006 (-), Gumber 2001 (-), Rao et al 2009 (-), Wagstaff 2007 (-), Wagstaff et al 2009 (-) ■ Chankova et al 2008 (~), Ekman 2007 (~), Lei and Lin 2009 (~), Schneider and Hanson 2006 (~) ■ Pham and Pham (o) Qual: McGuinness and Mandel (o) Lit: Ekman 2004 (+), Jakab and Krishnan 2001 (+) ■ ILO 2002 (~)	Quant: SMERU (o) Qual: Hintz 2010 (-)		Quant: Long and Masi 2009 (~)	

[15]Where a study analyzes products covering both catastrophic and routine, recurring expenses and does not distinguish between catastrophic and recurring expenses in its outcomes, we have categorized the impact on expenses as both recurring and catastrophic.

		Context Category	KEY CODE TYPE OF STUDY: RCT: Randomized control trial Quant: Other quantitative analysis Qual: Qualitative study Lit: Literature review CONCLUSIONS IN STUDY: (+) yes (-) no (~) mixed or inconclusive (o) not yet available				
		Microinsurance			Other Insurance		
Questions		Agriculture	Health	Other	Agriculture	Health & Life	Other Risk Management
Financial Value (When claims are made)	Does insurance lead to lower expenses or greater income protection for catastrophic events?	RCT: Giné et al 2007 (+) ■ Cole et al (o), Mude et al (o) Quant: Giné et al 2007 (+) ■ Katie School (~) ■ Patankar et al (o), Shukla et al (o)	RCT: Duflo et al (o), Rutten et al (o) Quant: Aggarwal 2010 (+),Chankova et al 2008 (+), Devadasan et al 2007 (+), Diop et al 2006 (+), Franco et al 2008 (+), Jütting 2004 (+), Limwattananon et al 2007 (+), Msuya et al 2004 (+), Ranson 2001 (+), Ranson 2002 (+), Schneider and Diop 2001 (+), Sun et al 2009, (+), Wagstaff 2007 (+), Wagstaff and Pradhan 2005 (+), Yip and Berman 2001 (+), ■ Ekman 2007 (-), Gumber 2001 (-), Rao et al 2009 (-), Sparrow et al 2010 (-), Wagstaff et al 2009 (-), Wagstaff and Lindelow 2008 (-), Xu et al 2006 (-) ■ Dror et al 2009 (~), Lei and Lin 2009 (~), Schneider and Hanson 2006 (~) ■ Pham and Pham (o) Qual: McGuinness and Mandel (o) Lit: Ekman 2004 (+), Jakab and Krishnan 2001 (+) ■ ILO 2002 (~), Wagstaff 2008 (~)	Quant: Morsink (o)		Quant: Long and Masi 2009 (~)	Quant: Chowdhury (+) ■ Gertler and Gruber 2002 (-)
	Does insurance lead to cash flow smoothing?	Quant: Hess 2003 (+) ■ Breustedt et al 2008 (~) ■ Patankar et al (o), Shukla et al (o)	RCT: Karlan et al (-) ■ CIRMb (o), Duflo et al (o), Rutten et al (o) Quant: Aggarwal 2010 (+), Franco et al 2008 (+), Hamid et al 2010a (+) ■ Pham and Pham (o) Qual: Young 2006 (+)	Quant: Morsink (o)			Quant: Eswaran and Kotwal 1990 (+), Dercon 1996 (+), Dercon and Krishnan 2003 (+), Yang and Choi 2007 (+) ■ Gertler and Gruber 2002 (-) ■ Deaton 1992 (~), Dercon and Krishnan 2000 (~), Fafchamps and Lund 2003 (~), Hodinott 2006 (~), Kazianga and Udry 2006 (~) Qual: Dercon 2000 (~), Morduch 1995 (~)
	Do insurance and other risk management tools have complementary (rather than competing) functions?	RCT: Giné and Yang 2009 (-) Quant: Hess 2003 (+) ■ Tobacman and Stein (o)	RCT: Fitzpatrick et al (+) ■ Karlan et al (o) Quant: Jowett 2003 (-)	Quant: Sync Consult 2006 (-) Qual: Hintz 2010 (-)		Quant: Long et al 2009 (+) Quant: Engen and Gruber 2001 (-) LIFE INSURANCE	Quant: Attanasio and Rios-Rull 2000 (-), Dercon and Krishnan 2003 (-) ■ Ligon 2002 (~) Qual: Clarke and Dercon 2009 (~), Collins et al 2009 (~), Dercon 2000 (~), Morduch 1995 (~), Saldaña-Zorilla 2007 (~)

		Context Category	KEY CODE TYPE OF STUDY: RCT: Randomized control trial Quant: Other quantitative analysis Qual: Qualitative study Lit: Literature review CONCLUSIONS IN STUDY: (+) yes (-) no (~) mixed or inconclusive (o) not yet available				
		Microinsurance			Other Insurance		
Questions		Agriculture	Health	Other	Agriculture	Health & Life	Other Risk Management
Service Quality Value (Externalities produced by providing services)	Does insurance increase utilization of healthcare services?		RCT: Fitzpatrick et al (+), Karlan et al (+) ■ Thornton et al 2009 (-) ■ CIRMb (o), LeMay-Boucher et al (o), Rutten et al (o) Quant: Atim 1999 (+), Criel and Kegels 1997 (+), Criel et al 1999 (+), Cheng and Chiang 1997 (+), Diop et al 2006 (+), Dror et al 2005, (+), Dror et al 2006 (+), Dror et al 2009 (+), Franco et al 2008 (+), Hamid et al 2010b (+), Devadasan et al 2007 (+), Jowett 2004 (+), Jütting 2004 (+), Kagubare 2005 (+), Lei and Lin 2009 (+), Msuya et al 2004 (+), Noterman et al 1995 (+), Polonsky et al 2009 (+), Rao et al 2009 (+), Schneider and Diop 2001 (+), Schneider and Hanson 2006 (+), Schneider and Racelis 2004 (+), Smith and Sulzbach 2008 (+), Sparrow et al 2010 (+), Trujillo et al 2005 (+), Wagstaff 2007 (+), Wagstaff and Pradhan 2005 (+), Wagstaff et al 2009 (+), Yip and Berman 2001 (+) ■ Aggarwal 2010 (~), Chankova et al 2008 (~), Gnawali et al 2009 (~), Ranson 2001 (~), Waters 1999 (~), Xu et al 2006 (~) ■ Pham and Pham (o) Qual: Chee et al 2002 (+), Young 2006 (+) ■ McGuinness and Mandel (o) Lit: ILO 2002 (+), Jakab and Krishnan 2001 (+)			RCT: Manning et al 1987 (+) Quant: Card et al 2004 (+), Lave and Ricci 1998 (+) ■ Long and Masi 2009 (~)	Lit: Kendall (+)
	Does insurance improve the quality of healthcare services received by the insured?		Quant: Cheng and Chiang 1997 (-) ■ Bauchet et al 2010 (~) ■ CIRMb (o), LeMay-Boucher et al (o), Morduch (o) Qual: Chee et al 2002 (+), McGuinness and Mandel (o) Lit: Ekman 2004 (-)				
	Does insurance improve health outcomes?		RCT: Fitzpatrick et al (~) ■ CIRMb (o), Duflo et al (o), Karlan et al (o), LeMay-Boucher et al (o), Levine et al (o), Lepine et al (o) Quant: Aggarwal 2010 (+), Dror et al 2005 (+), Hamid et al 2010b (+), Wang et al 2009 (+) Qual: McGuinness and Mandel (o) Lit: ILO 2002 (~)			RCT: Manning et al 1987 (~) Quant: McWilliams et al 2007 (+) ■ Card et al 2004 (~), Lei and Lin 2009 (~)	Quant: Hodinott 2006 (~)
	Does insurance lead to education or access to other products or services?	Quant: Hess 2003 (+)	Quant: Bauchet et al 2010 (+), Hamid et al 2010a (+)	Quant: Sync Consult 2006 (+)			

		Context Category	KEY CODE TYPE OF STUDY: RCT: Randomized control trial Quant: Other quantitative analysis Qual: Qualitative study Lit: Literature review CONCLUSIONS IN STUDY: (+) yes (-) no (~) mixed or inconclusive (o) not yet available				
		Microinsurance			Other Insurance		
Questions		Agriculture	Health	Other	Agriculture	Health & Life	Other Risk Management
Demand/Customer Satisfaction (Satisfies what clients want)	What determines the take up of insurance?	RCT: Cai et al 2010, Carter et al, Giné and Yang 2009, de Janvry et al, Mude et al Quant: Hill et al 2010, Chanterat et al 2009, Cole and Gaurav, Giné et al 2008, Patankar and Upadhyay, Shukla et al, Tobacman and Stein, Wahhaj and Outes-Leon Qual: Giné et al 2010	RCT: Chemin and de Laat, de Janvry et al, Karlan et al, Khan et al, Thornton et al 2009 Quant: Ahsan et al, Bendig et al 2009, Bhat and Jain, Dercon et al, Donfouet and Makaudze 2010, Gumber 2001, Jowett 2003, Lammers et al , LeMay-Boucher et al, Morduch, Rao et al 2009, Schneider and Diop 2001 Qual: Chee et al 2002	Quant: Geisbert 2008, Morskink		RCT: Flores et al 2005	RCT: Ashraf et al 2006 Quant: Bendig et al 2009, Kouame
	What determines whether clients are satisfied with or renew policies?	Quant: Hill et al 2009, Hill and Robles 2010	RCT: CIRMa, Fitzpatrick et al, Thornton et al 2009	Quant: Geisbert 2008			

Appendix 4: Bibliography

Background Documents and Miscellaneous

1. Churchill, C., Ed. (2006). *Protecting the poor: A microinsurance compendium*. Geneva: International Labor Organisation.

2. Churchill, C. (2007). Insuring the low-income market: Challenges and solutions for commercial insurers. *Geneva Papers, 32*, 401-412.

3. Collins, D., Morduch, J., Rutherford, S., & Ruthven, O. (2009). Portfolios of the poor: How the world's poor live on two dollars a day. Princeton, NJ: Princeton University Press.

4. Dercon, S., Kirchenberger, M., Gunning, J. W., & Platteau, J.-P. (2008). Literature review on microinsurance. Microinsurance paper no. 1. Geneva: International Labour Organisation Microinsurance Innovation Facility.

5. Hazell, P., Anderson, J., Balzer, N., Hastrup Clemmensen, A., Hess, U., & Rispoli, F. (2010). Potential for scale and sustainability in weather index insurance for agriculture and rural livelihoods. Rome: International Fund for Agricultural Development and World Food Programme.

6. Karlan, D. (2010). Helping the poor save more. *Stanford Social Innovation Review*.

7. Leftley, R., & Mapfumo, S. (2006). Effective microinsurance programs to reduce vulnerability. Opportunity International Network.

8. Mosley, P. (2009). Assessing the success of microinsurance programmes in meeting the insurance needs of the poor. DESA Working Paper No. 84.

9. Mukhopahyay, T., & Behl, A. S. (n.d.) Impact evaluation of health micro insurance through randomized controlled trials: Two interventions targeting renewal rates & health outcomes. Centre for Insurance & Risk Management, IFMR.

10. *Radermacher, R., Ashok, S., Zabel, K., & Dror, I., What do we know about the impact of microinsurance? Forthcoming.

11. Sebstad, J., Cohen, M. & McGuinness, E. (2006). Guidelines for market research on the demand for microinsurance, microREPORT #69. Washington, DC: United States Agency for International Development.

12. Sutherland, R. (2009). Life lessons from an ad man. TEDGlobal. Retreived from <http://www.ted.com/talks/lang/eng/rory_sutherland_life_lessons_from_an_ad_man.html>

13. Wagstaff, A. (2008). Measures for financial protection in health. World Bank Policy Research Working Paper 4554. Washington, DC: World Bank.

Health Insurance

14. Aggarwal, A. (2010). Impact evaluation of India's 'Yeshasvini' community-based health insurance programme. *Health Economics, 19*, 5-35.

- Key Words: India, health microinsurance, health outcomes, healthcare utilization, healthcare quality, healthcare expenditures, borrowing, asset protection, low-frequency events
- Type of Study: Non-experimental quantitative, using household surveys and propensity score matching techniques. The study analyzed 4 groups of outcome variables (healthcare utilization, financial protection, treatment outcomes, and economic wellbeing) across 4 categories of medical episodes (out-patient treatment, in-patient treatment, surgery, and pregnancy).
- Urban/Rural: Rural
- Program: Yeshasvini health insurance for cooperative rural farmers and informal sector workers is a voluntary, not-for-profit prepayment insurance program that covers in-patient surgical procedures as well as out-patient diagnosis and lab tests when ill. The program is not financially sustainable and receives financial support from the state government.
- Findings: Utilization of outpatient care and surgeries was greater in the insured group, but there was no significant increase in non-

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surgery inpatient treatment (which is not covered) or use of maternal health services. Total borrowings in the event of surgery are 30-36% less for the insured; payments made out of savings, incomes, and other sources are up to 74% less for the insured; and borrowing and/or asset sales associated with primary healthcare use are 61% lower for insured in the relatively worse-off group. Treatment outcomes (days lost in illness, income lost in illness, perception regarding the level of satisfaction, abnormal deliveries and caesarean deliveries) are mixed but some positive results are found. Insurance has positive but weak income effects, and insurance status has had different effects on consumption and savings across different income groups. Many of the effects vary across socio-economic groups and medical episodes. Hospitals must go through a formal evaluation process to join the network (with the objective of ensuring quality service), and most hospitals reported expanding facilities when they joined the network.

15. *Ahsan, S. M., Hamid, S. A., & Barua, S. Microinsurance, poverty and vulnerability. Forthcoming.

- Key Words: health microinsurance, Bangladesh, demand, business case
- Type of Study: Non-experimental quantitative, using household surveys.
- Urban/Rural: Rural
- Program: Health insurance scheme offered by Grameen Kalyan to borrowers and non-borrowers, providing concessions on consultation fees, diagnostic charges, and drug prices for up to six members of a household.
- Questions Addressed: What are health shocks and the vulnerability of coping with these shocks? What is the need for health insurance among rural households in Bangladesh, and what are their health-seeking behavior and the healthcare financing mechanisms? What is the demand for health microinsurance in rural Bangladesh? How can supply and demand for the Grameen Kalyan micro health insurance be matched? What is the impact of the Grameen Kalyan micro health insurance program on poverty and vulnerability? What is the intra-household inequity of health seeking behavior of Grameen Kalyan clients?

16. Atim, C. (1999). Social movements and health insurance: a critical evaluation of voluntary, non-profit insurance schemes with case studies from Ghana and Cameroon. *Social Science and Medicine, 48*, 881–886.

- Key Words: Africa, health microinsurance, life microinsurance, healthcare utilization
- Type of Study: Quantitative comparison of two insurance schemes' performance and potential contribution to health in Ghana and Cameroon using surveys of administrators, administrative data, key informant interviews, and analysis of key documents.
- Urban/Rural: Both
- Programs: Nkoranza Community Financing Scheme in Ghana (provides 100% coverage for admission at an affiliated hospital) and the Babouantou Family Mutual Aid Association of Yaoundé in Cameroon (pays a lump sum in the event of admission to any hospital for over 7 days, surgery, or accident, and some death benefits).
- Findings: The insured population was significantly more likely to be admitted to the hospital. Evidence is not sufficient to confirm that the presence or absence of such a social movement dynamic per se accounts for the performance of either of the schemes, but the dynamic of the social movement could enhance the design and performance of a scheme, especially the efficiency and quality of health care. The social movement component is measured by rate of participation in meetings and elections by members, rate of payment of membership dues, number and kinds of solidarity bonds linking the members, and ratio of volunteers to paid staff.

17. Bauchet, J., Dalal, A., Mayasudhakar, P., Morduch, J., & Radermacher, R. (2010). Can insurers improve healthcare quality? Evidence from a community microinsurance scheme in India.

- Key Words: India, health microinsurance, quality of healthcare, service quality
- Type of Study: Quantitative comparison of

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insured and uninsured patients undergoing certain common surgical procedures, using in-depth patient interviews, review of medical files, and survey of doctors. Indicators of facility's infrastructure, doctor's qualification and knowledge, process of care, and patient satisfaction were studied.
- Urban/Rural: Urban
- Program: Health product offered by Uplift India, which reimburses up to 75% of treatment costs in in-network facilities up to an annual cap. Uplift India also operates a medical hotline that guides patients to healthcare providers.
- Findings: Two thirds of insured patients contacted the insurer about their choice of provider, and were directed towards facilities that are part of the insurer's network, which have better infrastructure and better treatment processes but not better doctors than non-network facilities. Being insured, however, is not significantly associated with receiving better-quality care using Donabedian's quality of care framework (facility quality, lead doctor quality, process, and patient satisfaction), even when controlling for several patient and facility characteristics.

18. Bhat, R., & Jain, N. (2006). Factoring affecting the demand for health insurance in a micro insurance scheme. Indian Institute of Management Working Paper no. 2006-07-02.
- Key Words: India, health microinsurance, take-up
- Type of Study: Quantitative, using household surveys to identify factors determining demand for private micro health insurance (purchase decisions and the amount of insurance purchased).
- Urban/Rural: Both
- Program: Various health insurance schemes.
- Findings: Income and healthcare expenditure are significant determinants of health insurance purchase, as well as age, coverage of illness and knowledge about insurance. Income has a significant but non-linear relationship to the amount of health care purchased, as do number of children, age, and perception regarding future healthcare expenditure. Results indicate significant adverse selection problems.

19. Bogg, L., Hengjin, D., Keli, W., Wenwei, C., & Diwan, V. (1996). The cost of coverage: Rural health insurance in China. *Health Policy and Planning, 11*, 238-252
- Key Words: health microinsurance, cooperative, health expenditure, China
- Type of Study: Controlled natural experiment comparing "twin" counties, one with health insurance and one with a predominately user fee funded system, using macro-level healthcare expenditure data.
- Urban/Rural: Rural
- Program: One village had fee-for-service payments to healthcare providers with partial health insurance refunds for the majority of the population, and the other had fee-for-service payments without insurance refunds.
- Findings: The village with insurance had higher total health expenditures over time, mainly for curative care. Curative care expenditure and tertiary (county) curative care grow faster in a fee-for-service system with voluntary health insurance than in one without insurance.

20. Card, D., Dobkin, C., & and Maestas, N. (2004). The impact of nearly universal insurance coverage on health care utilization and health: Evidence from Medicare. NBER working paper no. 10365. National Bureau of Economic Research.
- Key Words: public health insurance, United States, healthcare utilization, health outcomes
- Type of Study: Quantitative, using survey data and hospital administrative records to assess the differences in healthcare utilization and health outcomes of individuals of approximately the same age who are and are not eligible for Medicare coverage.
- Urban/Rural: Both
- Program: Medicare, a government-administered health insurance program providing coverage to individuals age 65 and older.
- Findings: Race and education groups with large increases in insurance coverage at age 65 experience systematic reductions in the probability of delaying or not receiving medical care. These groups also experience increases in the probability of visiting a doctor at least once per year and in the

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frequency of routine medical checkups. It is less clear whether Medicare eligibility leads to increases in specific preventative care procedures, though this is partly an issue of statistical power.
Eligibility for Medicare leads to a 10% rise in hospital stays, with the majority of the increase in non-emergency admissions and hospitalizations for elective procedures like joint replacements and bypass surgery. The rise in hospitalizations is larger for whites than blacks or Hispanics and larger for residents of areas with higher insurance coverage rates prior to age 65. Reaching age 65 has no systematic effect on smoking, exercise, or obesity. Eligibility appears to have small but discernable effects on the level of self-reported health.

21. *Centre for Insurance & Risk Management (CIRMa). Calcutta Kids. Forthcoming.
- Key Words: health microinsurance, India, retention, business case
- Type of Study: RCT, using household surveys.
- Urban/Rural: Urban.
- Program: Inpatient healthcare and outpatient counseling services (OPCS)
- Questions Addressed: What is the effect of OPCS on client retention? What is the effect of OPCS on claims expense? Why and how much do clients value OPCS and the insurance product as a whole? Is OPCS self-financing? Can OPCS cross-subsidize the insurance premium?

22. *CIRMb. CARE Foundation. Forthcoming.
- Key Words: health microinsurance, India, access to healthcare, quality of care, health outcomes, utilization, income smoothing, healthcare expenditures
- Type of Study: RCT, using client surveys and administrative data before and after technology and public health prevention/ promotion interventions.
- Urban/Rural: Rural.
- Program: Outpatient services offered through a hub and spoke model with a centralized clinic and community health workers in the surrounding areas, technology-leveraged delivery of primary care (consulting and diagnostic services, drugs), and public health interventions (preventative and promotive).
- Questions Addressed: Is the technological intervention cost-beneficial for the sustainability of the scheme? Does the insurance package increase access to healthcare, enhance health outcomes, and mitigate financial risk? What is the impact of public health interventions on health outcomes and expenditures? Does the program improve quality of services?

23. Chankova, S., Sulzbach, S., & Diop, F. (2008). Impact of mutual health organizations: Evidence from West Africa. *Health Policy and Planning, 23*, 264-276.
- Key Words: health microinsurance, mutual, Ghana, Mali, Senegal, healthcare utilization, healthcare expenditure
- Type of Study: Multiple regression analysis of household survey data of member and non-member households.
- Urban/Rural: Both (at each study site)
- Programs: Nkoranza Health Insurance Scheme in Ghana (covers hospital admission and drugs if admitted at 100%); 4 mutuals in Mali (all cover outpatient visits and drugs if admitted to a hospital at 75%, one covers hospital admission at 75%); 27 mutuals in Senegal (most cover outpatient care at 50-100%, hospital admissions (with some ceilings) and essential drugs at 50-100%). All encourage enrollment of the entire household.
- Findings: Members are more likely to seek formal health care in Ghana and Mali, although this result was not statistically significant in Senegal. Evidence on whether membership is associated with higher probability of hospitalization is inconclusive, but membership offers protection against the potentially catastrophic expenditures related to hospitalization. Members' out-of-pocket expenditures for hospitalization are much lower than non-members'. Membership does not appear to have a significant effect on out-of-pocket expenditures for curative outpatient care. This result may be explained by the significant co-payments for outpatient care. Richer households (measured by an asset-based wealth index in Ghana, by the value of

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consumption per household member in Mali, and by monthly expenditures per household member in Senegal) are more likely to be enrolled in all three countries.

24. Chee, G., Kimberly, S., Kapinga, A., & Musau, S. (2002). Assessment of the community health fund in Hanang District, Tanzania. Bethesda, MD: Partnerships for Health Reform, Abt Associates Inc.

- Key Words: health microinsurance, Tanzania, utilization, healthcare quality, business case
- Type of Study: Qualitative, using interviews with patients and providers, focus groups, and facility and district records.
- Urban/Rural: Both
- Program: Community Health Fund, a district-level prepayment scheme for primary care services targeted at the rural population and the informal sector that provides unlimited access to outpatient services in participating facilities for an annual fee. Free membership is available for the very poor.
- Findings: Members represent only 5% of total households in the study areas, but member visits account for 53% of total utilization at the health facilities. In-charges at facilities do not believe that members are overusing health services by coming to the health facility for minor conditions, but most do believe that members may seek care more readily when ill. Funds from the program have financed visible improvements in participating facilities and appear to have positively impacted health services. The most common reason for not participating in the program is difficulty paying the membership fee. The study also describes management structure and financial results of the program.

25. *Chemin, M., & de Laat, J. Demand-side issues of microinsurance provision to the poor. Forthcoming. http://www.microinsurancenetwork.org/workinggroup/impact/project.php?id=5

- Key Words: health microinsurance, Kenya, demand
- Type of Study: RCT, using household surveys.
- Urban/Rural: Both
- Program: National Hospital Insurance Fund, a government organization providing inpatient coverage with a cap but no exclusions.
- Questions Addressed: What are the key constraints to registration: lack of education, high transaction costs, or high insurance costs? What is the impact of the National Health Insurance on clients?

26. *Chemin, M., de Laat, J., & Haushofer, J. Microinsurance for the poor - the informal ("Jua Kali") sector in Kenya. Forthcoming.

- Key Words: Kenya, health microinsurance, life microinsurance, peace of mind
- Type of Study: RCT, using household surveys and observation of physiological markers of stress and depression.
- Program: Bima Ya Jamii ("Insurance for the Family") with a composite health, funeral, accidental death and disability policy.
- Questions Addressed: What are the welfare effects of micro-insurance on the poor?

27. Cheng, S.-H., Chiang, T.-L. (1997). The effect of universal health insurance on healthcare utilization in Taiwan: Results from a natural experiment. *Journal of American Medical Association, 278*, 89–93.

- Key Words: public health insurance, Taiwan, healthcare utilization, equity
- Type of Study: Quantitative, using surveys completed before and after implementation of the program to measure outpatient physician visits in the two weeks prior to the survey and emergency department visits in the past year.
- Urban/Rural: Both
- Program: Universal health coverage offered by the government of Taiwan.
- Findings: Universal health insurance removed some of the barriers to health care for the newly insured; the newly insured consumed more than twice the number of outpatient visits as before implementation, and the previously insured group had a small but statistically significant increase in outpatient visits. The changes in emergency department visits were insignificant for both groups. Co-payments seemed to have an insignificant effect on curbing utilization. People in the top income group experienced the smallest increase in physician visits, and people in the middle income group experienced the biggest increase. 78% of patients reported that there was no change in healthcare quality.

*Draft, in progress, or planned study

28. Chernew, M. E., Juster, I. A., Shah, M., Wegh, A., Rosenberg, S., Rosen, A .B. ... Fendrick. A. M. (2010). Evidence that value-based insurance can be effective. *Health Affairs, 29* (3), 1-7.

- Key Words: traditional health insurance
- Type of Study: Quantitative, using administrative data to measure the effect of a large employer's reduction of copayments for drugs used to treat serious chronic conditions.
- Urban/Rural: Both
- Program: Value-based insurance design program implemented by Active-Health Management, an independent subsidiary of Aetna.
- Findings: Nonadherence to prescribed drugs decline by 10% in four of the five drug classes studied, and the results were statistically significant. The intervention led to reduced use of nondrug health care services, offsetting the cost of additional use of drugs. The intervention breaks even from broader employer and employee cost perspective.

29. Chou, S.-Y., Liu, J.-T. and Hammitt, J. K. (2003). National Health Insurance and precautionary saving: Evidence from Taiwan. *Journal of Public Economics, 87*, 1873-94.

- Key Words: public health insurance, Taiwan, savings, household consumption, risk management
- Type of Study: Natural experiment following the introduction of National Health Insurance in 1995, using data from the Survey of Family Income and Expenditure, an annual survey conducted by the government to compare government-employed households (who had insurance that provided coverage to family members and after retirement before 1995) to other households using a difference-in-differences estimation.
- Urban/Rural: Both
- Program: National Health Insurance (NHI) offered by the government, which covers all workers before and after retirement and their family members. Before 1995, only government employees had these benefits.
- Findings: Compared with the preceding government insurance programs, NHI reduced saving by an average of 8.6–13.7% and increased consumption by 2.9-3.6%, with the largest effects for households with the smallest saving.
  NHI is offered at actuarially fair rates, but employees of the government and of certain employers bear only 30–40% of the premium, so NHI increases expected income net of medical expenses. This income effect (which is expected to be trivial because the premium is so small) will increase both consumption and saving. It can be distinguished from the risk effect, which also increases consumption but decreases saving.

30. Criel, B., & Kegels, G. (1997). A health insurance scheme for hospital care in Bwamanda district, Zaire: Lessons and questions after 10 years of functioning. *Tropical Medicine and International Health, 2*, 654–672.

- Key Words: Zaire, health microinsurance, healthcare utilization, business case
- Type of Study: Quantitative, using hospital records.
- Urban/Rural: Rural
- Program: Voluntary health insurance covering hospital services with a 20% co-payment. Except in emergency situations, patients must be referred from health centers.
- Findings: Hospital services were used by a significantly higher proportion of insured people than uninsured people, though the study does not control for adverse selection (households that were going to use the hospital more with or without insurance may have been the ones that decided to buy insurance) and does not show the extent to which the increase was in "appropriate utilization."
  The study also discusses the success of the (unsubsidized) scheme in generating revenue for the hospital.

31. Criel, B., Van der Stufyt, P., & Van Lerberghe, W. (1999). The Bwamanda hospital insurance scheme: Effective for whom? A study of its impact on hospital utilization patterns. *Social Science and Medicine, 48*, 897-911.

- Key Words: health microinsurance, Zaire, healthcare utilization
- Type of Study: Quantitative, using hospital administrative records and questionnaires.
- Urban/Rural: Rural

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- Program: Bwamanda hospital insurance scheme, a voluntary product with the family as the subscription unit, covering hospital care with a 20% copayment.
- Findings: Hospital admission rates were on average nearly 3 times higher for the insured than for the uninsured. Ward-specific ratios of insured: noninsured admission rates are highest for surgery (more than 10x) and for the maternity (7x).
  Utilization differentials between insured and uninsured were most substantial in communities located close to the hospital. No significant difference was found in length of stay. Bed occupation at the time of the questionnaire was deemed not necessary for 42% of insured patients, 33% of self-employed noninsured patients, and 55% patients covered by employer-organized schemes, and in half of these cases the reason was that the patient was waiting to be taken home. A high proportion of admissions were justified for insured and noninsured patients, and the difference is not statistically significant.

32. *Dercon, S., Gunning, J. W., & Zeitlin, A. Impact evaluation of composite microinsurance and consumer education. Forthcoming.
- Key Words: health microinsurance, life insurance, Kenya, health outcomes, financial outcomes
- Type of Study: RCT, using household surveys and experimental games.
- Urban/Rural: Rural
- Program: Bima Ya Jamii ("Insurance for the Family") with a composite health, funeral, accidental death and disability insurance product.
- Questions Addressed: What is the impact of consumer education, marketing, and discounts (and combinations of the above) on uptake? What is the impact of composite microinsurance on a range of socio-economic and health indicators?

33. Devadasan, N., Manoharan, S., Menon, N., Menon, S., Thekaekara, M., & Thekaekara, S. (2007). Indian community health insurance schemes provide partial protection against catastrophic health expenditure. *BMC Health Services Research, 7*, 43.
- Key Words: India, health microinsurance, healthcare expenditures
- Type of Study: Quantitative, based on a review of insurance claims and household income.
- Urban/Rural: Both
- Program: ACCORD provides health insurance coverage for the indigenous population in Gudalur, Tamil Nadu in collaboration with a community-based organization that works to advance indigenous rights. SEWA (a union of women employed in the informal sector) provides insurance coverage for self-employed women and their husbands in the state of Gujarat. Both are voluntary schemes and cover hospitalization expenses but have a cap on expenditures.
- Findings: 67% of insured households at ACCORD and 34% of insured households at SEWA were protected from making out-of-pocket payments, and the magnitude of out-of-pocket payments was reduced significantly. The incidence of catastrophic health expenditures (defined as annual hospitalization expenditure greater than 10% of annual income) was halved in both schemes, but 4% and 23% of households with admissions still experienced catastrophic health expenditures at ACCORD and SEWA, respectively.

34. Diop, F. P., Sulzbach, S., & Chankova, S. (2006). The impact of mutual health organizations on social inclusion, access to health care and household income protection: Evidence from Ghana, Senegal and Mali. Bethesda, MD: Partners for Health Reformplus.
- Key Words: Ghana, Mali, Senegal, health microinsurance, mutual, healthcare utilization, healthcare expenditures
- Type of Study: Quantitative, using household surveys of member and non-member households in Ghana, Mali, and Senegal.
- Urban/Rural: Both
- Program: Nkoranza Health Insurance Scheme in Ghana (covers hospital admission and drugs if admitted at 100%); 4 mutuals in Mali (all cover outpatient visits and drugs if admitted to a hospital at 75%, one covers hospital admission at 75%); 27 mutuals in Senegal (most cover outpatient care at 50-100%, hospital admissions (with some

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ceilings) and essential drugs at 50-100%). All encourage enrollment of the entire household.

Findings: Coverage has some positive effect on use of modern health care, but this outcome varies according to the structure of the benefits package, copayment policies, and the schedule of contributions. Coverage does not have a protective effect on out-of-pocket costs for outpatient curative care. This result is explained by the fact that the package in Ghana did not cover outpatient services, and in Mali and Senegal copayments for outpatient care ranged from 25 to 50 percent, which may have mitigated any protective effect of membership. Coverage for inpatient care has a strong protective effect on out-of-pocket expenditures for hospitalization in Ghana and Senegal.

35. Donfouet, H. P. P., & Makaudze, E. M. (2010). Economic value of willingness to pay for a community-based prepayment scheme in rural Cameroon. Microinsurance Research Paper No. 3. Geneva: International Labour Organisation Microinsurance Innovation Facility.

- Type of Insurance: health microinsurance, Cameroon, community-based, take-up
- Type of Study: Quantitative, using household surveys and experimental bidding games.
- Urban/Rural: Rural
- Program: Community-based health microinsurance.

Findings: Age, religion, usual means of seeking treatment when getting sick, profession, knowledge of the basic concept of community health insurance, income, and involvement in any association or health policy are key determinants of willingness to pay.

36. Dror, D. M., Koren, R., & Steinberg, D. M. (2006). The impact of Filipino micro health-insurance units on income-related equality of access to health care. *Health Policy, 77*, 304-317.

- Key Words: health microinsurance, Philippines, healthcare utilization, equity
- Type of Study: Quantitative, using concentration curves and indices for insured and uninsured households generated from household survey data gathered from five regions in the Philippines in 2002.
- Urban/Rural: Both
- Programs: Five different health microinsurance programs throughout the Philippines: Quezon City: the Novaliches Development Cooperative, Inc. Health Care Program (NOVADECI-NHCP); San Fernando, La Union: ORT Health Plus Scheme (OHPS); Davao City: the Medical Missions Group Cooperators Health Program (MMG-CHP); Guimaras Island: the Guimaras Health Insurance Program (GHIP); Bayawan, Negros Oriental: Peso for Health Program (PHP)
- Findings: Microinsurance improves income-related equality of access to hospitalization and medical consultation in the case of illness. Microinsurance makes a much smaller impact on income-related equality of access to hospital births, which suggests that the choice of location of delivery is influenced by other considerations.

  Equality is important because people tend to compare themselves to their extended neighborhood rather than to people residing in a different province or another country. Thus customers probably look not only at the cost/benefit ratio of the insurance (which may be difficult to measure) but also at how well they fared compared to their poorer and richer neighbors.

37. Dror, D. M., Radermacher, R., Khadilkar, S. B., Schout, P., Hay, F. X., Singh, A., & Koren, R. (2009). Microinsurance in India: Three approaches; Microinsurance efforts targeted at resource-poor populations provided no less, and perhaps more, protection against financial catastrophe than commercial insurance. *Health Affairs, 28,* 1788-1798.

- Key Words: health microinsurance, healthcare utilization, healthcare expenditure, equity
- Type of Study: Quantitative, using 2005 household surveys of insured and uninsured people.
- Urban/Rural: Both
- Programs: Bharatiya Agro Industries Foundation (BAIF) (mutual covering hospitalization expenses up to a cap and providing reduced prices for primary care), UpLift Health (covers hospitalization expenses up to a cap, with certain exclusions, and income loss, as well as discounts for outpatient care, checkup camps and monthly prevention talks, and a 24/7 telephone

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"health hotline" giving medical guidance), and Nidan (commercial health insurance offered through an association with SEWA, covering hospitalization up to a cap).

- Findings: All three programs enrolled poor households. There was a significantly higher illness incidence among the insured cohort in BAIF and Nidan (supporting the notion that people who enrolled in health insurance perceived their health status as low), but not in UpLift. Hospitalization was more common among the insured households than among the uninsured during the two years preceding the survey. 25.5% of hospitalized people in BAIF had to pay, on average, INR 8,204 as costs above the cap, approximately 17% payed on average INR 8,734 in UpLift, and approximately 43% payed on average INR 5,475 in Nidan.
  The survey asked about number and cost of consultations and cost of drugs in the previous 3 months to explore whether insurance status was associated with different healthcare seeking patterns (based on a proxy for needs adjusted access to care), and none were associated with insurance status.
  There was no evidence of pro-rich bias in hospitalization among the three uninsured cohorts, but there was a significant pro-rich bias in the access to hospitalization among the insured in Nidan. The study concludes that microinsurance units, despite lesser funding and professional resources than commercial health insurers, have provided no less, and maybe more, protection to their insured populations through mobilization of context-relevant social processes.

38. Dror, D. M., Soriano, E. S., Lorenzo, M. E., Sarol, J. N., Azcuna, R. S. & Koren, R. (2005). Field based evidence of enhanced healthcare utilization among persons insured by micro health insurance units in Philippines. *Health Policy, 73*, 263-271.

- Key Words: Philippines, health microinsurance, healthcare utilization
- Type of Study: Non-experimental quantitative, using household surveys of insured and uninsured households.
- Urban/Rural: Both
- Programs: 6 different voluntary health insurance programs representing different geographic areas, occupational groups, and organizational setups (public, cooperative, NGO). Guimaras Health Insurance Program (GHIP) was set up by the public authority that also paid the contributions for older and poorer members. Davao City MMG-CHP, Quezon City–Novaliches NOVADECI-NHCP, and VALDECO-DPK were created by cooperatives for their members. La Union OHPS was started by ORT international, and Bayawan, Negros Oriental: Peso for Health Program (PHP) was created by a group of health workers around a regional hospital.
- Findings: Insured persons reported higher hospitalization rates, higher rates of professionally-attended deliveries, lower rates of delivery at home, a higher frequency of primary-care physician encounters, a higher rate of diagnosed chronic diseases, and better drug compliance among chronically ill.

39. *Duflo, E., Banerjee, A., & Hornbeck, R. Impact evaluation of the provision of health insurance through microfinance networks in northern India. Forthcoming.

- Key Words: health microinsurance, catastrophic risk, India, health outcomes, financial outcomes, cash-flow smoothing, business case
- Type of Study: RCT, using household survey data from insured and uninsured villages prior to insurance rollout and 2 years later and a running survey collecting targeted information when a low-probability event occurs.
- Urban/Rural: Rural
- Program: Swayam Shakti, a mandatory catastrophic health insurance policy (maternity, hospitalization, and accident benefits) sold to clients of SKS Microfinance. Clients can choose to cover up to three additional family members for an additional premium.
- Questions Addressed: Is this health insurance program effective at improving health outcomes and the ability of clients to repay their loans? To what extent does formal health insurance affect the ability of poor rural households to respond to negative

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health shocks? To what extent does this model induce adverse selection and moral hazard?
- One component of the study was to identify pregnant women and conduct a follow-up interview, if they were willing, immediately after the birth of their child. The visit combined anthropometric measures of the newborn and the mother and a paper-based survey with the mother.

40. Ekman, B. (2004). Community-based health insurance in low-income countries: a systematic review of the evidence. *Health Policy and Planning, 19*, 249-270.
- Key Words: health microinsurance, resource mobilization, healthcare expenditures, literature review
- Type of Study: Systematic literature review examining the extent to which voluntary, not-for-profit community-based health insurance mobilizes additional resources for health care in the operating area and provides financial protection for the target population.
- Urban/Rural: Both
- Program: Various
- Findings: There is strong evidence that community-based health insurance provides some financial protection by reducing out-of-pocket spending. There is evidence of moderate strength that such schemes improve cost-recovery. There is weak or no evidence that schemes have an effect on the quality of care or the efficiency with which care is provided.

41. Ekman B. (2007). Catastrophic health payments and health insurance: Some counterintuitive evidence from one low-income country. *Health Policy, 83*, 304-313.
- • Key Words: health microinsurance, Zambia, public insurance, out-of-pocket spending, healthcare expenditure, catastrophic payments
- Type of Study: Quantitative, using publicly available survey data from the Zambian Living Conditions Monitoring Survey in 1998 to measure the impact of prepayment schemes on income, income net of food expenditure, out-of-pocket payments, and healthcare-related expenditure (including out-of-pocket payments plus transportation, food, etc.).
- Urban/Rural: Both
- Programs: "Prepayment" schemes mostly operated by the government or the organization of Zambian copper mines that operate as an insurance mechanism through a monthly premium, offering lower user fees after a 1-day waiting period. 5% of the population is covered by mandatory employment-based insurance, and 12% is eligible for free care.
- Findings: Enrollment in the prepayment program increases both out-of-pocket payments and the risk of catastrophic payments (those exceeding 10% of total income or 20% of income net of food expenditure) due to the amount of care per illness episode and the type of care provided. Employment-based schemes reduce out-of-pocket payments but still lead to a higher probability of catastrophic payments. Those who are exempt from paying user fees enjoy some protection, but the effect is not significant when the broader measure of health expenditure (including transportation and other costs) is used.
  Two possible explanations for the results are that individuals with below-average health self-select into prepayment programs to avoid incurring even greater expenses and that individuals who don't have insurance refrain from seeking care for lack of money.

42. Farley, P.J., & Wilensky, G.R. (1985). Household wealth and health insurance as protection against medical risks. In M. David & T. Smeeding (Eds.), *Horizontal equity, uncertainty, and economic well-being*. Chicago, IL: University of Chicago Press.
- Key Words: traditional health insurance, savings, United States
- Type of Study: Quantitative, applying survey data from the 1977 National Medical Care Expenditures Survey to a theory of household behavior that describes the choice between health insurance and wealth as protection against the uncertainty of medical expenses.
- Urban/Rural: Both
- Program: Traditional health insurance
- Findings: Tax subsidies encourage an increase in the quantity of health insurance

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purchased. Families with less generous (or no) health insurance benefits tend to save more.

43. *Fitzpatrick, A., Magnoni, B., Thornton, R. L. Micro-insurance utilization in Nicaragua: A report on effects on children, retention, and health claims. Forthcoming.

- Key Words: health microinsurance, healthcare utilization, health outcomes, retention
- Type of Study: RCT, using surveys of individuals who were and were not offered 6 months of free insurance.
- Urban/Rural: Urban
- Program: Voluntary health insurance offered by the Nicaraguan Social Security Institute through MFIs to informal sector workers who were previously ineligible, which provides inpatient and outpatient services as well as generic drugs and lab tests for the individuals, children through age 11, and pregnant spouses.
- Findings: Retention is low, and prior health status and usage of insurance are correlated with retention, which may indicate that those who retained coverage were those for whom expected benefits were higher. Knowledge about the product and how to pay were also important to retention. Children who were covered by their parent's insurance have more overall visits to healthcare centers (not only due to substitution). Results indicate that the product did not increase wasteful medical consumption: children who were insured but not sick at baseline had fewer visits to all providers than those who were uninsured but not sick. The study finds no health impacts on children, possibly due to the short study time.

44. Flores, G., Abreu, M., Chaisson, C. E., Meyers, A., Sachdeva, R. C., Fernandez, H. ... Santos-Guerrero, I. (2005). A randomized, controlled trial of the effectiveness of community-based case management in insuring uninsured Latino children. *Pediatrics, 116*, 1433-1441.

- Key Words: traditional health insurance, United States, client relations, delivery method, latent demand, aligning want and need
- Type of Study: RCT, assigning uninsured children to an intervention group with trained case managers or a control group that received traditional Medicaid and State Children's Health Insurance Program (SCHIP) outreach and enrollment to evaluate the effectiveness of case managers in insuring uninsured children. Case managers provided information on program eligibility, helped families complete insurance applications, acted as a family liaison with Medicaid/SCHIP, and assisted in maintaining coverage.
- Urban/Rural: Urban
- Program: Medicaid and SCHIP
- Findings: Members of the case management group was almost 8 times more likely than the control group to obtain insurance coverage, and were insured more quickly. Parents of children in the intervention group were substantially more likely than parents of control group children to report being very satisfied with the process of obtaining health insurance for their child.

45. Franco, L. M., Diop, F. P., Burgert, C. R., Kelley, A. G., Makinen, M., & Simpara, C. H. T. (2008). Effects of mutual health organizations on use of priority health care services in urban and rural Mali: A case-control study. *Bulletin of the World Health Organization, 86*, 830-838.

- Key Words: health microinsurance, mutual, Mali, healthcare utilization, equity, healthcare expenditures, cash-flow smoothing
- Type of Study: Quantitative, using a case control design to examine the effects of a community-based MHO intervention on the use of curative, maternal and child health interventions, inclusiveness of MHO membership, and MHOs' ability to provide financial protection in a rural and urban setting in Mali. Controls fell into two categories: those who were living in areas where there was a functioning MHO but who did not join, and those who lived in areas where there was no MHO. Data was collected from a household survey and reviews of the mutuals' registers.
- Urban/Rural: Both
- Program: Community-based mutual health organizations.
- Findings: Members were 1.7 times more likely to seek treatment for fever in a modern facility, three times more likely to seek

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modern and/or oral rehydration therapy for diarrhea in their children under 5 years, and twice as likely to make at least four prenatal visits during pregnancy. Membership is associated with lower household health expenditures as a percentage of overall cash consumption and lower out-of-pocket payments for fever treatments. The ratio of mean-to-median expenditures (a measure of financial risk) is lower for members.

46. Gnawali, D. P., Pokhrel, S., Sie, A., Sanon, M., De Allegri, M., Souares, A., Dong, H., & Sauerborn, R. (2009). The effect of community-based health insurance on the utilization of modern health care services: Evidence from Burkina-Faso. *Health Policy, 90*, 214-222.

- Key Words: health microinsurance, Burkina-Faso, utilization
- Type of Study: Quantitative, using household surveys and propensity score matching to measure healthcare utilization (outpatient visits and inpatient care) of insured and uninsured groups before and after implementation of the program.
- Urban/Rural: Rural
- Program: Community-based insurance covering a wide range of outpatient and inpatient services with no copayment.
- Findings: The increase in outpatient visits given illness in the insured group was about 40% higher, while the differential effect on utilization of inpatient care between insured and non-insured groups was insignificant. The very poor were less likely to enroll, and once insured, they were less likely to utilize health services.

47. Gruber, J. & Yelowitz, A. (1999). Public Health Insurance and Private Savings. *Journal of Political Economy, 107*, 1249-1274.

- Key Words: public health insurance, United States, savings, consumption
- Type of Study: Quantitative, using data from the Survey of Income and Program Participation and the Consumer Expenditure Survey before and after an expansion in Medicaid eligibility to assess the effect of Medicaid on the savings behavior of households.
- Urban/Rural: Both
- Program: Medicaid, a government-funded, means-tested health program covering a wide variety of services.
- Findings: Medicaid eligibility has a sizable and significant negative effect on wealth holdings, and there is a strong positive association between Medicaid eligibility and consumption expenditures. Eligibility has a much larger negative effect on savings if there is an asset test in place.

48. Gumber, A. (2001). Hedging the health of the poor: The case for community financing in India. Health, Nutrition and Population Discussion Paper. Washington, DC: World Bank.

- Key Words: health microinsurance, India, healthcare expenditures, healthcare utilization, equity, demand
- Type of Study: Quantitative, using household surveys.
- Urban/Rural: Both
- Programs: Health insurance program offered by SEWA, covering preventative and curative care and health education, which also provides life and asset insurance for the woman, her husband, or, in case of widowhood or separation, for other household members. Employees' State Insurance Scheme, a contributory plan for industrial workers, and Mediclaim, a voluntary insurance program.
- Findings: The SEWA community plan addresses equity in enrollment, but social insurance coverage is much more successful in providing financial protection and enhancing utilization. Members of the SEWA plan were more likely to be untreated than the uninsured.

49. Habicht, J., Xu, K., Couffinhal, A., & Kutzin, J. (2006). Detecting changes in financial protection: Creating evidence for policy in Estonia. *Health Policy and Planning, 21*, 421-31.

- Key Words: public health insurance, Estonia, equity, healthcare expenditures
- Type of Study: Quantitative, using Estonian household budget surveys from 1995, 2001 and 2002 to measure annual out-of-pocket payments on health (payments made by households at the point of receiving health services net of any insurance reimbursement)

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across income groups.
- Urban/Rural: Both
- Program: Estonian Health Insurance Fund, which covers 94% of the population, including children under 18 and pensioners. Over the survey years, the level of government health spending declined, and co-payments went up.
- Findings: The proportion of households spending more than 20% of their capacity to pay on health increased from 3.4% in 1995 to 7.4% in 2002. In 2002, 1.3% of the population fell into poverty because of health payments. Elderly patients who belong to poor households and spend high amounts on medicines are most at risk.

50. Hamid, S. A., Roberts, J., & Mosley, P. (2010a). Can micro health insurance reduce poverty? Evidence from Bangladesh. Sheffield Economic Research Paper Series No. 2010001.
- Key Words: health microinsurance, Bangladesh, household investment, equity, cash-flow smoothing
- Type of Study: Quantitative, using household surveys conducted in 2006 of Grameen Bank borrowers at branches that (1) had at least 5 years of experience with microinsurance, (2) had 1 or 2 years of experience, and (3) did not have microinsurance.
- Urban/Rural: Rural
- Program: Annually renewable prepaid insurance cards offered to Grameen Bank clients, as well as primary health care offered directly from Grameen Bank centers. Services covered are mainly curative care and maternity and child health care, rather than catastrophic needs.
- Findings: Microinsurance had a positive association with all poverty indicators studied (household income, stability of household income (via food sufficiency), ownership of non-land assets and head count poverty index (probability of being above or below the poverty line), but only food sufficiency was statistically significant.

51. Hamid, S. A., Roberts, J., & Mosley, P. (2010b). Evaluating the health effects of micro health insurance placement: Evidence from Bangladesh. Sheffield Economic Research Paper Series No. 2010009.
- Key Words: health microinsurance, healthcare utilization, health outcomes, health awareness
- Type of Study: Quantitative, using household surveys conducted in 2006 of Grameen Bank borrowers at branches that (1) had at least 5 years of experience with microinsurance, (2) had 1 or 2 years of experience, and (3) did not have microinsurance.
- Urban/Rural: Rural
- Program: Annually renewable prepaid insurance cards offered to Grameen Bank clients, as well as primary health care offered directly from Grameen Bank centers. Services covered are mainly curative care and maternity and child health care, rather than catastrophic needs.
- Findings: Health insurance has a positive association with all of the health outcomes studied. The results are statistically significant for health awareness and healthcare utilization, but not for heath status (measured by both self-assessed (general) health and the index of physical functioning). The reasons for the failure to show statistically significant effect on health status may include problems detecting long-term effects with the cross-sectional data, lack of proper referral services, and adverse effects of protection against moral hazard.

52. ILO. (2002). Extending social protection in health through community-based organisations: Evidence and challenges. Geneva: International Labour Organisation.
- Key Words: community based health organizations, healthcare utilization, health outcomes, healthcare expenditure, dignity, empowerment
- Type of Study: Systematic literature review identifying 127 documents published between 1986 and 2001, looking for analysis of programs' capacity to achieve 3 key goals of social protection in health: (1) improving health status or at least the utilization of effective health services, (2) in a context of financial protection and (3) dignity for members of the arrangement and for society at large.
- Urban/Rural: Both
- Program: Various voluntary community-based

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health organizations.
- Findings: None of the cases included in the study analyzed health outcomes. Of the 9% that analyzed utilization, 58% found a positive impact. Of the 3% that analyzed financial protection (protection from excessive or catastrophic reduction in consumption), 89% found a positive impact. Only 2 of these studies had sufficient internal validity. None of the studies included had evidence on the dignity dimension (protection of human rights).
  Other benefits reported by the studies: community empowerment, closer relationship to providers, communities more involved in health campaigns, women empowerment, more interest of the community in health, sense of ownership of the program, access to health care information, partnership between local health authorities and communities, voice for the community on health issues, new ties among communities, solidarity, new sense of community participation in provision of health care services.

53. Jakab, M., & Krishnan, C. (2001). Community involvement in health care financing: Impact, strengths and weaknesses. A synthesis of the literature. Health, Nutrition and Population Family Discussion Paper. Washington, DC: World Bank.
- Key Words: health microinsurance, financial protection, utilization, equity
- Type of Study: Literature review of 45 published and unpublished reports on community financing completed between 1990 and 2001, assessing the performance of community involvement in health financing in terms of the level of mobilized resources, social inclusion, and financial protection.
- Urban/Rural: Both
- Program: N/A
- Findings: Community financing mechanisms mobilize significant resources for health care, but there is a large variation in the resource-mobilization capacity of various schemes. Community financing is effective in reaching a large number of low-income populations that would otherwise have no financial protection against the cost of illness, though there are indications that the poorest and most socially excluded groups are not always reached. Community-based health financing schemes are generally reported to reduce out-of-pocket spending and increase utilization of healthcare services.

54. Jowett, M. (2003). Do informal risk sharing networks crowd out public voluntary health insurance? Evidence from Vietnam. *Applied Economics, 35*, 1153–1161.
- Key Words: public health insurance, Vietnam, other risk management, utilization
- Type of Study: Quantitative, using household surveys.
- Urban/Rural: Both
- Program: Public voluntary health insurance offered to school children, the self-employed, some employees of the government, and certain other employers.
- Findings: Informal financial networks may crowd out government promoted health insurance. The extent to which individuals rely on informal risk-sharing networks is estimated by asking respondents whether they had borrowed money in the previous 12 months, and if so from which source.

55. Jowett, M., Deolalikar, A. & Martinsson, P. (2004). Health insurance and treatment seeking behaviour: Evidence from a low-income country. *Health Economics, 13*, 845-857.
- Key Words: public health insurance, Vietnam, healthcare utilization, equity
- Type of Study: Quantitative, using household surveys.
- Urban/Rural: Both
- Program: Voluntary public health insurance provided to students, the self-employed, employees of small enterprises, and certain government employees. Two policies are offered; both of which have 20% co-payments. The first covers only inpatient services, and the second covers both inpatient and outpatient services.
- Findings: Insured patients are more likely than uninsured to use outpatient facilities and public providers, and this effect is particularly strong at lower income levels.

56. Jütting, J. (2004). Do community-based health insurance schemes improve poor people's access to health care? Evidence from rural

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Senegal. *World Development, 32*, 273–88.

- Key Words: Senegal, health microinsurance, healthcare utilization
- Type of Study: Non-experimental quantitative, using household surveys of members and non-members.
- Urban/Rural: Rural
- Programs: 16 different mutual health insurance schemes. All but one covers only hospitalization, and all require substantial co-payments.
- Findings: Members use hospital services more often than non-members do. In the event they go to a hospital, members pay on average less than half of the amount non-members pay. The ''insurance effect'' of the mutual is reduced by the fact that members have to pay substantial co-payments, the mutuals generally only cover hospitalization costs up to 10–15 days, and very poor nonmembers also might get health care at a reduced rate without insurance.

57. Kagubare, M., (2005). The impact of CBHI on health care utilization and financial sustainability: The example of Rwanda. Doctoral dissertation. Baltimore, MD: John Hopkins University.

- Key Words: health microinsurance, utilization, Rwanda, business case
- Type of Study: Quantitative, using questionnaires given to health facilities and mutuals and key informant manager interviews before and after implementation of the health mutuals to measure healthcare utilization (# of curative consultations) and financial sustainability (cost recovery).
- Urban/Rural: Both
- Program: Community-based health insurance in the form of prepayment schemes initiated by the government and "community" schemes initiated directly by the population.
- Findings: The program significantly improved utilization, increasing member visits four-fold to 1.74 per year (while nonmember visits remained unchanged at 0.4 per year), though the study did not control for the effects of adverse selection. Members' utilization of health services decreased significantly over time (from 1.8 to 1.5 consultations per year), which may be explained by a decrease in adverse selection due to an increase in overall enrollment rate over time, or by increases in waiting time with increased enrollment.

58. *Karlan, D., Zinman, J., & Giné, X. Credit with health insurance: Evidence from the Philippines. Forthcoming.

- Key Words: health microinsurance, Philippines, risk-taking, health outcomes, other risk management mechanisms, peace of mind
- Type of Study: RCT, using household surveys, observation, and administrative data on 3 groups: those offered the option to enroll (first treatment group), required to enroll (second treatment group), and not offered insurance during the course of the study (control group).
- Urban/Rural: Rural
- Program: PhilHealth national health insurance program offered through Green Bank.
- Questions Addressed: Is there any evidence of adverse selection in the insurance market in developing countries? Does access to health insurance increase risk-taking behavior? Does access to health insurance improve the health status of beneficiaries? Does formal insurance crowd out informal insurance arrangements?
- Initial findings: 1) people save less (possibly substituting out of savings because they have insurance), 2) stress levels go down, 3) days of hunger and borrowing from loan sharks and formal loans go up probably because the insurance doesn't cover all expenses, therefore, people who are going more to the doctor have to pay more out of pocket 4) making a product voluntary makes people more likely to use a product than if it were mandatory , which suggests the need for demand generation and awareness.

59. *Karlan, D., Zinman, J., Ruger, J., & Giné, X. Measuring demand for hospitalization insurance in the Philippines. Forthcoming.

- Key Words: health microinsurance, life microinsurance, accident microinsurance, Philippines, take-up
- Type of Study: RCT, using administrative data, household surveys, and observation of eligible clients who were offered the product at a one-time premium that was set as a

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(randomly determined) percentage of their outstanding balance.
- Urban/Rural: Rural
- Program: Composite accident, life, and health insurance offered to clients of Green Bank.
- Questions Addressed: How price sensitive are the microfinance clients to hospitalization insurance? How important is adverse selection in the insurance market in developing countries?

60. *Khan, J., Islam, Z., Gazi, R., Alam, M. K., & Perez Koehlmoo, T. L. Impact of educational intervention on knowledge, attitude towards, and willingness to pay for micro health insurance among low-income informal workers in urban Bangladesh. Forthcoming.
- Key Words: health microinsurance, Bangladesh, take-up
- Type of Study: RCT, assessing the impact of education in each of four occupational groups.
- Urban/Rural: Urban
- Program: Educational program.
- Questions Addressed: What is the impact of an educational intervention program on knowledge, skills, attitudes, willingness to pay and take-up of existing health microinsurance products?

61. *Lammers, J., Janssens, W., Katera, L. A. Joint liability and the demand for health insurance in micro-credit groups. Forthcoming.
- Key Words: health microinsurance, take-up, Tanzania
- Type of Study: Quantitative, using experimental games.
- Urban/Rural: Unknown
- Program: Health microinsurance bundled with loans and offered to microcredit group participants in experimental games.
- Questions Addressed: Does the provision of insurance through existing micro-credit groups enhance enrollment through peer pressure in the context of joint liability? Do an individual's and others' health shock and loan repayment histories influence enrollment decisions?

62. Lave, J., & Ricci, E. (1998). Impact of a Children's Health Insurance Program on newly enrolled children. *Journal of the American Medical Association, 279*, 1820-1826.
- Key Words: public health insurance, United States, healthcare utilization, peace of mind
- Type of Study: Quantitative, using telephone interviews before and after the State Children's Health Insurance Program (SCHIP) expanded coverage.
- Urban/Rural: Both
- Program: SCHIP, which provides free health insurance coverage (outpatient and inpatient services) to children up to age 19 of families earning less than 235% of the poverty line.
- Findings: The proportion of children with a regular source of medical care increased; the proportion of children seeing a physician increased, and the proportion visiting an emergency room decreased. Parents of enrolled children reported that having insurance reduced the amount of family stress.

63. Lei, X., & Lin, W. (2009). The New Cooperative Medical Scheme in rural China: Does more coverage mean more service and better health? *Health Economics, 18*, S25-S46.
- Key Words: public health insurance, China, healthcare utilization, healthcare spending, health outcomes
- Type of Study: Quantitative, using multiple estimation strategies and data from the China Health and Nutrition Survey to assess impact on healthcare utilization, out-of-pocket expenditures, and health outcomes.
- Urban/Rural: Rural
- Program: New Cooperative Medical Scheme (NCMS), a newly adopted public health insurance program in rural China that is administered in 4 models: (1) inpatient services reimbursed according to a formula and outpatient services, including preventive care, are paid or through a medical savings account, (2) inpatient services reimbursed according to a formula but no medical savings account for outpatient services and preventive care, which are reimbursed according to a formula through collective funds, usually with no deductible and no reimbursement cap, (3) reimburses inpatient and outpatient services for catastrophic diseases, with separate deductibles and

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reimbursement caps, (4) reimburses inpatient services but not outpatient services.
- Findings: Participating in the NCMS significantly decreases the use of traditional Chinese folk doctors and increases the utilization of preventive care, particularly general physical examinations. The study does not find that the NCMS decreases out-of-pocket expenditure or that it increases utilization of formal medical service or improves health status, as measured by self-reported health status and by sickness or injury in the past four weeks.

64. *LeMay-Boucher, P., Dagnelie, O., Tenikue, M., & Sall, M. Trust, literacy and demand for microinsurance in Senegal. Forthcoming.
- Key Words: health microinsurance, Senegal, take-up
- Type of Study: Quantitative, using experimental games to assess the discount rate preferences, risk aversion, subjective expectations, and trust behaviors of target clients.
- Urban/Rural: Unknown
- Program: Health microinsurance offered by the MFI PAMECAS.
- Questions Addressed: What are the determinants of demand for health microinsurance?

65. *Lepine, A., Le Nestour, A., & Mbaye, S. Impact of the Agro-Sylvo-Pastoral health insurance scheme on health care demand and supply in Senegal. Forthcoming.
- Key Words: health microinsurance, public health insurance, Senegal, healthcare expenditures, healthcare utilization, healthcare quality, health outcomes
- Type of Study: RCT, using household and facilities surveys.
- Urban/Rural: Rural
- Program: Voluntary national agro-sylvo-pastoral insurance scheme offered by the government to all agricultural workers. The scheme covers only the policyholder and provides for 70% of the costs in health posts and health centers and 90% of costs in hospitals in exchange for payment of an annual premium.
- Questions Addressed: What are the impacts on health care access, out-of-pocket spending, children's malnutrition, agricultural productivity, and healthcare quality?

66. *Levine, D. I., Hema, N., & Ramage, I. A rigorous evaluation of micro-health insurance in Cambodia. Forthcoming.
- Key Words: health microinsurance, life microinsurance, Cambodia, health outcomes, business case
- Type of Study: RCT, using household surveys of insured and uninsured households over a 4 year period
- Urban/Rural: Both
- Program: SKY Health Insurance, covering free drugs, out-patient and in-patient care, transportation to hospital in case of an emergency, and funeral grant
- Questions Addressed: Is health insurance a good way to increase health outcomes? Is health insurance a good way to decrease the vulnerability of poor populations? Is adverse selection an obstacle to a financially sustainable private health insurance market? What insurance prices and contracts minimize adverse selection, promote financial sustainability, and improve outcomes for the poor?

67. Limwattananon, S., Tangcharoensathien, V., & Prakongsai, P. (2007). Catastrophic and poverty impacts of health payments: Results from national household surveys in Thailand. *Bulletin of the World Health Organization, 85*, 600-606.
- Key Words: public health insurance, financial outcomes
- Type of Study: Quantitative, using household survey data to measure catastrophic expenditures and impoverishment due to household out-of-pocket payments before and after the introduction of universal health care coverage
- Urban/Rural: Both
- Program: Universal public health insurance.
- Findings: The incidence of catastrophic (out-of-pocket payments exceeding 10% of total consumption) and impoverishing expenditures decreased after introduction of universal coverage. Households using inpatient services, especially at private hospitals, were more likely to face catastrophic expenditures and

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impoverishment from out-of-pocket payments than households using outpatient services. Use of services not covered and bypassing the designated providers (prohibited under the capitation contract model without proper referrals) are major causes of catastrophic expenditures and impoverishment.

68. Long, S. K., & Masi, P. B. (2008). Access and affordability: An update on health reform in Massachusetts, Fall 2008. Health Affairs, 28, w578–w587.

- Key Words: public health insurance, United States, healthcare utilization, healthcare expenditures
- Type of Study: Quantitative natural experiment, using survey data from before and after the reform.
- Urban/Rural: Both
- Program: Massachusetts health care reform that seeks to move the state to near universal insurance coverage through expanded eligibility for public coverage, subsidized insurance, market reforms, requirements for employers, and an individual mandate.
- Findings: In the first year under reform, uninsured levels among working-age adults was reduced by almost half among those surveyed (from 13% to 7%). At the same time, access to care improved, and the share of adults with high out-of-pocket costs and problems paying medical bills dropped.

69. Long, S. K., Stockley, K., & Yemane, A. (2009). Another look at the impacts of health reform in Massachusetts: Evidence using new data and a stronger model. *American Economic Review, 99*, 508-511.

- Key Words: public health insurance, United States,
- Type of Study: Quantitative natural experiment, using data for Massachusetts and other states from the Current Population Survey to estimate differences-in-differences models.
- Urban/Rural: Both
- Program: Massachusetts health care reform that seeks to move the state to near universal insurance coverage through expanded eligibility for public coverage, subsidized insurance, market reforms, requirements for employers, and an individual mandate.
- Findings: Rates of uninsured dropped 6.6 percentage points in the first year following the reform, and there was no evidence that the expansion of public coverage led to crowding out of other coverage.

70. Manning, W. G., Newhouse, J., Duan, N., Keeler, E., & Leibowitz, A. (1987). Health insurance and the demand for medical care: Evidence from a randomized experiment. *The American Economic Review, 77*, 251-277

- Key Words: traditional health insurance, United States, healthcare utilization, health outcomes, healthcare expenditure
- Type of Study: Rand Health Insurance Experiment, an RCT comparing various health insurance plans.
- Urban/Rural: Both
- Program: Health insurance plans ranging from entirely free care to fee-for-service care with 95% coinsurance by the insured
- Findings: Reduced cost-sharing led to increased utilization of healthcare services. There were no statistically significant health benefits for a person with mean characteristics, but for low-income adults with high blood pressure, reduced cost-sharing led to a statistically significant reduction in blood pressure.

71. *McGuinness, E., & Mandel, J. (2010). Assessment of health microinsurance outcomes in the Northern Areas, Pakistan – baseline report.

- Key Words: Pakistan, health microinsurance, life microinsurance, healthcare utilization, healthcare expenditure, health outcomes, quality of care, equity
- Type of Study: Qualitative, using focus groups and key informant interviews.
- Urban/Rural: Rural
- Program: Voluntary health microinsurance product developed for the Northern Areas of Pakistan through private insurance by the Aga Khan Agency for Microfinance covering inpatient and maternity care, one outpatient consultation, and life insurance.
- Questions Addressed: Does the product help reduce out-of-pocket healthcare costs and

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lead to positive change in health-seeking behavior and health outcomes?
- Expected Findings: Greater quality of care (most people prefer the private hospitals), shorter delays in seeking care (going directly to the appropriate hospital rather than seeking referrals), and lower out-of-pocket expenditures.

72. McWilliams, J. M., Meara, E., Zaslavsky, A. M., & Ayanian, J. Z. (2007). Health of previously uninsured adults after acquiring Medicare coverage. *Journal of the American Medical Association, 298*, 2886–2894.
- Key Words: public health insurance, United States, health outcomes
- Type of Study: Quantitative, using survey data from the Health and Retirement Study from 1992-2004.
- Urban/Rural: Both
- Program: Medicare, a government-administered health insurance program providing coverage to individuals age 65 and older.
- Findings: Acquisition of Medicare coverage was associated with improved trends in self-reported health for previously uninsured adults, particularly those with cardiovascular disease or diabetes. By age 70 years, the expected difference in summary health between previously uninsured and insured adults with cardiovascular disease or diabetes was reduced by 50%.

73. *Morduch, J. Health insurance and quality of care in India. Forthcoming.
- Key Words: health microinsurance, India, quality of care, service delivery, business case, take-up
- Type of Study: Quantitative non-experimental, using surveys and key informant interviews.
- Urban/Rural: Urban
- Program: UpLift health insurance provides reimbursement for healthcare expenditures up to a cap, concessions for hospital and medical bills, check-ups, and information services.
- Questions Addressed: How does participation in a health insurance scheme affect the quality of care received by households? How can incentive or payment mechanisms for the provider affect the quality of care?
- Does insurance exacerbate or alleviate moral hazard concerns related to the provider? Does insurance help ensure that the correct treatment is administered at the correct price or does it lead to overuse by clients and providers?
- What specific features of insurance policies affect service delivery? What business partnerships and models can be designed to effectively address quality of care issues? Do households know or care about quality dimensions of insurance policies such as provider certification and preventive clinics? How do these features affect take-up and use? Do clients prefer open choice of providers and thus no quality control or restricted choice with options for quality control?
- Do institutional models (partner-agent, mutual) differ in their use of the highlighted features? What are the cost implications of including these features from the insurer's and provider's perspectives?

74. Msuya, J., Jutting, J., & Asfaw, A. (2004). Impacts of community health insurance schemes on health care provision in rural Tanzania. ZEF – Discussion Paper on Development Policy No. 82.
- Key Words: health microinsurance, community-based insurance, Tanzania, equity, healthcare expenditures, healthcare utilization, asset protection
- Type of Study: Quantitative, using household surveys of insured and uninsured in 2000.
- Urban/Rural: Rural
- Program: Community health insurance schemes initiated by the government in 1996. Members make a flat-rate contribution at harvest time.
- Findings: Religion, ethnicity, education level, and sex of the household did not affect the decision of households to join the scheme. A 1% increase in income of households was likely to increase the probability of joining the scheme by around 12.5%, and most members are non-poor households. The very poor technically get free membership, but this exemption is very narrow.
The study finds no significant differences between members and non-members in

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the use of preventive measures, but sick individuals in member households were 15% more likely to get treatment than those in non-member households. Members are better financially protected against health shocks than non-members, pay considerably less out-of-pocket at health care facilities, and are less likely to use savings or food to pay for medical care.

75. Noterman, J.-P., Criel, B., Kegels, G., & Isu, K. (1995). A prepayment scheme for hospital care in the Masisi district in Zaire: A critical evaluation. *Social Science and Medicine, 40*, 919-930.

- Key Words: health microinsurance, prepayment scheme, Zaire, business case, healthcare utilization
- Type of Study: Quantitative, using hospital admission rates and other administrative data.
- Urban/Rural: Rural
- Program: Voluntary prepayment experiment for hospital care with a fixed annual premium. In the first experiment, individuals were subscribed, and in the second, households were subscribed. The subscription date was changed to coincide with harvest time.
- Findings: Hospital admission rates were 46% before implementation of the program, 157% in the first experiment, and 93% in the second experiment. Admission rates decrease as distance from the hospital increases. There's evidence that part of the increase was due to adverse selection.

76. *Pham, K. S., & Pham, T. Does microinsurance help the poor? Evidence from the targeted health insurance program in Vietnam 2004-2008. Forthcoming.

- Key Words: health microinsurance, Vietnam, healthcare utilization, healthcare expenditures, preventative care, other risk management mechanisms, asset protection, debt protection
- Type of Study: Quantitative, using household survey data from 2004, 2006, and 2008.
- Urban/Rural: Unknown
- Program: Health Care for the Poor
- Questions Addressed: Has the program improved health seeking behaviors of the poor with respect to access to health care, out-of-pocket health spending, and preventive care behaviors? Has the program reduced the health risk exposure of the poor through lowering the chance of assets depletion and of falling into severe debt when confronted with a health shock? How can the program's effects be identified as intended effects due to the program participation and spillover effects due to the coverage of the program in the community of residence?

77. Polonsky, J., Balabanova, D., McPake, B., Poletti, T., Vyas, S., Ghazaryan, O., & Yanni, M. K. (2009). Equity in community health insurance schemes: Evidence and lessons from Armenia. *Health Policy and Planning, 24*, 209-216.

- Key Words: health microinsurance, community-based health insurance, utilization, equity
- Type of Study: Quantitative, using household surveys of insured and uninsured households in communities with and without insurance schemes.
- Urban/Rural: Rural
- Program: Community-based health insurance schemes set up by Oxfam. Households (other than the most vulnerable, who are eligible for free membership) pay quarterly premiums, and the schemes cover basic drugs and a range of primary health services.
- Findings: The schemes have achieved a high level of equity according to socio-economic status, age and gender. Utilization is higher in villages with insurance schemes, and members visited health posts at over 3.5 times the rate of non-members.

78. Quimbo, S., Florentino, J., Peabody, J. W., Shimkhada, R., Panelo C, & Solon, O. (2008). Underutilization of social insurance among the poor: Evidence from the Philippines. *PLoS ONE, 3*, e3379. doi:10.1371/journal.pone.0003379

- Key Words: social health insurance, Philippines, utilization of insurance coverage
- Type of Study: Quantitative, using data collected from the Quality Improvement Demonstration Study (QIDS) and included detailed patient information from exit interviews of children under 5 years of age conducted in seven waves among public hospital districts located in the four central

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regions of the Philippines.
- Urban/Rural: Rural
- Program: National Health Insurance Program (NHIP), administered by the Philippines Health Insurance Corporation (PhilHealth). Premiums for poor households are supported by national and local government subsidies.
- Findings: Underutilization of insurance (likelihood of not filing claims despite having legitimate insurance coverage) averaged about 15% throughout the study period, but declined over time.

79. Ranson, M. K. (2001). The impact of SEWA's Medical Insurance Fund on hospital utilization and expenditure: A household survey. Health, Nutrition and Population Discussion Paper. Washington, DC: World Bank.
- Key Words: health microinsurance, community-based, India, healthcare utilization, healthcare expenditures, equity
- Type of Study: Quantitative, using surveys of insured and uninsured women.
- Urban/Rural: Both
- Program: Medical Insurance Fund, offered as part of the Self Employed Women's Association (SEWA) voluntary Social Security Scheme (which also includes life and asset insurance), which reimburses members for hospitalization (up to a cap) with exclusions for certain chronic conditions.
- Findings: Membership was not significantly associated with increased frequency of hospitalization, but there was a significant association with lower costs of hospitalization net of reimbursement. The program succeeded in reaching the poorest (there was no significant difference in levels of membership between income groups). Low utilization may have been due to lack of awareness of benefits and costs and difficulty of submitting a claim.

80. Ranson, M. K. (2002). Reduction of catastrophic health care expenditures by a community-based health insurance scheme in Gujarat, India: Current experiences and challenges. *Bulletin of the World Health Organisation, 80*, 613-621.
- Key Words: health microinsurance, community-based, India, healthcare expenditures, equity
- Type of Study: Quantitative, using claims history of a 6-year period.
- Urban/Rural: Both
- Program: Medical Insurance Fund, offered as part of the Self Employed Women's Association (SEWA) voluntary Social Security Scheme (which also includes life and asset insurance), which reimburses members for hospitalization (up to a cap), with exclusions for certain chronic conditions.
- Findings: The mean household income of claimants was significantly lower than that of the general population, and the percentage of households below the poverty line was similar for claimants and the general population. Reimbursement more than halved the percentage of catastrophic hospitalizations (>10% of annual household income) and hospitalizations resulting in impoverishment. Frequency of submission of claims was only 22-37% of the estimated frequency of hospitalization.

81. Ranson, M.K., Sinha, T., Chatterjee, M., Acharya, A., Bhavsar, A., Morris, S. S., & Mills, A. J. (2006). Making health insurance work for the poor: Learning from the Self-Employed Women's Association's (SEWA) community-based health insurance scheme in India. Social Science & Medicine, 62, 707–720.
- Key Words: health microinsurance, community-based, India, equity
- Type of Study: Quantitative, using household surveys of the general population from which Vimo SEWA draws its members, Vimo SEWA 2003 members, and those who submitted claims.
- Urban/Rural: Both
- Program: Voluntary health insurance offered as part of the Self Employed Women's Association's (SEWA) Vimo SEWA (which also includes life and asset insurance), which reimburses members for hospitalization (up to a cap), with exclusions for certain chronic conditions.
- Findings: Membership is inclusive of the poorest, with 32% of rural members and 40% of urban members, drawn from households below the 30th percentile of socio-economic status. Submission of claims is equitable

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in the city but inequitable in rural areas. The financially better off in rural areas are significantly more likely to submit claims than are the poorest, and men are significantly more likely to submit claims than women.

82. Ranson, M. K., Sinha, T., Chatterjee, M., Gandhi, F., Jayswal, R., Patel, F. ... Mills, A. J. (2007). Equitable utilization of Indian community-based health insurance scheme among its rural membership: Cluster randomised controlled trial. *British Medical Journal 334*, 1309. doi:10.1136/bmj.39192.719583.AE

- Key Words: health microinsurance, socioeconomic status, equity, healthcare utilization
- Type of Study: RCT, using pre- and post-intervention household survey data. Interventions were after sales service and supportive supervision (including educational house visits and a reminder piece for the wall), and prospective reimbursement (making arrangements with 2 hospitals so members could be reimbursed before discharge), implemented singly and together.
- Urban/Rural: Rural
- Program: SEWA community-based health insurance, covering inpatient care up to a maximum.
- Findings: Interventions did not appear to have any impact on knowledge about the program. Rates of claims increased significantly, on average by 21.6 per 1000 members. Differences between the intervention groups and the standard scheme were not significant. Neither time nor interventions had any systematic effect on the socioeconomic status of claimants relative to members in the same sub-district. Qualitative interviews indicated that members greatly appreciated the home visits.

83. Rao, K. D., Waters, H., Steinhardt, L., Alam, S., Hansen, P., & Naeem, A.J. (2009). An experiment with community health funds in Afghanistan. *Health Policy and Planning, 24*, 301-311.

- Key Words: health microinsurance, Afghanistan, healthcare utilization, healthcare expenditures, take-up, business case
- Type of Study: Quantitative, using household surveys and administrative data.
- Urban/Rural: Rural
- Program: Community Health Funds, piloted by the government in partnership with various NGOs and Johns Hopkins University. Subscription is voluntary and covers inpatient and outpatient care with a nominal co-payment and free drugs. Membership is free and co-payments are waived for the poorest.
- Findings: Members had significantly higher utilization of healthcare services, but no evidence of reduced out-of-pocket spending (compared to before implementation of the program) was observed. The main reasons for not enrolling were being unaware of the program, high premiums, and perceived low quality of services. The study also analyzes enrollment and cost-recovery.

84. *Rutten, F. Dror, D., Rösner, H.-J., & Radermacher, R. Efficient and responsive community-based health insurance. Forthcoming.

- Key Words: health microinsurance, India, healthcare utilization, healthcare expenditures
- Type of Study: RCT, using 3 waves of household surveys.
- Urban/Rural: Unknown
- Program: Community-based health insurance. Details not yet determined.
- Questions Addressed: Does affiliation with a community-based micro health insurance unit improve access to healthcare? What impact does community-based micro health insurance have on health-related financial exposure and socioeconomic characteristics? How can implementation of a community-based micro health insurance scheme be made more efficient?

85. *Sautmann, A. Evaluation of the Action for Health Program of the Mali Health Organizing Project. Forthcoming.

- Key Words: health microinsurance
- Type of Study: not available
- Urban/Rural: not available
- Program: Health insurance that offers free health care in exchange for regular community work.
- Questions Addressed: Comparison of this program to other forms of health care

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funding, in particular free care and more standard insurance schemes.

86. Schneider, P., & Diop, F. (2001). Synopsis of results on the impact of community-based health insurance on financial accessibility to health care in Rwanda. Health, Nutrition and Population Family Discussion Paper. Washington, DC: World Bank.

- Key Words: health microinsurance, community-based, Rwanda, take-up, healthcare utilization, healthcare expenditures, equity, take-up
- Type of Study: Quantitative, using household surveys of member and non-member households.
- Urban/Rural: Rural
- Program: Community-based mutual health associations covering, with co-payments, basic health care services and drugs in local centers and transfer to a district hospital, where a limited package is covered.
- Findings: Insurance enrollment is determined by household characteristics such as the health district of residence, education level of household head, family size, distance to the health facility, and radio ownership, whereas health and economic indicators did not influence enrollment. Members report up to five times higher health service use than nonmembers. Health insurance has significantly improved equity in health service use for members while at the same time out-of-pocket spending has gone down per episode of illness.

87. Schneider, P., & Hanson, K. (2006). Horizontal equity in utilization of care and fairness of health financing: A comparison of micro-health insurance and user fees in Rwanda. *Health Economics, 15*, 19-31.

- Key Words: health microinsurance, community-based, Rwanda, take-up, healthcare utilization, healthcare expenditures, equity
- Type of Study: Quantitative, using cross-sectional household survey data. Indirect standardization is used to examine how out-of-pocket payments for care effect horizontal inequity in utilization of care and how the minimum standard approach quantifies the extent to which health payments cause household income to drop below the poverty line.
- Urban/Rural: Rural
- Program: Health insurance covering drugs and services provided in the program's health centers and hospitalization with a referral from the health center. Members pay co-payments, and certain illnesses and drugs are excluded.
- Findings: Sick insured individuals report a higher visit rate than the uninsured, and distribution of visits matches their distribution of need for care (based on symptoms reported in the survey). Health spending had only a small impact on the socio-economic situation of uninsured and insured households due to the difference in utilization.

88. Schneider, P., & Racelis, R. (2004). The impact of PhilHealth indigent insurance on utilization, cost, and finances in health facilities in the Philippines. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc.

- Key Words: health microinsurance, public health insurance, Philippines, healthcare utilization, healthcare expenditures, equity, business case
- Type of Study: Quantitative, using monthly data collected in rural health units and hospitals to evaluate the financial situation in facilities, availability of drugs and other medical supplies, utilization of medical and family planning serves, and recurrent costs of providing care in rural health units.
- Urban/Rural: Rural
- Program: PhilHealth's Indigent Program, an insurance plan for the poor subsidized by the local government and administered by mayors that provide care free of charge.
- Findings: Higher enrollment rates lead to a higher proportion of total provider revenue paid by PhilHealth, improved management of drugs and family planning, and higher utilization rates for the insured (compared to the insured in low-enrollment areas). However, overall utilization rates in rural health units are very low. Analysis suggests that rural health units are operating under capacity signifying wasted resources.

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89. *Sikod, F., & Abba, I. Targeting the poor by community-based health insurance schemes in Cameroon. Forthcoming.

- Key Words: health microinsurance, Cameroon, demand, healthcare utilization
- Type of Study: Unknown
- Urban/Rural: Unknown
- Program: Community-based health insurance.
- Questions Addressed: How effective are government interventions aimed at improving access to health services for the poor through promotion of community based health insurance schemes?

90. Smith, K. V., & Sulzbach, S. (2008). Community-based health insurance and access to maternal health services: Evidence from three West African countries. *Social Science and Medicine, 66*, 2460-2473.

- Key Words: health microinsurance, Senegal, Mali, Ghana, healthcare utilization
- Type of Study: Quantitative, using household surveys of insured and uninsured households.
- Urban/Rural: Both
- Program: Various community-based health insurance schemes in Ghana, Mali, and Senegal, which provide partial coverage of prenatal care, normal delivery (Mali and Senegal only), and complicated delivery care through community health centers and regional hospitals.
- Findings: Membership is positively associated with the use of maternal health services, particularly in areas where utilization rates are very low and for more expensive delivery-related care. Membership, however, is not sufficient to influence maternal health behaviors; it is the inclusion of maternal health care in the benefits package that makes a difference. In Mali, insurance coverage does not result in lower delivery care expenditures, which may be due to low knowledge about covered services or choosing out-of-network providers.

91. Sparrow, R., Suryahadi, A., & Widyanti, W. (2010). Social health insurance for the poor: Targeting and impact of Indonesia's Askeskin Program. Jakarta, Indonesia: SMERU Research Institute.

- Key Words: health microinsurance, public health insurance, healthcare utilization, healthcare expenditures, equity
- Type of Study: Quantitative, using household panel data from a national socioeconomic survey conducted in 2005 and 2006.
- Urban/Rural: Both
- Program: Askeskin subsidized social health insurance for the poor and the informal sector, covering basic healthcare in public health clinics and hospital inpatient care.
- Findings: The program succeeds in targeting the poor and those most vulnerable to catastrophic out-of-pocket health payments. The program improves access to healthcare in that it increases utilization of outpatient healthcare among the poor. The study does not find evidence of substitution effects from private to public care, but out-of-pocket spending seems to have increased slightly for the insured in urban areas, most likely because the cost of hospital care is not fully covered. The reported frequency of inpatient care is too low for a robust empirical analysis.

92. Starr-McCluer, M. (1996). Health insurance and precautionary savings. *American Economic Review, 86*, 285–295

- Key Words: traditional private health insurance, public health insurance, United States, savings
- Type of Study: Quantitative, using data from the 1989 Survey of Consumer Finances measuring household wealth, health status, and insurance coverage.
- Urban/Rural: Both
- Program: Various private and public health insurance plans.
- Findings: Even controlling for age, permanent income, and other factors, households with insurance have significantly higher savings than households without coverage. While selection bias may exaggerate the positive effect, it does not appear to explain away the result. Asset tests for Medicaid and unmeasured differences in income may also contribute.

93. Sun, X., Jackson, S., Carmichael, G., & Sleigh, A. (2009). Catastrophic medical payment and financial protection in rural China: Evidence from the New Cooperative Medical Scheme in

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Shandong Province. *Health Economics, 18*, 103-119.

- Key Words: health microinsurance, cooperative, China, healthcare expenditures
- Type of Study: Quantitative, using interviews of households at risk for catastrophic payments.
- Urban/Rural: Rural
- Program: New Cooperative Medical Scheme (NCMS), a voluntary scheme supported and organized by the government. Members pay premiums and co-payments for services.
- Findings: Before the NCMS reimbursements, 8.98% of the population had catastrophic out-of-pocket payments, compared with 8.25% after reimbursement. Catastrophic severity for households remaining in catastrophe after reimbursement dropped by 18.7% to an average of 6.34 times the household's capacity to pay.

94. Thornton, R., Field, E., Hatt, L., Islam, M., & Solís, F. (2009). Social security insurance for the informal sector in Nicaragua.

- Key Words: health microinsurance, Nicaragua, healthcare expenditures, health outcomes, healthcare utilization, take-up, retention
- Type of Study: RCT that randomly varied costs (financial, informational, and convenience) of signing up for insurance. Data were collected using baseline and 1-year follow-up surveys and administrative data on insurance affiliation.
- Urban/Rural: Urban
- Program: Voluntary health insurance offered by the Nicaraguan Social Security Institute (INSS), using MFIs as delivery agents, providing a comprehensive package of preventive, diagnostic, and curative health services. The subscriber's pregnant wife and dependent children up to age 12 are also covered.
- Findings: Cost of premiums and streamlined bureaucratic procedures were important determinants of enrollment, while the participation of MFIs had only a minor effect on take-up. Although insured individuals substituted towards services at covered facilities and total out-of-pocket expenditures fell, they fell by less than the insurance premiums. The study finds no evidence of an increase in health care utilizations among the newly insured. Retention rates after the expiration of the subsidy are very low, with less than 10 percent still enrolled after one year.

95. Trujillo, A., Portillo, J., & Vernon, J. (2005). The impact of subsidized health insurance for the poor: Evaluating the Colombian experience using propensity score matching. *International Journal of Health Care Finance and Economics, 5*, 211-239.

- Key Words: health microinsurance, Colombia, healthcare utilization
- Type of Study: Quantitative, using household surveys of insured and uninsured households, and employing propensity score matching and instrumental variable estimation techniques to measure the impact of the subsidy on healthcare utilization.
- Urban/Rural: Both
- Program: Colombian Health Insurance Subsidy Program, which provides subsidized health insurance to low income and disadvantaged groups. Patients enrolled in the program pay a coinsurance rate of 5-30% depending on their income.
- Findings: The program greatly increased utilization of healthcare services.

96. Wagstaff, A. (2007). Health insurance for the poor: Initial impacts of Vietnam's health care fund for the poor. Policy Research Working Paper # WPS 4134. Washington DC: World Bank.

- Key Words: public health insurance, Vietnam, healthcare utilization, healthcare expenditures, equity
- Type of Study: Quantitative, using data from the 2004 Vietnam Household and Living Standard Survey to compare healthcare utilization and spending of covered individuals to comparable individuals who are not covered, using propensity score matching.
- Urban/Rural: Both
- Program: Vietnam's Health Care Fund for the Poor (HCFP), which uses government revenues to finance health care for poor, ethnic minorities living in selected mountainous provinces designated as difficult, and all households living in

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communes officially designated as highly disadvantaged. Beneficiaries are eligible for free care at commune health centers and public hospitals and free prescription drugs. The package excludes informal payments to providers, as well as payments for private facilities and non-prescription drugs.
- Findings: The program has substantially increased service utilization, especially inpatient care (measured by probability of a visit and number of visits), and has reduced the risk of catastrophic spending. It has not, however, reduced average out-of-pocket spending, and appears to have negligible impacts on utilization among the poorest.

97. Wagstaff A., Lindelow, M. (2008). Can insurance increase financial risk? The curious case of health insurance in China. *Journal of Health Economics, 27*, 990-1005.
- Key Words: health microinsurance, China, healthcare expenditures
- Type of Study: Quantitative, using data from the China Health and Nutrition Survey, the Gansu Survey of Children and Families, and the World Bank China Health VIII Project Baseline Survey.
- Urban/Rural: Both
- Program: Various health insurance schemes.
- Findings: In all three surveys, health insurance increases the risk of high and catastrophic spending. Analysis suggests that this is due to the fact that insurance encourages people to seek care when sick and to seek care from higher-level providers. Notes: Annual spending is 'high' if it exceeds a threshold of local average income and 'catastrophic' if it exceeds a threshold of the household's own per capita income

98. Wagstaff, A., Lindelow, M., Jun, G., Ling, X., & Juncheng, Q. (2009). Extending health insurance to the rural population: An impact evaluation of China's New Cooperative Medical Scheme. *Journal of Health Economics, 28*, 1-19.
- Key Words: health microinsurance, China, healthcare utilization, healthcare expenditures, equity
- Type of Study: Quantitative, combining differences-in-differences with matching methods to obtain impact estimates, using data collected from program administrators, health facilities and household surveys in 2003 and 2005.
- Urban/Rural: Rural
- Program: New Cooperative Medical Scheme (NCMS), a voluntary scheme supported and organized by the government. Members pay premiums and co-payments for services.
- Findings: The program has increased outpatient and inpatient utilization and has reduced the cost of deliveries. It has not reduced out-of-pocket expenses per typical outpatient visit or inpatient spell, and out-of-pocket payments overall have not been reduced. The study finds heterogeneity across income groups and implementing counties. Impact of the program on the use of outpatient care has been lower among the poor in terms of use of services at higher level facilities but higher in terms of use at lower level facilities.

99. Wagstaff, A., & Pradhan, M. (2005). Health insurance impacts on health and nonmedical consumption in a developing country. World Bank Policy Research Working Paper 3563. Washington, DC: World Bank.
- Key Words: health microinsurance, Vietnam, health outcomes, out-of-pocket spending, nonmedical consumption
- Type of Study: Quantitative, using propensity score matching on panel data from the Vietnam Living Standards Survey in 1992/93 (just before the introduction of the program) and 1997/98.
- Urban/Rural: Both
- Program: Vietnam Health Insurance (VHI), Vietnam's social health insurance program, which was compulsory for certain workers (covering fees for inpatient and outpatient care and costs of drugs used in inpatient care) and voluntary for children (covering only inpatient care). The payment for compulsory workers is split between the worker and the employer, and no copayments were required during the survey years.
- Findings: The program had a favorable impact on anthropometric measures in adults (BMI) and children (height-for-age and weight-for-age). Among young children, VHI increases use of primary care facilities and

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leads to substitution away from pharmacists as a source of advice and non-prescribed medicines. Among older children and adults, VHI results in an increase in the use of hospital inpatient and outpatient departments. VHI causes a reduction in annual out-of-pocket expenditures on health and an increase in nonmedical household consumption that is larger than the decrease in expenditures.

100. Wang, H., Yip, W., Zhang, L., & Hsiao, W. C. (2009). The impact of rural mutual health care on health status: Evaluation of a social experiment in rural China. *Health Economics, 18*, S65–S82. doi: 10.1002/hec.1465

- Key Words: health microinsurance, China, health outcomes, equity
- Type of Study: Quantitative, using household and individual surveys of the insured and uninsured one year prior to implementation of the program and 2 years after implementation, employing a differences-in-differences approach with propensity score matching. Health status is measured using (1) a 5-point CRS to represent overall health status (excellent, very good, good, fair, or poor) and (2) the EQ-5D instrument, which defines health in terms of five (self-reported) dimensions: mobility, self-care, usual activities (work, study, housework, family, or leisure), pain/discomfort, and anxiety/depression.
- Urban/Rural: Rural
- Program: Rural Mutual Health Care (RMHC), a community-based health insurance scheme that includes both outpatient services and hospital services with no deductible, designed as part of the New Cooperative Medical System (NCMS).
- Findings: The program has a positive effect on the health status of participants. RMHC significantly reduces self-reported pain/discomfort and anxiety/depression for the general population and has a positive impact on mobility and usual activity for those over 55-years old. The effects of RMHC vary by age and illness (older and less healthy people benefit more), but not by income and gender.

101. Waters, H. R. (1999). Measuring the impact of health insurance with a correction for selection bias – A case study of Ecuador. *Health Economics, 8,* 473-483.

- Key Words: health microinsurance, Ecuador, healthcare utilization
- Type of Study: Quantitative, using data from the 1995 Ecuador Living Standards Measurement Survey.
- Urban/Rural: Both
- Program: General Health Insurance (GHI) program, which primarily covers workers in the formal sector of the economy, and the Seguro Campesino Social (SSC) program, directed at farming populations. Both are run by the Ecuadorian Social Security Institute and are providers of healthcare as well as insurers.
- Findings: GHI has a strong positive association with the use of curative health care after correcting for selection bias, but no significant effect on the use of preventive care. Individuals with severe illnesses who are eligible for GHI have a preference for private health care and self-select out of the GHI program. SSC has positive but insignificant associations with both curative and preventive care.

102. Xu, K., Evans, D. B., Kadama, P., Nabyonga, J., Ogwal, P. O., Nabukhonzo, P., & Aguilara, A. M. (2006). Understanding the impact of eliminating user fees: Utilization and catastrophic health expenditures in Uganda. Social Science & Medicine, 62, 866-876.

- Key Words: public health insurance, healthcare utilization, healthcare expenditures
- Type of Study: Quantitative, using data from National Household Surveys undertaken in 1997, 2000 and 2003.
- Urban/Rural: Both
- Program: Abolition of user fees at government health facilities.
- Findings: Utilization increased for the non-poor but at a lower rate than it had in the period immediately before fees were abolished. Utilization among the poor increased much more rapidly after the abolition of fees than beforehand. The incidence of catastrophic health expenditure among the poor did not fall,

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most likely because frequent unavailability of drugs at government facilities after 2001 forced patients to purchase from private pharmacies. Informal payments to health workers may also have increased to offset the lost revenue from fees.

103. Yip, W. & Berman, P. (2001). Targeted health insurance in a low income country and its impact on access and equity in access: Egypt's school health insurance. *Health Economics, 10*, 207-220.

- Key Words: public health insurance, Egypt, healthcare utilization, equity
- Type of Study: Quantitative, using data from the Egypt Household Health Care Utilization and Expenditure Survey conducted in 1994/1995 to measure the impact of SHIP on outpatient utilization, financial protection, and equity of access in schoolchildren aged 6-18. The study uses a model developed in the Rand Health Insurance Experiment (logit model estimating the individual child's probability of visiting a formal care provider; log-linear model that estimates the incurred level of out-of-pocket expenditures, conditioning on positive use of health care services).
- Urban/Rural: Both
- Program: School Health Insurance Programme (SHIP), a government subsidized health insurance scheme that targets school children, covering preventive services, outpatient care, inpatient care, subsidized pharmaceuticals and medical appliances. Parents pay annual premiums and co-payments. All school children are covered, but at the time of the survey, the program was still being phased in thus 14% of children in school didn't have SHIP. 25.6% of children were not in school.
- Findings: SHIP significantly increased visit rates and reduced out-of-pocket expenditures. Conditional upon being covered, the SHIP reduced the differentials in visit rates between the highest and lowest income children. However, only the middle-income children benefitted from reduced financial burden (within group equity). By targeting the children through school enrollment, the SHIP increased differentials in the average level of access between school-going children and those not attending school (who tend to be rural and/or poor).

104. Young, P. (2006). Microinsurance: Exploring ways to assess its impact.

- Key Words: health microinsurance, life microinsurance, emergency loans, risk-taking incentives, peace of mind value, understanding of products
- Type of Study: Qualitative, using focus groups and interviews.
- Urban/Rural: Both
- Programs: FINCA Uganda's Personal Accident insurance (mandatory life policy which also covers some property damage), voluntary health policy offered to FINCA through Microcare, and members of Save for Health Uganda (not insurance; provides emergency loans, and in some groups a mixed product of emergency loans and insurance).
- Findings: Respondents with health coverage, through either microinsurance or emergency credit, were more likely to seek medical treatment early on and follow the full and appropriate course of treatment than respondents without cover. Health insurance policyholders indicated an increased feeling of safety and a greater likelihood of taking preventative health precautions, and health insurance was also said to help decrease the financial burden associated with a health shock. Customers of FINCA's group-accident policy did not report behavior changes, which may be due to the short policy term (limited to the loan term) and the lack of knowledge of the product.

Agricultural Insurance

105. Breustedt, G., Bokusheva, R., & Heidelbach, O. (2008). Evaluating the potential of index insurance schemes to reduce crop yield risk in an arid region. *Journal of Agricultural Economics, 59*, 312-328. doi: 10.1111/j.1477-9552.2007.00152.x

- Key Words: weather index insurance, area yield index insurance, farm yield insurance, Kazakhstan, take up
- Type of Study: Non-experimental quantitative, using farm yield data applied to models

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of insurance schemes to evaluate the risk reduction based on farm-level yields through three different insurance contracts: weather index, area yield index, and farm yield. The study uses a mean variance (MV) approach and also a second-degree stochastic dominance criterion (SSD).
- The MV approach compares insurance schemes pair-wise by the sample mean of the relative variance reduction, by the number of farms with a (significant) variance reduction, and by the number of farms that generate a significantly higher variance reduction with one insurance scheme than the other. The SSD approach compares the insurance schemes by the sample mean of the relative variance reduction, by the number of farms with a significant stochastically dominant insurance scheme over not insuring, as well as by the number of farms for which one insurance scheme is significantly SSD over another.
- Urban/Rural: Rural
- Program: Hypothetical index insurance products.
- Findings: None of the three insurance schemes provide statistically significant risk reduction for every single farm. Weather-based index insurance is found to provide less risk reduction than area yield insurance based on the rayon (county) yield. Rayon yield index insurance can reduce yield risk more effectively for Kazakhstan's wheat producers than farm yield insurance with a low strike yield.

106. Cai, H., Chen, Y., Fang, H., & Zhou, L.-A. (2010). Microinsurance, trust, and economic development: Evidence from a randomized natural field experiment.
- Key Words: agricultural insurance, China, business investment, marketing, trust
- Type of Study: RCT, where animal husbandry workers (AHWs) who market insurance were assigned at the village level into different incentive schemes where their salary would be, to a varying degree, dependent on the number of sow insurance purchases across different villages. In the control group, AHWs received a fixed reward of 50 Yuan with no incentives, in the low incentive group, AHWs received a fixed amount of 20 Yuan and 2 Yuan per insured sow, and in the high incentive group, AHWs received a fixed amount of 20 Yuan and 4 Yuan per insured sow.
- Urban/Rural: Rural
- Program: Coverage for deaths of sows caused by major diseases, natural distress, and accidents offered by the Property and Casualty Company (PCC) of the People's Insurance Group of China. Premiums are 80% subsidized by the government.
- Findings: Having formal insurance significantly increased a farmer's tendency to raise sows. Lack of trust for government-sponsored insurance products is a significant barrier for farmers' willingness to participate in the program, despite partial premium subsidy.

107. *Carter, M., Boucher, S., & Trivelli, C. Area-Based Yield Insurance (ARBY) for Cotton Producers in Pisco Valley, Peru. Forthcoming.
- Key Words: agricultural microinsurance, Peru, demand, business investment
- Type of Study: RCT, using administrative data, household surveys, and experimental games.
- Urban/Rural: Rural
- Program: AgroPositiva, an index-based crop insurance product that provides payouts and interest rate reduction on loans, linked to yield index.
- Questions Addressed: Will crop insurance reduce non-price rationing in rural credit markets by increasing credit supply (reducing quantity rationing) and increasing effective demand (reducing risk rationing)? What is the impact of insurance on economic well-being and asset accumulation of farming households? What is the demand for insurance, including its price sensitivity?

108. Chantarat, S., Mude, A. G., Barrett, C. B., & Turvey, C. G. (2010). The performance of index based livestock insurance: Ex ante assessment in the presence of a poverty trap. (Under review).
- Key Words: agricultural microinsurance, Kenya, demand, asset protection, equity
- Type of Study: Initial, ex ante impact assessment related the scheduled commercial launch of the program in January 2010, studying how performance varies based on variation in household characteristics and key basis risk and risk

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preference parameters, which are estimated from panel data and field experiments.
- Urban/Rural: Rural
- Program: Index-based, using the average herd mortality rate predicted by the historical relationship with satellite-based Normalized Differential Vegetation Index (NDVI) measures, an indicator of vegetative cover widely used in drought monitoring programs.
- Findings: Household initial herd size (ex ante wealth) is the key determinant of the product's performance, more so than household risk preferences or basis risk exposure. The product works least well for the poorest. The product is most valuable for the vulnerable non-poor, for whom insurance can stem collapses in herd size following predictable shocks. Demand appears to be highly price elastic, and willingness to pay is, on average, much lower than commercially viable rates.

109. *Clarke, D., & Macchiavello, R. Experimenting with group crop insurance design. Forthcoming.
- Key Words: agricultural microinsurance, Ethiopia, expenditures, business case
- Type of Study: Quantitative, using laboratory experiments.
- Urban/Rural: Rural
- Program: Group crop insurance.
- Questions Addressed: What is the potential of developing new insurance contracts that pay out to groups of farmers above a certain group-level co-payment? How well does group excess of loss-style crop insurance perform relative to individual insurance (including weather index insurance)?

110. *Cole, S., & Gaurav, S. Financial literacy for weather insurance. Forthcoming.
- Key Words: agricultural microinsurance, India
- Type of Study: Experimental.
- Urban/Rural: Rural
- Program: Financial literacy.
- Questions Addressed: What is the impact of financial literacy on risk-management behavior? Answered by testing a financial literacy module on weather risk hedging with villagers in Gujarat, India.

111. *Cole, S., Tobacman, J., & Chattopadhyay, R. Impact evaluation and product design of weather insurance.
- Key Words: weather index microinsurance, India, business investment, household investment, demand
- Type of Study: RCT using administrative data, surveys.
- Urban/Rural: Rural
- Questions Addressed: What is the impact of providing rainfall insurance on income, consumption and investment decisions of households? What determines the take-up of rainfall insurance?

112. *de Janvry, A., Sadoulet, E., & Cai, J. Impacts of trust on agricultural insurance take-up. Forthcoming.
- Key Words: agricultural microinsurance, area yield, China, take up, trust
- Type of Study: Randomized experiments.
- Urban/Rural: Unknown
- Program: Area-based yield rice insurance contract offered to farmers in the rural areas by People's Insurance Company of China.
- Questions Addressed: What is the effect of trust on people's take-up decisions, and what are the best instruments and mechanisms to build trust?

113. Giné, X., Menand, L., Townsend, R., & Vickery, J. (2010). Microinsurance: A case study of the Indian rainfall index insurance market. World Bank Policy Research Working Paper No. 5459. Washington, DC: World Bank.
- Key Words: India, agricultural microinsurance, investment incentives, demand, business case
- Type of Study: Qualitative, describing the basic structure of rainfall insurance contracts commonly sold in India, and presentation of some stylized facts on the distribution of returns on the insurance.
- Urban/Rural: Rural
- Program: Policies cover rainfall during the primary monsoon season, dividing it into three phases that are each 35-45 days in length. Payments are linked to the rainfall index on a local gauge at select times throughout the monsoon season. Marketing and distribution are performed by BASIX, a

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large microfinance institution.
- Findings: Demand is very price-sensitive. Without insurance, farmers engage in income smoothing activities (such as under-investing in fertilizer to maintain savings) that lower average income.

114. Giné, X., Townsend, R., & Vickery, J. (2007). Statistical analysis of rainfall insurance payouts in southern India. *American Journal of Agricultural Economics, 89*, 1248-1254.
- Key Words: agricultural microinsurance, India, weather index, catastrophic expenditures, business case
- Type of Study: Quantitative, using historical rainfall data to estimate a putative history of payouts on index insurance policies.
- Urban/Rural: Rural
- Program: Index-linked policies offered by ICICI Lombard with payouts based on rainfall index during 3 growing seasons.
- Findings: Policies primarily insure against the extreme tail of adverse rainfall events.

115. Giné, X., Townsend, R., & Vickery, J. (2008). Patterns of rainfall insurance participation in rural India. *World Bank Economic Review, 22*, 539-566. doi:10.1093/wber/lhn015.
- Key Words: agricultural microinsurance, weather index, India, take-up
- Type of Study: Quantitative, using household surveys in villages where insurance was sold and was not sold but were identified by BASIX as appropriate for insurance sales.
- Urban/Rural: Rural
- Program: Rainfall index insurance offered by ICICI Lombard through local financial institutions (BASIX in the survey villages).
- Findings: Credit constraints are an impediment to purchasing insurance. Limited familiarity with the product plays a key role in participation decisions: take-up rates are higher amongst the previously insured; risk averse households are less likely to purchase insurance, but only among households not familiar with insurance; households connected to village networks are more likely to purchase insurance, especially when other members of the household's primary group participate; respondents who likely have lower cognitive costs of understanding and experimenting with insurance (young and self-identified 'progressive' farmers) are more likely to purchase; and in self-reports, a significant fraction of households cite advice from other farmers and limited understanding of the product as important determinants of participation decisions.

116. Giné, X., & Yang, D. (2009). Insurance, credit, and technology adoption: Field experimental evidence from Malawi. *Journal of Development Economics, 89*, 1–11.
- Key Words: agricultural insurance, Malawi, business investment, crowding out, demand
- Type of Study: Randomized field experiment, where half of the farmers were offered credit to purchase hybrid seeds and the other half were offered a similar credit package but were also required to purchase insurance.
- Urban/Rural: Rural
- Program: An index-based weather insurance policy, priced at actuarially fair rates that partially or fully forgave the loan in the event of poor rainfall.
- Findings: Take-up of the loan was lower by 13 percentage points among farmers offered insurance with the loan. A potential explanation is that farmers are already implicitly insured due to the limited liability inherent in the loan contract. Among farmers offered the insured loan, take-up is positively associated with a farmer's education, income, and wealth. These variables may proxy for the farmer's income in the low state (a measure of default costs, if crop output can be seized by the lender).

117. Goodwin, B. K., Vandeveer, M. L., & Deal, J. L. (2004). An empirical analysis of acreage effects of participation in the Federal Crop Insurance Program. *American Journal of Agricultural Economics, 86*, 1058–1077.
- Key Words: crop insurance, United States, business investment
- Type of Study: Empirical analysis of the effects of crop insurance participation on acreage allocation decisions using pooled cross-sectional, time-series data collected at the county level from a variety of sources.
- Urban/Rural: Rural
- Program: US federal crop insurance program

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(most policies are yield-based or revenue-based)
- Findings: Increased participation in insurance programs provokes statistically significant acreage responses (more land being brought into production) in some cases, though the response is very modest in every case.

118. Hess, U. (2003). Innovative financial services for rural India: Monsoon-Index lending and insurance for small-holders, ARD Working Paper 9. Washington, DC: World Bank.
- Key Words: rainfall index microinsurance, India, alternative risk management strategies
- Type of Study: Proposes a model for an integrated loan insurance and risk management product and tests the model using production and rainfall data from India.
- Urban/Rural: Rural
- Program: Integrated crop loan insurance and risk management product comprised of (1) monsoon index insurance (payouts linked to specific, extreme rainfall outcomes), (2) risk management account (which the farmer can dip into when weather index insurance doesn't adequately compensate losses), (3) weather risk reinsurance (which keeps prices more competitive), and (4) a smart card (debit or credit card through which a farmer can access his account).
- Findings: The scheme could help banks significantly increase their lending volumes and could help bring down default rates as well as transaction costs to banks. It could help farmers stabilize their incomes and possibly allow farmers access to a greater credit line thanks to enhanced collateral.

119. Hill, R. V., & Robles, M. (2010). Flexible insurance for heterogeneous farmers: Results from a small scale pilot in Ethiopia.
- Key Words: weather index microinsurance, Ethiopia, demand, client education, business investment
- Type of Study: Quantitative, using survey data from a previous study and experimental games, followed by surveys conducted in connection with a pilot. Experimental game involved offering 6 types of weather securities to farmers, individually or through local iddirs (funeral associations that provide funeral insurance, health-care loans and livestock insurance to members). Farmers were given cash to make purchases in the game.
- Urban/Rural: Rural
- Program: Generic weather index securities offered by Nyala Insurance Company (NISCO) that are not linked to a specific crop, allowing farmers to build their own portfolio by buying securities for the rainfall risk they are most concerned about.
- Findings: High take-up rates were observed in both the experimental game and the pilot. Rainfall requirements vary across farms within close geographic areas. Training leaders of groups and encouraging those leaders to train their members was more effective in developing understanding of the securities than training randomly selected individuals. Crop and production choices and soil characteristics have some explanatory power for security choices.

120. Hill, R. V., & Viceisza. A. (2010). An experiment on the impact of weather shocks and insurance on risky investment. IFPRI Discussion Paper 00974. International Food Policy Research Institute.
- Key Words: agricultural insurance, Ethiopia, client education, business investment
- Type of Study: Experimental game in which farmers were given the decision whether or not to purchase fertilizer, and how much to purchase, with and without the presence of weather-index insurance.
- Urban/Rural: Rural
- Program: Participants in the game either had to purchase insurance from their own funds or were provided with a grant with which they had to purchase insurance. Insurance was actuarially fair and paid out in times of bad weather.
- Findings: Some evidence was found that insurance had a positive impact on fertilizer purchases, though results were not conclusive. Insurance had more impact for risk-averse farmers and those who understood the contract well. Purchases of insurance depended on the realization of the weather in the previous round, which is the result of both changes in wealth that weather brings about and changes in perceptions of the costs and benefits of fertilizer purchases.

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121. Horowitz, J. K., & Lichtenberg, E. (1993). Insurance, moral hazard, and chemical use in agriculture. *American Journal of Agricultural Economics, 75*, 926–935.

- Key Words: crop insurance, business investment, US
- Type of Study: Quantitative estimate of the impact of insurance purchases on farmers' chemical purchases, using farm-level survey data collected by the National Agricultural Statistical Service.
- Urban/Rural: Rural
- Program: Study looks at total expenditure on insurance (most of which authors assume to be federal crop insurance).
- Findings: Farmers purchasing insurance applied significantly more nitrogen per acre (19%), spent more on pesticides (21%), and treated more acreage with herbicides (7%) and pesticides (63%).

122. Kalavakonda, V., & Mahul, O. (2005). Crop insurance in Karnataka, World Bank Policy Research Working Paper 3654. Washington, DC: World Bank.

- Key Words: agricultural microinsurance, India
- Type of Study: Qualitative
- Urban/Rural: Rural
- Program: National Agricultural Insurance Scheme (NAIS). Insurance is compulsory for farmers with crop loans from formal financial institutions, and others may purchase it. Covers a variety of crops and pays out the loan amount for borrowers. For either borrowers or non-borrowers, can be extended up to the value of 150% of average crop yield. Payouts are determined using an area-yield approach.
- Findings: The program is in many ways complex, inefficient, and unresponsive. The most serious problem is the delay in claim settlement (on average it takes a full year to pay claims).

123. Karlan, D., Kutsoati, E., McMillan, M., & Udry, C. (In press). Crop price indemnified loans for farmers: A pilot experiment in rural Ghana. *Journal of Risk and Insurance*

- Key Words: agricultural insurance, crop price insurance, Ghana, business investment, business decisions
- Type of Study: Randomized field experiment, using surveys and bank administrative data for farmers offered loans with and without crop price insurance.
- Urban/Rural: Rural
- Program: Farmers were offered the opportunity to apply for loans that included crop price indemnification at no additional charge (if crop prices fell below a certain floor, 50% of their loan was forgiven).
- Findings: The treatment group spent more on chemicals for their primary crop as a share of the total spent on chemical inputs, but there was no other evidence of impact on investments. There was a shift toward growing more of the riskier crop (eggplant) and a shift toward selling to market traders (where prices appear to be higher but are not locked in early) in the treatment group.

124. The Katie School of Insurance – Illinois State University. Enhancing sustainable access to capital for farmers in Ghana through indexed insurance. Retreived from <http://katie.cob.ilstu.edu/downloads/Ghana%20Research%20Project%201%20Revised-%20Enhancing%20Access%20to%20Capital%20for%20Farmers%20_3_%20_2_.pdf>

- Key Words: agricultural microinsurance, weather index, income protection
- Type of Study: Quantitative, analyze relationships between crop prices and production estimates and between rainfall per crop gestation period and crop yields.
- Urban/Rural: Rural
- Program: Explores potential benefit of microinsurance.
- Findings: There were no statistically significant correlations between rainfall and crop yields. There are a number of possible explanations for this, but this study may also point to the need to develop an insurance product that has some other trigger or combination of triggers that more closely correlates to crop yield and thus the actual crop losses. There was not always a negative correlation between crop price and crop yield, even for local yield and crops with mainly local markets, and the study found strong seasonal fluctuations in crop prices. Area yield products may be able to address some of these challenges.

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125. *Mude, A., Barrett, C. B., Carter, M. R., Ikegami, M., & McPeak, J. Index-based livestock insurance for northern Kenya's arid and semi-arid lands. Forthcoming.

- Key Words: agricultural microinsurance, index-based livestock, Kenya, take-up, business investment, income protection
- Type of Study: RCT, using household surveys. Experimental games.
- Urban/Rural: Rural
- Program: Index-based livestock insurance.
- Findings: Does an index-based livestock insurance product change households' economic decisions and welfare? What are the determinants of insurance uptake?

126. O'Donoghue, E., Key, N., & Roberts, M. J. (2007). Does risk matter for farm businesses? The effect of crop insurance on production and diversification. Economic Research Service, United States Department of Agriculture.

- Key Words: agricultural insurance, United States, risk-taking, business investment
- Type of Study: Natural experiment employing a difference-in-differences approach after a large increase in federal crop insurance subsidies, using insurance participation data and farm-level Agricultural Census data from 1992 and 1997.
- Urban/Rural: Rural
- Program: Increased federal subsidies aimed at making a variety of crop insurance products more affordable for farmers.
- Findings: Increased coverage caused larger farms to expand while smaller farms shrank. Regardless of size, producers showed some evidence of using diversification as a method to mitigate risk; they specialized more when insurance coverage increased, but only by 1-2%.

127. *Osei, R. D., Karlan, D., Osei-Akoto, I., & Udry, C. Examining underinvestment in agriculture: Returns to capital and insurance among farmers. Forthcoming.

- Key Words: agricultural microinsurance, weather index, Ghana, business investments, take-up
- Type of Study: RCT, using administrative data, household surveys, and observation of farmers given.
- Location: Ghana
- Program: Takayua, a rainfall insurance product with payouts triggered by drought (number of consecutive dry days) or excess rain (number of consecutive wet days) during the farming season.
- Questions Addressed: What are the main constraints for farmers in making potentially profitable investments? How is rainfall insurance understood and received among farmers in Northern Ghana? Does a lack of capital prevent farmers from making potentially profitable investments? Are concerns about rainfall preventing farmers from making potentially profitable investments?
- Initial Findings: With capital and insurance, farmers spent more on fertilizer than control group, cultivated more acres compared to the control group, increased the proportion of hired labor, and increased revenue by 43% from bagged crops. With insurance only, farmers spent more on fertilizer compared to the control group and farmers cultivated more acres compared to the control group.

128. *Patankar, M., & Upadhyay, G. Remote sensing in agriculture insurance. Forthcoming.

- Key Words: agricultural microinsurance, weather index, India, demand, business case
- Type of Study: Quantitative
- Urban/Rural: Rural
- Program: Crop insurance using satellite imagery.
- Questions Addressed: How can farmers be convinced to trust the process of claims management? What is the accuracy of the product compared to hypothetically designed weather index insurance products.

129. Roberts, M. J., O'Donoghue, E. J., & Key, N. (2003). Chemical and fertilizer applications in response to crop insurance: Evidence from census micro data. 2003 Annual meeting, July 27-30, Montreal, Canada 21895, American Agricultural Economics Association. Retrieved from <http://purl.umn.edu/21895>

- Key Words: agricultural insurance, crop price, yield, business investment, risk-taking
- Type of Study: Quantitative, using Census of Agriculture data and county-level crop

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insurance data obtained from the Risk Management Agency to compare farm-level changes in chemical and fertilizer use to changes in county-level insurance adoption.
- Urban/Rural: Rural
- Program: Increase in subsidies for yield and price insurance under the Federal Crop Insurance Reform Act (FCIRA) of 1994.
- Findings: Insurance subsidies induced modest reductions in fertilizer and chemical applications on tobacco and cotton crops and a modest increase in chemical applications on corn.

130. Roberts, M. J., O'Donoghue, E., & Key, N. (2007). Does crop insurance affect crop yields? Annual Meeting, July 29-August 1, 2007, Portland, Oregon TN 9828, American Agricultural Economics Association. Retrieved from <http://purl.umn.edu/9828>
- Key Words: agricultural insurance, United States, moral hazard, business investment
- Type of Study: Quantitative, using administrative data to estimate the incidence of moral hazard by comparing how crop yields change for those cycling into insurance relative to those in the same county who were insured in both periods, uninsured in both periods, or who cycled out of insurance.
- Urban/Rural: Rural
- Program: Various crop insurance policies.
- Findings: Insurance generally has very little effect on yield distributions.

131. *Shukla, A., Patankar, M., Hill, R. V., Robles, M., Torero, M., Rampal, P., & Liu, Y. Smallholder access to weather securities: Demand and impact on consumption and production decisions. Forthcoming.
- Key Words: agricultural microinsurance, weather securities, India, demand, income protection, cash-flow smoothing, business investment
- Type of Study: Household surveys and focus groups.
- Urban/Rural: Rural
- Program: Weather securities.
- Questions Addressed: What is the impact of weather securities on increasing farmer welfare as a result of increasing farmer income when bad weather occurs? In particular, how does ownership of weather securities improve the ability of farmers to maintain an adequate level of consumption even when yields are affected by poor weather?
- What is the impact of weather securities on farmers' production decisions? How does holding a security that pays out in a bad year enable farmers to undertake activities more susceptible to weather risk but with higher average return? In particular, does ownership of a weather security enable all or any of the following: increased ability to take a loan to purchase inputs for crop production, increased purchase of yield, increasing but costly inputs such as fertilizer and improved seeds, increased production of high return horticultural crops that are susceptible to rainfall risk?

132. *Tobacman, J., & Stein, D. Integrating savings and insurance. Forthcoming.
- Key Words: agricultural microinsurance, weather index, India, demand, savings
- Type of Study: Quantitative, using laboratory experiments.
- Urban/Rural: Rural
- Location: India
- Program: Unknown
- Questions Addressed: What are farmers' preferences for insurance and savings, and what is the optimal mix of the two that could be provided in an integrated product?

133. *Wahhaj, Z., & Outes-Leon, I. Subjective probabilities and the demand for insurance. Forthcoming.
- Key Words: agricultural microinsurance, Ethiopia, demand
- Type of Study: Quantitative, using behavioral games.
- Urban/Rural: Rural
- Program: Unknown
- Questions Addressed: To what extent can differences in subjective probabilities over the insured event between individuals and the insuring firm crowd out demand for formal insurance?

Other Insurance (Not Health or Agricultural)

134. *Chakrabarty, S. Does micro credit increase

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bonded child labour in absence of micro insurance? Forthcoming.

- Key Words: life microinsurance, health microinsurance, credit-life, Bangladesh
- Type of Study: RCT, using household surveys.
- Urban/Rural: Unknown.
- Programs: Credit-life insurance bundled with microcredit loans offered by BRAC, Grameen Bank, RDRS, and Society for Social Service that forgives the balance of the loan upon death of the policyholder. Shurjer Hashi ("Smiling Sun") health insurance product with a premium of 30 Bangladesh Taka (USD $0.43) that provides free services at Smiling Sun health clinics to members of very poor families.
- Questions Addressed: Does microcredit increase debt bondage in the Monga -- seasonal food-insecure -- areas in Bangladesh? Does they use child labour as a source of paying micro credit installments during Monga? Does microinsurance make any significant contribution in presence of bonded child labour during Monga?

135. Chemin, M., de Laat, J., & Haushofer, J. Forthcoming. See #26.

136. Dercon, S., Gunning, J. W., & Zeitlin, A. Forthcoming. See #32.

137. Engen, E. M., & Gruber, J. (2001). Unemployment insurance and precautionary saving. *Journal of Monetary Economics, 47*, 545–579.

- Key Words: unemployment insurance, United States, savings
- Type of Study: Quantitative, using household survey data from the Survey of Income and Program Participation for workers in different states (which have different unemployment insurance benefits).
- Urban/Rural: Both
- Program: Unemployment insurance.
- Findings: Reducing the unemployment insurance benefit replacement rate by 50 percent would increase gross financial asset holdings by 14% for the average worker. This crowd out effect of unemployment insurance on household saving is stronger for those facing higher unemployment risks and weaker for older workers.

138. Geisbert, L. (2008). Demand for microinsurance in rural Ghana: A household survey report on the Anidaso Policy of the Gemini Life Insurance Company.

- Key Words: life microinsurance, Ghana, satisfaction, take-up
- Type of Study: Quantitative, using household surveys.
- Urban/Rural: Rural
- Program: Anidaso insurance policy, developed by CARE International in collaboration with Gemini Life Insurance Company (GLICO), offers term life assurance up to age 60, accident benefits (income protection insurance with total/partial, temporary/ permanent disability benefit lumped together), and in-hospitalization benefits (calculated per each day spent in the hospital) for the policyholder, the spouse and up to four children. The policy also has a savings component.
- Findings: 70% of the clients are highly satisfied and 13% quite highly satisfied, whereas only 17% are not really satisfied, and the main reason for dissatisfaction is not being informed about their rights under the policy. There has been only one claim in the survey area since the introduction of the policy, although authors assume events of loss have taken place (at least hospitalisation and accidents). 41.38% of the clients report that they are very sure they would receive the benefits from GLICO as contracted in the event of a claim, followed by 31.03% who are quite sure. Around 95% of the uninsured are interested in insurance, but 78% of these think that insurance is too expensive for them (but this seems in many cases to be because they don't know about the Anidaso product).

139. Gumber, A. (2001). See #48.

140. Hintz, M. (2010). Social impact assessment of compulsory credit-life insurance. In Morelli, E., Onnis, G. A., Ammann, W. J., & Sutter, C. (Eds.) *Microinsurance: An innovative tool for risk and disaster management*. (pp. 109-136). Davos, Switzerland: Global Risk Forum. Retrieved from <papers.ssrn.com/sol3/papers.cfm?abstract_id=1645135>.

- Key Words: credit-life microinsurance,

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Indonesia, crowding-out, asset protection, education, peace of mind
- Type of Study: Qualitative, using customer surveys and interviews and key informant interviews.
- Urban/Rural: Both
- Program: Payung Keluarga ("Family Umbrella"), a compulsory credit-life product offered by Allianz through various MFIs that waives the loan balance and provides additional payouts upon death of the borrower.
- Findings: The largest portion of funds paid out was used for funeral ceremonies, which can be regarded as a social investment. Payouts only finance approximately 34% of total funeral expenses but appear to crowd out some of the traditional, informal family assistance. To some extent, the insurance payouts also seem to have contributed to an inflation of funeral costs. Dependence on informal assistance was reduced leading to a potential erosion of equality-focused social cohesion. The second largest portion of payouts was used to repay other debt, which is primarily religiously motivated rather than due to economic need. There was little evidence of economic relief brought by the product. Positive impacts were found on financial literacy and peace of mind, but some of the insured felt less secure for reasons of religion and superstition. Customers gave the product 8.3 points out of 10 for customer satisfaction, and the main drivers were a feeling of protection, good price, and the notion of participating in mutual assistance.

141. Karlan, D., Zinman, J., Ruger, J., & Giné, X. Forthcoming. See #59.

142. McGuinness, E., & Mandel, J. (2010). See #71.

143. *Morsink, K. Catching them before they fall: Impact of natural calamity re-housing insurance on vulnerability. Forthcoming.
- Key Words: life microinsurance, disaster microinsurance, Philippines, take-up, catastrophic expenditures
- Type of Study: Quantitative, using household surveys, followed by a qualitative study aimed at understanding the contextual factors.
- Urban/Rural: Rural
- Program: Package Assistance in case of Disaster (PAID), a composite accident, life, and property product offered by CARD-MBA.
- Questions Addressed: How does a composite accident, life, and property product influence the coping capability of low-income households after natural calamities? What factors influence take-up?

144. *SMERU Research Institute. Social impact assessment of "Tamadera" micro-endowment product. Forthcoming.
- Key Words: life microinsurance, Indonesia, savings
- Type of Study: Undetermined, but will include an experimental component.
- Urban/Rural: Urban
- Program: Tamadera ("Savings for a prosperous future"), a voluntary micro-endowment (life insurance) savings plan offered by Allianz, principally aimed at education financing that includes a guaranteed fixed interest rate on savings, savings completion insurance upon death of payer, an instant additional payout upon death of payer and child, and an allowance for a one-time withdrawal of 50% of the savings amount in case of emergencies.
- Questions Addressed: What are the social consequences of the product? What is the impact on savings behavior, and what differences can be observed between voluntary and fixed savings amounts? How are payouts being used? How is the allowance for a one-time emergency withdrawal being used? How is the accumulation of individual economic capital viewed by the family and the wider community (moral economy)? What is the impact of technology use, such as biometrics or smart cards?

145. Sync Consult (2006). Impact study: Anidaso micro-insurance product. http://www.microfinancegateway.org/gm/document-1.9.26781/42.pdf
- Key Words: life microinsurance, Ghana, business case, equity, take-up, other risk management mechanisms, access to other products

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- Type of Study: Qualitative and quantitative impact assessment using interviews of policyholders.
- Urban/Rural: Both
- Program: Anidaso ("Hope") life insurance developed by CARE International Ghana in collaboration with Gemini Life Insurance Company and offered through rural community banks and MFIs.
- Findings: Policyholders used more reliable and efficient risk-management instruments and arrangements. Policyholder perceptions of the reliability and adequacy of the risk management arrangements available to them improved. Policyholders became more likely to purchase other insurance. Low take-up of the product is thought to be due to organizational problems of the RCBs/ MFIs, poor promotion, lack of understanding, and low uptake by the informal sector. The study also analyzed the product's impact on participating MFIs.

146. Young, P. (2006). See #104.

Other Risk Management

147. Attanasio, O., & Rios-Rull, J. (2000). Consumption smoothing in island economies: Can public insurance reduce welfare? *European Economic Review, 44*, 1259-79.

- Key Words: risk management, consumption smoothing, public health program, crowding out, Mexico
- Type of Study: Quantitative, using data collected from questionnaires given to households by the agency implementing the program. The control group consists of households in villages where program implementation was delayed, and the treatment group consists of households in villages where the program had been in place for one year.
- Urban/Rural: Rural
- Risk Management Mechanisms: Mexican PROGRESA program, which has 3 components: nutrition (through food vouchers), health (food vouchers are dependent on visiting health centers), and education (scholarships). It is not an insurance scheme, but authors assert that it is likely to have the effect of limiting the impact of bad shocks and crowd out private insurance for the same reasons an aggregate insurance scheme does. Private transfers.
- Findings: Recipients of PROGRESA funds are less likely to receive private transfers (through the results are not statistically significant).

148. Bendig, M., Giesbert, L., & Steiner, S. (2009). Savings, credit and insurance: Household demand for formal financial services in rural Ghana. GIGA Working Paper No. 94.

- Key Words: Ghana, risk management, socio-economic status, demand, equity
- Type of Study: Quantitative, using household surveys in two villages in central Ghana.
- Urban/Rural: Rural
- Risk Management Mechanisms: Savings, credit, insurance
- Findings: Poorer households are less likely to participate in the financial market than better-off households. On the other hand, there is empirical evidence that the use of insurance, savings products, and loans depends not only on the socioeconomic status of households but also on various other factors, such as households' risk assessment and past exposure to shocks.

149. Boucher, S., Carter M. R, & Guirkinger, C. (2008). Risk rationing and wealth effects in credit markets: Implications for agricultural development. *American Journal of Agricultural Economics, 90*, 409-423.

- Key Words: agriculture, risk rationing, business investment, Peru, Honduras, Nicaragua
- Type of Study: Quantitative, using surveys of farm enterprises in Peru, Honduras, and Nicaragua regarding credit rationing (price, risk, or quantity rationing).
- Urban/Rural: Rural
- Risk Management Mechanisms: none
- Findings: Risk-rationing occurs where insurance markets are absent, and lenders, constrained by asymmetric information, shift so much contractual risk to the borrower that the borrower voluntarily withdraws from the credit market. Risk-rationed farms constitute between 12% and 19% of all surveyed farms, and between 20% and 40% of all non-price-rationed farms.

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150. Chowdhury, S. (2009). Health shocks and the urban poor: A case study of slums in Delhi. Retrieved from <http://www.isid.ac.in/~pu/conference/dec_09_conf/Papers/SamikChowdhury.pdf>

- Key Words: risk management, India, healthcare expenditures
- Type of Study: Quantitative, using household surveys to estimate the economic burden of healthcare expenditures among the urban poor (the degree and variation of the impact of health spending).
- Urban/Rural: Urban
- Risk Management Mechanisms: none
- Findings: Income, occupation, and choice of service provider emerge as principal determinants of economic burden of illness. Households facing health shocks often do not have the resources to seek formal, qualified treatment. Indirect costs (waiting time and lost workdays) make public treatment very expensive.

151. Clarke, D., & Dercon, S. (2009). Insurance, credit and safety nets for the poor in a world of risk. DESA Working Paper No. 81.

- Key Words: risk management, crowding out
- Type of Study: Qualitative, exploring the interactions between risk management mechanisms.
- Urban/Rural: n/a
- Risk Management Mechanisms: insurance, credit, informal insurance
- Findings: Insurance may crowd out credit and informal insurance, which has implications for the design of insurance schemes. Insurance schemes should build on existing informal systems and focus on catastrophic and serious covariate risks to offer protection against risk and contribute to poverty reduction beyond the combined impact of other tools.

152. Cole, S., Sampson, T., & Zia, B. (2009). Money or knowledge? What drives demand for financial services in emerging markets? Harvard Business School Working Paper 09-117.

- Key Words: risk management, take-up, India, Indonesia
- Type of Study: Surveys of households in India and Indonesia, measuring financial literacy and demand for financial services. RCT in Indonesia in which some individuals were offered financial literacy training and some were offered small subsidies to open a bank account.
- Urban/Rural: Both
- Risk Management Mechanisms: savings accounts
- Findings: There is a strong correlation between financial literacy and behavior. However, a financial education program has modest effects, increasing demand for bank accounts only for those with low levels of education or financial literacy. In contrast, small subsidies greatly increase demand. A follow-up study conducted two years after the initial intervention shows that those who were originally offered the high incentives are significantly more likely to have used bank accounts in the past year to deposit, withdraw, send or receive funds.

153. Deaton, A. (1992). Household savings in LDCs: Credit markets, insurance, and welfare. *Scandinavian Journal of Economics, 94*, 253-73.

- Key Words: risk management, Côte d'Ivoire, Ghana, Thailand
- Type of Study: Quantitative, developing a theoretical model to measure household borrowing and lending, their importance and timing, and their role in and the life-cycle behavior of consumption and income. The model is tested with household survey data from Côte d'Ivoire, Ghana, and Thailand.
- Urban/Rural: Both
- Risk Management Mechanisms: borrowing, savings
- Findings: "Hump" life- cycle saving (e.g. saving for retirement) is not likely to be a very important generator of wealth, and credit markets play a limited role in long-term consumption smoothing.

154. Dercon, S. (2000). Income risk, coping strategies, and safety nets. Background paper for the World Development Report 2000/01. WPS 2000.26.

- Key Words: risk coping, informal insurance, public safety nets
- Type of Study: Literature review and qualitative discussion of risk coping strategies.

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- Urban/Rural: n/a
- Risk Management Mechanisms: income-based strategies (income diversification or taking up low-risk activities), savings, informal group-based risk-sharing, accumulation of assets
- Findings: Vulnerability remains high despite the many strategies used to cope with risk. Income-based strategies are limited because of entry constraints into profitable activities. Self-insurance through asset accumulation or savings is limited by access to assets and poor functioning of markets. Informal insurance arrangements often exclude the poor and cannot handle economy-wide shocks. Public safety nets may provide useful alternatives but are likely to result in some crowding out, and initiatives to develop them should take this into account.

155. Dercon, S., & Krishnan, P. (2003). Risk sharing and public transfers. *The Economic Journal, 113*, C86-C94.

- Key Words: risk management, Ethiopia, informal insurance, crowding out, public transfers
- Type of Study: Quantitative, using panel data from 3 rounds of Ethiopian Rural Household Survey to test for the presence of risk-sharing following public transfers (food aid).
- Urban/Rural: Rural
- Risk Management Mechanisms: informal risk-sharing
- Findings: There is evidence of partial risk-sharing via transfers. There is also evidence of crowding out of informal risk-sharing by food aid programs.

156. Dercon, S., & Krishnan, P. (2000). In sickness and in health: Risk-sharing within households in rural Ethiopia. *Journal of Political Economy, 108*, 688–727.

- Key Words: risk management, Ethiopia, risk-sharing, consumption smoothing
- Type of Study: Quantitative, using data on adult nutrition (Quetelet index) to investigate consumption smoothing at the individual, household, and village levels.
- Urban/Rural: Rural
- Risk Management Mechanisms: intra-household risk-sharing
- Findings: Individuals are unable to smooth consumption over time and within the household. Fluctuations are larger for women, individuals in poorer households, and those in the south of the country. In most households, full risk-sharing of illness shocks takes place. However, in poor southern households, households do not pool the illness shocks to women. Differences in the ages of husband and wife mattered for allocations, as did the relative wealth of the husband and the customary rules on divorce settlement. However, the wealth of the household, measured by its landholding, had a very large positive effect on the wife's allocation in the South, suggesting that productivity-related effects rather than bargaining may be at the root of the relative bias against women in the South.

157. Dercon, S. (1996). Risk, crop choice and savings: Evidence from Tanzania. *Economic Development and Cultural Change, 44*, 385–514.

- Key Words: risk management, Tanzania, business investment
- Type of Study: Quantitative, using household surveys.
- Urban/Rural: Rural
- Risk Management Mechanism: savings in liquid assets
- Findings: If liquid asset holdings are large, providing a buffer for consumption shortfalls, then households are more willing to take up high-risk activities (i.e. devote less land to growing sweet potatoes).

158. Dercon, S., & Christiaensen, L. (2007). Consumption risk, technology adoption and poverty traps: Evidence from Ethiopia. World Bank Policy Research Working Paper 4257.

- Key Words: risk management, Ethiopia, credit, business investment
- Type of Study: Quantitative, using data from the Ethiopia Rural Household Survey from 1994 – 1999.
- Urban/Rural: Rural
- Risk Management Mechanisms: none
- Findings: Both ex-ante credit constraints and the possibly low consumption outcomes when harvests fail discourage the application of fertilizer.

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159. Eswaran, M., & Kotwal, A. (1989). Credit as insurance in agrarian economies. *Journal of Development Economies, 31*, 37–53.

- Key Words: risk management, consumption credit, business investment
- Type of Study: Quantitative, developing a theoretical model for the role of consumption credit as insurance.
- Urban/Rural: Rural
- Risk Management Mechanisms: consumption credit
- Findings: Credit used for consumption stabilization has a positive impact on production behavior.

160. Eswaran, M., Kotwal, A. (1990). Implications of credit constraints for risk behaviour in less developed economies. *Oxford Economic Papers, 42*, 473–482.

- Key Words: risk management, credit, consumption smoothing
- Type of Study: Quantitative, developing a theoretical model of the roles of consumption credit and wealth as insurance.
- Urban/Rural: n/a
- Risk Management Mechanisms: consumption credit
- Findings: If individuals have identical risk preferences, those with access to greater amounts of consumption credit will have greater capacity to absorb risk. It follows that residual claimants in production organizations (entrepreneurs) tend to be the wealthy or those with access to credit to smooth consumption.

161. Fafchamps, M. (1992). Cash crop production, food price volatility and rural market integration in the third world. *American Journal of Agricultural Economics, 74*, 90–99.

- Key Words: risk management, agriculture, consumption smoothing, business investment
- Type of Study: Quantitative, developing a model of crop portfolio choice (food crops vs. cash crops) under multivariate risk.
- Urban/Rural: Rural
- Risk Management Mechanisms: growing food crops instead of cash crops to cope with food price volatility
- Findings: Food market integration via reduced trade restrictions, better roads and transportation, and/or government food shops can be powerful tools to boost cash crop production and to increase responsiveness of small farmers to price incentives.

162. Fafchamps, M., Pender, J. (1997). Precautionary saving, credit constraints, and irreversible investment: Theory and evidence from semiarid India. *Journal of Business and Economic Statistics, 15*, 180–194.

- Key Words: risk management, India, agriculture, business investment
- Type of Study: Quantitative, using data on construction of irrigation wells in India from household surveys.
- Urban/Rural: Rural
- Risk Management Mechanisms: savings, credit, investment
- Findings: Poor farmers fail to undertake profitable investment that they could, in principle, self-finance because the non-divisibility of investment puts it out of their reach. Irreversibility is a small additional disincentive to invest. Simulations show that availability of credit can dramatically increase investment in irrigation and that interest rate subsidization has little impact.

163. Fafchamps, M., & Lund, S. (2003). Risk sharing networks in rural Philippines. *Journal of Development Economics, 71*, 261-287.

- Key Words: Philippines, risk management, informal insurance, consumption smoothing
- Type of Study: Quantitative, using household interviews in 4 villages (3 interviews each, spaced at 3-month intervals) to measure income and consumption shocks, such as crop failure, unemployment, sickness, and funerals for respondents and their network partners.
- Urban/Rural: Rural
- Risk Management Mechanisms: informal risk-sharing
- Findings: Mutual insurance appears to take place primarily through networks of friends and relatives rather than at the village level. Certain shocks are better insured than others. Most gifts and informal loans were for consumption rather than investment purposes, suggesting that their

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primary purpose is to smooth consumption. Households whose networks were affected by a severe shock receive fewer loans and gifts. The difference is large in both cases, but only marginally significant for gifts - informal borrowing appears to be more sensitive to network shocks than gifts. Crop and livestock sales do not appear to be driven by a precautionary motive, and households do not seem to deal with income shocks by increasing labor supply or drawing on other sources of income.

164. Gertler, P., & Gruber, J. (2002). Insuring consumption against illness. *American Economic Review, 92*, 51-70.

- Key Words: risk management, financial impact of illness, Indonesia
- Type of Study: Quantitative, using a panel data set from the Indonesian Resource Mobilization Study in 1991 and 1993 that combines measures of health status (self-reported illness symptoms and limitations on physical ability to perform activities of daily living) with consumption information. The cost of illness is quantified in terms of reduced labor supply (participation in labor force or change in hours worked), lost earnings, and increased medical spending.
- Urban/Rural: Both
- Risk Management Mechanisms: none
- Findings: There are significant economic costs associated with major illness, and there is very imperfect insurance of consumption over illness episodes. The ability of families to insure falls dramatically with the severity of the illness shock – families are able to insure less than 40% of the income loss from illnesses that are associated with a very severe loss in functioning.

165. Hoddinott, J. (2006). Shocks and their consequences across and within households in rural Zimbabwe. *Journal of Development Studies, 42*, 301–321.

- Key Words: risk management, Zimbabwe, asset sales, health outcomes
- Type of Study: Quantitative, using longitudinal data on households and individuals collected annually between 1994 and 1999 on key asset holdings and anthropometric outcomes.
- Urban/Rural: Rural
- Risk Management Mechanisms: asset sales
- Findings: Drought was associated with a rise in the sales of livestock, particularly oxen and cow. The likelihood of sales was strongly affected by pre-drought asset levels (households with one or two animals were much less likely to sell than households with more). As measured by their body mass index (BMI), men were unaffected by the drought whereas women's BMI fell (however, the fall was smaller in households that sold livestock and women's BMI recovered quickly the following year). Children older than two were not ffected by the drought, while those younger than two lost 15–20 percent of their growth velocity. Children residing in poor households (including those that did not sell assets) are likely to have suffered a permanent loss in stature, schooling and earnings.

166. Hubbard, R. G., Skinner, J., & Zeldes, S. P., (1995). Precautionary saving and social insurance. *Journal of Political Economy, 103*, 360–399.

- Key Words: risk management, United States, crowding out, public insurance, savings
- Type of Study: Quantitative, developing a theoretical model of the relationship between asset-based, means-tested welfare programs and precautionary savings.
- Urban/Rural: Both
- Risk Management Mechanisms: public insurance, savings
- Findings: Social insurance programs with means tests based on assets discourage saving in households with low expected lifetime income.

167. Jalan, J., & Ravallion, M. (1997). Are the poor less well insured? Evidence on vulnerability to income risk in rural China. Development Research Group Policy Research Working Paper No.1863, World Bank.

- Key Words: risk management, China, consumption smoothing
- Type of Study: Quantitative, using household-level panel data from the Rural Household Survey on 4 provinces in southern China (one of which is prosperous and 3 of which are

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very poor) spanning the years 1985-1990 to investigate the extent of consumption insurance against income risk.
- Urban/Rural: Rural
- Risk Management Mechanisms: various (mostly informal) mechanisms
- Findings: Insurance exists at all wealth levels, although the hypothesis of perfect insurance is rejected. The poorest are the least well insured, with 40% of an income shock being passed on to current consumption. The extent of insurance in a given wealth stratum varies little between poor and non-poor areas.

168. Kazianga, H., & Udry, C. (2006). Consumption smoothing? Livestock, insurance and drought in rural Burkina Faso. *Journal of Development Economics, 79,* 413–446.
- Key Words: risk management, Burkina Faso, asset accumulation, informal risk-sharing, consumption smoothing
- Type of Study: Quantitative, using household surveys from ICRISAT during a severe drought between 1981 and 1985.
- Urban/Rural: Rural
- Risk Management Mechanisms: livestock accumulation, grain storage, inter-household transfers
- Findings: There is evidence of very little consumption smoothing. In particular, there is almost no risk sharing, and households rely almost exclusively on self-insurance in the form of adjustments to grain stocks to smooth out consumption.

169. Kendall, J. (2010). A penny saved: How do savings accounts help the poor? New York: Financial Access Initiative.
- Key Words: risk management, savings
- Type of Study: Literature review of experimental studies on the impact of savings.
- Urban/Rural: Both
- Risk Management Mechanisms: savings
- Findings: There is very little incontrovertible evidence of the development benefits of formal savings services, but there is a large body of data and observations supporting the notion that savings are valuable. Clients' willingness to pay for savings services is one compelling sign that they have value.

170. Kotlikoff, L. J. (1989). Health expenditures and precautionary savings. NBER Working Paper No. 2008. Cambridge, MA: National Bureau of Economic Research.
- Key Words: traditional health insurance, savings, healthcare expenditures, United States
- Type of Study: Quantitative, developing a theoretical model of the relationship between insurance, health expenditures, and savings.
- Urban/Rural: n/a
- Risk Management Mechanisms: savings
- Findings: Precautionary saving for uncertain health expenditures could explain a large amount of aggregate savings. Adding uncertain health expenditures raises long run savings by almost one third, assuming individuals self insure. Introducing actuarially fair insurance to the economy with uncertain health expenditures reduces the steady state level of wealth of that economy by 12%. Switching from the fair insurance arrangement to a Medicaid-type program with an asset test further reduces steady state wealth by 75%.

171. Kruk, M. E., Goldman, E., & Galea, S. (2009). Borrowing and selling to pay for health care in low- and middle-income countries. *Health Affairs, 28*, 1056–1066.
- Key Words: risk management, healthcare expenditures, financial cost of illness, borrowing, asset sale
- Type of Study: Quantitative, using World Health Survey household survey data to calculate the frequency of borrowing money or selling assets to buy health services in 40 low- and middle-income countries.
- Urban/Rural: both
- Risk Management Mechanisms: borrowing, selling assets
- Findings: On average, 25.9% of households borrowed money or sold items to pay for healthcare. The risk was higher among the poorest households and in countries with less health insurance. Out-of-pocket payments account for 70% of health financing in low-income countries (vs. 14.9% in high-income countries). Selling items was less common than borrowing in most countries outside Africa.

*Draft, in progress, or planned study

172. Kouamé, E. B.-H. Risk, risk aversion and choice of risk management strategies by cocoa farmers in western Côte d'Ivoire. Retrieved from <www.csae.ox.ac.uk/conferences/2010-EdiA/papers/267-Kouame.pdf>

- Key Words: risk management, Côte d'Ivoire, agriculture
- Type of Study: Quantitative, using surveys and experimental games to measure cocoa producers' risk preferences, decision making under uncertainty, and willingness to pay for insurance, in order to identify and propose an effective mechanism to shield producers from price risks.
- Urban/Rural: Rural
- Risk Management Mechanisms: various informal mechanisms. The study areas had no access to formal insurance or financial markets.
- Findings: The decision to adopt one risk management strategy positively influences the decision to adopt the other strategies. Risk aversion, farm size, household size, household's head literacy and the engagement in off-farm activities are important factors that increase the likelihood of adopting risk management strategies. 66% of farmers were interested in having insurance to deal with risks, and the majority of those not interested cited lack of trust in the government as an insurance provider as the reason.

173. Kurosaki, T., & Fafchamps, M. (2002). Insurance market efficiency and crop choices in Pakistan. *Journal of Development Economics, 67*, 419–453.

- Key Words: risk management, agriculture, Pakistan
- Type of Study: Quantitative, using surveys conducted by the Punjab Economic Research Institute (PERI) based in Lahore, Pakistan between 1988/1989 and 1990/1991.
- Urban/Rural: Rural
- Risk Management Mechanisms: informal risk-sharing
- Findings: The study cannot reject the hypothesis that village members efficiently share risk among themselves, but production choices are shown to depend on risk. Households find it difficult to protect themselves against collective shocks that affect yields as well as output and input prices.

174. Ligon, E. (2002). Targeting and informal insurance. WIDER discussion paper no. 2002/8. Helsinki, Finland: UNU World Institute for Development Economics Research.

- Key Words: informal insurance, India,
- Type of Study: Quantitative, using ICRISAT survey data to study the impact of a "shock" in the form of a donor transfer to one household.
- Urban/Rural: Rural
- Risk Management Mechanisms: informal risk-sharing
- Findings: The village with the best intra-village insurance (and the only evidence of distinct risk-sharing networks within the village) had the least access to mechanisms for smoothing aggregate consumption. In another village, households bear almost no aggregate risk but face a large amount of idiosyncratic risk. The wealthiest village is somewhere in between.

175. Morduch, J. (1995). Income smoothing and consumption smoothing. *Journal of Economic Perspectives, 9*, 103–14.

- Key Words: risk management, business investment, risk-taking
- Type of Study: Qualitative description of the relationship between production and employment decisions as risk management tools.
- Urban/Rural: n/a
- Risk Management Mechanisms: production and employment decisions
- Findings: Households can smooth income (making conservative income or production choices) or consumption (saving, borrowing, depleting assets), and these mechanisms can act as substitutes for each other. Income smoothing needs to be considered in any evaluation of credit and insurance mechanisms.

176. Powers, E. T. (1998). Does means-testing welfare discourage saving? Evidence from a change in AFDC policy in the United States. *Journal of Public Economics, 68*, 33–53

- Key Words: risk management, public transfers, savings, United States

*Draft, in progress, or planned study

- Type of Study: Quantitative natural experiment, using data from the National Longitudinal Survey before and after the asset-testing policy was implemented at a federal level.
- Urban/Rural: Both
- Risk Management Mechanisms: public transfers via Aid to Families with Dependent Children (AFDC); savings
- Findings: An increase of $1 in the effective limit on personal property led the sample women to increase their saving by about 25 cents over the 1978 – 1983 period.

177. Robinson, J. (2008). Limited Insurance within the household: Evidence from a field experiment in Kenya. Cambridge, MA: Abdul Latif Jameel Poverty Action Lab.

- Key Words: risk management, Kenya, informal risk-sharing
- Type of Study: RCT, using random income shocks to test for the importance of limited commitment in explaining intra-household risk sharing arrangements.
- Urban/Rural: Rural
- Risk Management Mechanisms: informal risk-sharing
- Findings: Male private goods expenditures are sensitive to the receipt of the payment, but women's are not. Women transfer part of the shock to their husbands, but men do not transfer any to their wives. Women send bigger transfers to their husbands when the shocks are independent or negatively correlated, which is consistent with the presence of limited commitment. There is no difference in transfers for men, likely because the shocks were too small to cause the limited commitment constraint to bind for them.

178. Saldaña-Zorrilla, S. O. (2007). Socioeconomic vulnerability to natural disasters in Mexico: Rural poor, trade and public response. Mexico: United Nations.

- Key Words: risk management, Mexico, public programs
- Type of Study: Qualitative assessment of the public response to natural disasters in Mexico.
- Urban/Rural: Both
- Risk Management Mechanisms: Public programs for risk-sharing and loss-transfer.
- Findings: Governmental withdrawal from supporting the agricultural sector with investments in physical, financial, and logistic instruments stresses agricultural livelihoods, as current private mechanisms have not replaced them effectively. The study assesses public response to natural disasters in Mexico, including risk-sharing and loss-transfer instruments, and makes policy suggestions to maximize benefits from the existing governmental programs for adaptation to the increasing natural hazard exposure.

179. Townsend, R. (1994). Risk and insurance in village India. *Econometrica, 62*, 539–592.

- Key Words: risk management, India
- Type of Study: Quantitative, testing a model of risk-sharing with ICRISAT data from 3 poor high-risk villages in India.
- Urban/Rural: Rural
- Risk Management Mechanisms: informal risk-sharing, income diversification, borrowing, saving, asset accumulation, gifts
- Findings: Household consumptions are correlated with village average consumption; controlling for village consumption (i.e. for village level risk), they are not much influenced by contemporaneous own income, sickness, unemployment, or other idiosyncratic shocks. There is evidence that the landless are less well insured than their village neighbors in one of the three villages.

180. Yang, D., & Choi, H. (2007). Are remittances insurance? Evidence from rainfall shocks in the Philippines. *World Bank Economic Review, 21*, 219-248.

- Key Words: risk management, remittances, Philippines,
- Type of Study: Quantitative, using household survey panel data to measure income changes due to exogenous shocks (rainfall changes) in households with and without remittances.
- Urban/Rural: Both
- Risk Management Mechanisms: remittances
- Findings: 60% of declines in household income are replaced by remittance inflows from overseas. The study cannot reject the hypothesis that consumption in households with migrant members is unchanged in response to income shocks, whereas consumption responds strongly to income shocks in households without migrants.

Appendix 5: Additional Studies

1. Ahrin, D. C. (1994). The health card insurance scheme in Burundi: A social asset or a non-viable venture. *Social Science and Medicine, 39*, 861-70.

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5. Aportela, F. (1999). Effects of financial access on savings by low-income people. Banco de México Research Department working paper.

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