

The Role of Migration and Income Diversification in Protecting Households from Food  
Insecurity in Southwest Ethiopia

David P. Lindstrom  
Population Studies and Training Center, Brown University  
Craig Hadley  
Department of Anthropology, Emory University  
Tefera Belachew  
Jimma University, Ethiopia

David\_Lindstrom@brown.edu

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**Abstract**

We examine the influence of financial, migration and social capital on the risk of food insecurity in a sample of 3,695 households in Ethiopia. Results from logistic regression models suggest that inter-household transfers from adult children, siblings living in the capital city, and local exchange networks protect urban households against severe food insecurity, but not rural households. In contrast to long-term migration, temporary migration is associated with a higher risk of food insecurity among urban and rural households. The evidence suggests that households use temporary migration to reduce the demand for food during times of stress by temporarily shedding members. As urban labor markets develop and the production and distribution of food becomes increasingly integrated into national and international markets, households that diversify their sources of income and insurance across different locations will be more successful in protecting themselves against food insecurity than households that rely on local networks.

## **Extended Abstract**

### **Introduction**

With the global rise in the prices of food staples, food insecurity has become a widespread and growing problem. The prevalence of food insecurity is especially acute in sub-Saharan Africa. Historically, poor harvests and crop failure due to drought have been the leading causes of food insecurity. As transportation infrastructures and national markets have become more developed, limited income opportunities at the local level rather than limited supplies of staples are increasingly more important sources of food insecurity. Models of household economies in developing societies emphasize the role of income pooling and risk diversification as a common strategy that households use to self-insure against risk. Long-term and temporary migration is often the principal means by which households diversify their sources of income and protect themselves against environmental shocks. In this paper, we examine the influence of financial, migration and social capital on the likelihood of experiencing food insecurity in a sample of urban and rural households in southwestern Ethiopia. Preliminary results from logistic regression models provide strong evidence that inter-household transfers from adult children resident in other places, from siblings living in the capital city, and from local exchange networks protect urban households against severe food insecurity, but are of limited value to rural households. In contrast to long-term migration, the temporary migration of current household members is associated with a higher risk of food insecurity among urban and rural households. The evidence suggests that households use temporary migration as a way to reduce the demand for food during times of stress by temporarily shedding working age members.

### **Data and Methods**

The data for this paper come from a longitudinal survey of 3,695 randomly selected households in the southwestern Ethiopian city of Jimma, population 120,000, three outlying market towns, and the rural areas immediately surrounding the market towns. Jimma Zone, the location of the study, is a semi-tropical area characterized by rich agricultural soils and reliable rain fall. It is not a drought prone area and coffee is the primary cash crop. The first-round household survey of the Jimma Longitudinal Family Survey of Youth (JLFSY) was fielded in 2005-06, and a second-round household survey was completed in 2007-08. The survey collected demographic, occupational, and migration information for all current household members and

independent adult children of the household head. It also collected extensive information on household assets, expectations of assistance and the provision of assistance through exchange networks, dietary diversity, and food insecurity. In this paper we conduct separate analyses of the urban and rural samples because of important differences by place of residence in the distribution of economic and social resources and participation in the cash economy. We use logistic regression models to predict food insecurity and severe food insecurity in the three months prior to the survey. The preliminary results presented in this extended abstract are based on the first-round household survey. In the completed paper, we will use data from both survey rounds. A surge in food prices between the two survey rounds produced a significant rise in the prevalence of food insecurity in the study areas. We will identify resources (measured at rounds 1 and 2), including migration capital, that are most effective in protecting households against food insecurity.

### **Preliminary Results**

The household questionnaire measured food insecurity with six questions that were answered by the household head or the spouse of the head if the head was not present. Table 1 presents the six questions and the percent of urban and rural households reporting the condition for the three month period prior to the survey. Food insecurity is pervasive in the study area. Approximately one-half of urban and rural households worried about running out of food, ran out food or money to buy food, or reduced the variety of foods fed to children. In 43 percent of urban households and 51 percent of rural households children were not given enough to eat. Reductions in food consumption among adult household members were less common than among children, but nevertheless widespread. Between one-fourth and one-third of urban and rural households had adult members who did not eat enough or skipped meals (felt hungry, but did not eat). Based on these questions we construct an inclusive summary measure of food insecurity, and a more restrictive measure. Households that experienced one or more of the six conditions are defined as food insecure, and households that experienced one or more of the three conditions of not eating enough are defined as being severely food insecure. Fifty-eight percent of urban households and 64 percent of rural households in the study population were food insecure, and 49 percent of urban households and 54 percent of rural households experienced severe food insecurity.

We construct four household measures of financial capital: the total average weekly income of all current household members, an index of agricultural assets (livestock and land), business ownership, and a wealth index based on the ownership of durable household goods. We define as migration capital transfers into the household from adult children living in other locations, the temporary migration of current household members, and the presence of one or more of the siblings of the household head or spouse of the head in the capital city of Addis Ababa. Having close kin in multiple locations, especially in the capital city, may provide households with access to financial support in times of stress that is not affected by conditions in the study area. We define social capital as the web of social connections that households cultivate and maintain as sources of social and economic support. We measure the size of kinship networks with the total number of siblings of the household head and the spouse of the head. Studies in sub-Saharan Africa frequently identify extensive kinship networks as important sources of access to jobs and resources, and sources of support during periods of duress. Support networks are not limited to kin, and can include neighbors, friends, and workmates. We measure participation in exchange networks with a summary index based on a series of questions regarding the expected ease at which assistance from others can be acquired during a time of need, and the experience of giving different kinds of assistance to others. Finally, we include in our analysis standard measures of household size, composition, structure, and headship that have been shown in other studies to be important predictors of household economic status and vulnerability. All of the composite indices (agricultural assets, wealth, and network exchange) are constructed using factor analysis and are standard normal.

Table 2 presents the means and percents for our measures of financial, migration, and social capital; and household size and composition, structure, and headship. In general, urban households possess substantially more financial and migration capital than rural households in the study area. With the exception of agricultural assets, urban households enjoy on average higher levels of income, greater levels of wealth, more transfers from former members, and are considerably more likely to have extended kin living in Addis Ababa. Rural and urban households have roughly similar levels of social capital, although rural households tend to have slightly more developed exchange networks. The majority of both urban and rural households are

simple one or two generation nuclear families, although multiple generation extended households and complex households with non-kin members are more common in urban areas, as are households headed by women.

Table 3 presents odds ratios from logistic regression models predicting food insecurity (any of the six conditions of food insecurity) and severe food insecurity (not eating enough) for the urban and rural samples. As expected, financial capital significantly reduces the risk of food insecurity in both urban and rural areas, especially the risk of severe food insecurity. On the other hand, the results for migration capital are mixed. Transfers from former household members have no effect on food insecurity among urban households, but significantly reduce the risk of severe food insecurity. Among rural households, the protective effect of transfers is only marginally significant in the case of food insecurity, and is not significant in the case of severe food insecurity. Similarly, having siblings in the capital city of Addis Ababa reduces the risk of food insecurity and severe food insecurity among urban households, but has no effect for rural households. Both the mean size of transfers and the prevalence of siblings in Addis Ababa are too low in rural areas to have much of an effect on the risk of food insecurity.

Contrary to expectations, having temporary migrants in the household is associated with substantially and significantly higher risks of food insecurity and severe food insecurity in both urban and rural households. Because the survey measured temporary migration in the last twelve months and food insecurity in the last three months we cannot determine the sequence of trip departures and the onset of food insecurity. Nevertheless, we suspect that temporary migration in the study area, which generally involves coffee picking and other rural wage labor, is often a response to food insecurity, and it is way to reduce the demand on limited food stocks.

The results for social capital are also mixed. Being from a large family with many siblings does not provide any advantage with respect to protection against food insecurity and in fact urban households with heads from large families are at a significantly higher risk of severe food insecurity. We suspect that the number of siblings in the family of origin may be measuring other attributes of the family of origin that are associated with greater subsequent poverty or economic vulnerability. However, the significance of this result is that having an extensive

family network per se does not appear to offer any protection against food insecurity. On the other hand, higher levels of participation and exchange in broader networks, that may include family members but are not restricted family members, is associated with a lower risk of food insecurity in urban and rural areas, but only a lower risk of severe food insecurity in urban areas. Because social networks tend to be relatively homogenous with respect to socio-economic status and geographically local, it is possible that the network connections of poorer rural households are of limited value in staving off severe food insecurity because network partners are also facing the same conditions.

As expected, having more dependents (children and elderly) in the household increases the risk of food insecurity. However, having more working age adults in the household is associated with a greater risk of food insecurity. More adults place greater demands on food resources, but do not provide sufficiently greater income in the context of severely limited income opportunities. Finally, the primary feature of household structure and headship that matters most in terms of the risk of food insecurity is the head's level of education. Households with more educated heads are at a significantly lower risk of food insecurity in both urban and rural areas, even after controlling for income and assets.

## **Implications**

One of the key findings of this preliminary analysis is that in the context of developing wage and food markets, large households and extensive family networks per se are not an asset and may even be a burden. Having family members in diverse locations that can provide income support in periods of local stress is more important than the number of family members for reducing the risk of food insecurity. Because the successful placement of family members in urban labor markets is closely connected to human capital, rural households are at a disadvantage compared to urban households. Urban households typically enjoy better access to education and to better paying jobs. In the study area slightly more than one-half of the urban households have siblings of the head or spouse of the head living in Addis Ababa compared to less than 4 percent of rural households. Urban households also on average received significantly more cash and in-kind transfers from former members. In spite of these important differences in the mean levels of migration and financial capital, the prevalence of food insecurity and severe food insecurity are

roughly comparable in the urban and rural areas. The aggregate measures in urban areas mask substantial heterogeneity in socioeconomic characteristics in urban areas. Whereas the rural communities in the study population are relatively homogenous, the city and market towns have both relatively well-off households as well as households in extreme poverty. As urban labor markets continue to develop and the production and distribution of food becomes increasingly integrated into national and international markets in Ethiopia, households that are able to diversify their sources of income and social insurance across different locations will be more successful in protecting themselves against food insecurity than households that rely heavily on local kinship and exchange networks.

Table 1. Household Food Insecurity, Southwest Ethiopia, 2005/06.

Percent reporting conditions of food insecurity	Urban	Rural
During the last 3 months:		
1. Worried about running out of food	55.7	62.2
2. Ran out of food or money to buy food	53.7	60.1
3. Reduced the variety of foods you fed to your children	45.9	55.7
4. Children did not eat enough	43.2	51.1
5. Adults in the household did not eat enough	29.1	23.5
6. You felt hungry, but did not eat	31.9	30.6
Food insecure (one or more of conditions 1-6)	58.0	64.2
Severe food insecurity (one or more of conditions 4-6)	49.1	53.9
Total number of households	2,459	1,223



Table 2. Household Resources and Structure, Southwest Ethiopia, 2005/06.

	Means/Percent	
	Urban	Rural
<b>Financial capital</b>		
Household average weekly income (Ethiopian birr)	143.18	31.80
Agricultural assets index	-0.52	1.05
Business	5.0%	0.2%
Wealth index	0.45	-0.90
<b>Migration capital</b>		
Transfers from former members (last 12 months - birr)	213.49	32.30
1 temporary migrants (last 12 months)	4.5%	0.7%
2+ temporary migrants (last 12 months)	0.9%	0.2%
Head/spouse have siblings in Addis Ababa	55.8%	3.5%
<b>Social capital</b>		
Total number of siblings of head/spouse	3.48	3.30
Network exchange index	-0.10	0.20
<b>Household size and composition</b>		
Children (age 0-14)	1.60	2.65
Working age adults (15-59)	2.97	2.88
Elderly (60+)	0.30	0.33
<b>Household structure</b>		
Simple (nuclear)	67.4%	81.7%
Extended	11.7%	8.8%
Complex	20.9%	9.5%
<b>Household headship</b>		
Female head	25.5%	6.2%
Head's age	47.08	46.90
Head's years of schooling	5.70	1.63
Total number of households	2,468	1,223

Table 3: Odds Ratios from Logistic Regression Model Predicting Food Insecurity and Severe Food Insecurity in the Last Three Months, Southwest Ethiopia, 2005/06.

	Food Insecurity		Severe Food Insecurity	
	Urban OR	Rural OR	Urban OR	Rural OR
<b>Financial capital</b>				
Household weekly income	0.80 ***	0.65 ***	0.85 ***	0.69 ***
Agricultural assets index	0.87	0.49 ***	0.78 ***	0.51 ***
Business	0.54 ***	NA	0.56 **	NA
Wealth index	0.53 ***	0.41 ***	0.53 ***	0.34 ***
<b>Migration capital</b>				
Transfers from former members	0.98	0.91 *	0.95 **	0.93
Temporary migrants	1.52 ***	3.26 ***	1.44 **	3.54 **
Head/spouse siblings in Addis Ababa	0.82 *	1.05	0.79 **	1.05
<b>Social capital</b>				
Head/spouse total siblings	1.00	1.06	1.04 **	1.05
Network exchange index	0.72 ***	0.81 ***	0.73 ***	1.00
<b>Household size and composition</b>				
Dependents	1.14 ***	1.14 ***	1.15 ***	1.13 ***
Adults	1.11 ***	1.18 ***	1.12 ***	1.16 ***
<b>Household structure</b>				
Simple (ref.)				
Extended	0.97	1.07	1.20	0.80
Complex	1.06	1.57 *	1.20	1.37
<b>Household headship</b>				
Female head	1.21	1.01	1.15	1.15
Head's age	0.99 *	1.01 **	1.00	1.01 ***
Head's years of schooling	0.92 ***	0.94 **	0.93 ***	0.95 *
Constant ( $\beta$ )	1.75 ***	0.58	0.58 **	-0.46
Log likelihood ratio	672 ***	195 ***	592 ***	178 ***
Number of households	2,468	1,227	2,468	1,227

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$