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Household Shocks, Vulnerability and Household Finances

by

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Household Shocks, Vulnerability and Household Finances: Evidence from Philippines and Thailand

I. Introduction

The urban poor, especially those living in squatter areas, deal with many types of risks on a daily basis. The manner in which they conduct their lives often center around ways to mitigate and cope with varied risks. Majority of the workers in these households are engaged in informal sector activities that keep their households “afloat” by enabling them to meet their subsistence needs and to cope with the other risks brought about by natural calamities, illness, theft, etc. It is not surprising therefore, that these households have to deal with multiple shocks – a phenomenon called ‘bunching’ of risks.

This paper explores analytically and empirically the risks faced by urban low-income households and their members that are engaged in a wide range of jobs and the manner in which they cope with these risks. More specifically, we explore those financial strategies that may be undertaken in order to meet unexpected consumption needs or to provide a bridge during income shortfalls. Using statistical tests and multivariate analyses, we examine the extent to which men and women in urban poor households use borrowing, asset pawning and asset sales to cope with adverse income and consumption shocks. The results indicate that financial inflows from borrowing and pawning are important risk coping mechanisms, while inflows from asset sales do not appear to be induced by consumption smoothing motives.

Gender based roles and relations that permeate or influence economic and social relationships also underscore an important character of coping mechanisms and financial household management and risk sharing. We hope to investigate gender differences in

asset pawning and borrowing as means of coping among the urban low-income households as well. The paper illustrates these conditions using household and individual level sample survey data on informal sector employment, credit and asset pawning and sale collected from interviews of 586 women and men in urban, low-income communities in Philippines and Thailand in 2002.

The rest of the paper is organized as follows: Section 2 provides a conceptual framework for the analysis of financial coping strategies; Section 3 provides a brief description of the sampling method, the data and its limitations; Section 4 presents the various OLS, Probit and Tobit models to examine the interplay of pertinent demographic, economic and employment characteristics of the respondents as well as the households that may influence their pattern of borrowing, asset pawning and asset sale and the extent to which these financial strategies are responses to health and subjective shocks faced by the households. Summary remarks and policy implications are presented in the concluding part of the paper.

II. Vulnerability and Financial Strategies among Urban Poor Households

During the past three decades, increased job informality and growth of nonstandard types of employment conditions have taken place in many parts of the developing world.¹ This trend has been facilitated by development in technologies and organizational structures of firms, market liberalization policies and the adoption of growth strategies that resulted in the formal market economy's inability to generate adequate jobs. These changes in the labor market have raised questions not only on the nature of job informality but also its consequences. Informal sector workers typically

¹ As of 2002 (UNDP 2004)

have little or no benefits such as health insurance or pensions. Moreover, those who are hired on a casual or subcontracted basis and who have little or no labor protection are likely to have lower and irregular earnings. Informal market work takes diverse forms; while some are stable, the majority are characterized by unstable, albeit low, earning patterns and precarious working conditions, especially among women.

There are also important gender dimensions in the pattern of employment and activities in the informal economy that cannot be ignored. First, under conditions of high underemployment as well as the lack of “living wage”, households often have to rely on women’s labor to supplement their income. Second, women and men, by their respective roles and particular positions within the household, may have different access to skills, markets and capital. The choice of activity, for the most part, is likely to be determined by factors relating to the prevailing macroeconomic conditions, as well as individual traits such as education, extent of social networks, age and role within the household.

The insecurity associated with the growing incidence of informal work, especially in the urban areas, has important consequences in inducing or maintaining vulnerability. While there has been a growing number of studies on coping strategies available to poor households in rural areas, little has been said about how consumption smoothing is undertaken by low-income households in urban communities. Unlike agricultural households, workers in poor urban households, especially those in squatter communities, rely primarily on the market for their labor and do not have the means to rely on subsistence production. For one, households make decisions that preclude their inability to predict their income standing in the future. Therefore, the uncertainty and insecurity in their economic situation interacts with a number of other choices, such as the level of

investment they undertake in their economic activities, where to live, the use of credit and assets, etc – in the face of income shortfalls and consumption expenditure shocks.

The extensive literature on poverty and consumption smoothing illustrate that the poor do not just undergo the high risk in their environment – they actively try to manage risk and at the same time, try to cope with its consequences. For example, households will try to smooth income, reduce their exposure to risk such as high debt servicing or exposure to fixed costs like rent, or to mitigate the risk of some income sources by combining them with others. Understanding the multifaceted nature of risks are therefore central to understanding the coping strategies that households undertake and to developing effective economic and social policies that reduce vulnerability and poverty.

This implies that other risks faced by urban low-income households, particularly *health, disability and mortality risks* have to be given centre stage as well. Health shocks and their associated medical costs have been shown to be an important source of significant stress among the poor (Dercon 2004). In the case of disability, illness creates additional health care costs, but also a longer-term effect via the loss of income earning capacity. Even a temporary disability may result in severe income decline. This effect is especially harmful to the urban poor, as they have little assets to fall back upon. Risk of illness is often closely related to particular environmental risks, linked to inadequate waste disposal, water supplies, and sanitation. Moser (1998) considers them as one of the “three characteristics of urban life often identified as differentiating urban from rural areas”, along with commoditization, and social fragmentation.

The variability of income, alongside the environmental risks, can heighten the household’s need to find ways to cope with consumption shocks and income shortfalls and in designing survival strategies. One prevalent strategy that has been extensively

studied in the literature is borrowing. Among informal sector workers and their households, this coping strategy runs into a trade-off between the use of funds for production/enterprise use and for dealing with consumption shocks. That is, the mitigation of consumption risk or dealing with a shock may involve foregoing capital good purchase or meeting working capital needs that can increase future income.

To some extent, urban low-income communities, especially those which are well-organized, have established mutual support systems. These community-based informal networks have played some role in meeting the needs of the households as in the case of several urban low-income communities in the Philippines and Thailand that we have encountered in our field work. These support networks include ‘generalized reciprocity’ in the form of kin credit or loans that are provided by those whose income is temporarily high to those in need. Relatives, friends and neighbors, for instance are approached for loans during times of cash shortage or family emergencies.

There are, however, limits to these forms of mutual insurance and risk pooling mechanisms especially when there are adverse economic and social conditions such as economic downturns, crises and disintegration of social networks. For the most part, urban low-income workers and their households often have to deal with shocks and cash shortages themselves. For instance, they may approach moneylender for credit even at high interest charges. There is another trade-off that the urban poor confront when they face liquidity constraint and this involves intertemporal choices in the face of a shock. One option is to face the losses associated with not dealing with the shock, and the other is to pawn or sell one’s assets thereby taking on the risk associated with the decline in their fall-back asset position so as to immediately raise the needed funds. In Thailand,

women in urban low-income communities have made use of their real assets, especially jewelry, livestock and appliances, as buffer assets to meet cash shortages and to smoothen their consumption.

A better understanding of how urban poor households deal with risks is important not only because realizations of adverse shocks affect their welfare, but also because the manner in which they cope with shocks now have consequences in their ability to cope with future shocks. In the following section, we explore using 2002 sample data among men and women - heads and spouses (the latter if present) - in 354 urban low income households engaged in informal sector employment in Bangkok and Manila metropolitan areas, on whether the financial strategies namely borrowing, asset pawning and asset sale, are usually undertaken by serve as coping mechanisms to deal with adverse income and consumption shocks.

III. Sampling and Characteristics of Urban Low Income Households

This section presents a description of the data used in the analysis particularly the survey method and the sampling of the urban low-income population in Bangkok and Manila metropolitan areas. It also describes the survey respondents and their pertinent individual, household, and community level characteristics. Given the focus of the study, this chapter also discusses patterns of employment, credit, asset pawning and asset sales and perform several multivariate tests to examine the role of these financial strategies in coping with income and consumption shocks.

a) Data Collection and Sampling

The following empirical investigation is based on a field study of urban low-income communities in Bangkok with focus on informal employment, including self-employed or small enterprises, and home-based workers. The 2002 sample data from the Philippines and Thailand were collected as part of a multi-country survey of urban poor communities focusing on informal sector workers. Two representative communities were chosen in the Philippines (Del Pan and Inarawan) and three representative communities in Thailand (Nawamin, Nomklao, and Udomsuk), taking into account contacts with local community organizations and leaders to facilitate entry into the area.

Households were selected randomly within each community using a community roster or mapping, and were included in the survey if at least one adult member in the household is employed in the informal sector.² The survey used a structured interview questionnaire of heads and spouses (if present), often requiring at least two or three visits. A total of 199 households (including single-headed households) were interviewed between August and November 2002 in the Philippines (102 households in Del Pan, Metro Manila and 97 households in Inarawan, Antipolo City), while 155 households were interviewed between July to September 2002 in Thailand (56 households in Nawamin, 53 households in Nomklao, and 46 households in Udomsuk).³ Using a per capita poverty threshold of \$2/day, about 90 percent of the households surveyed in the Philippines and 20 percent of households surveyed in Thailand are considered income-poor. The average household income in the Thailand sample is a little more than half of the average

² In the Philippines, a community map provided by the community leaders is used. In Thailand, the sampling used the list and information provided by HomeNet, Thailand, and its research affiliates, who had done extensive work among homebased workers.

³ A total of 39 women and 35 men with missing education data in the Philippines are dropped in the regression analysis.

Bangkok household income, but higher than the national average.⁴ As typical of the low-income neighborhoods in the urban areas in both Manila and Bangkok, many of the residents are home-based workers as well as other informal workers (performing unregistered work), who are still struggling to make a living. In addition, these households have illegally occupied lands and houses where they are now living.

The survey collected information on household and individual characteristics, employment, informal sector work, credit, savings, and household decisionmaking. One unique feature of this dataset is that the credit, savings and household decisionmaking modules were collected separately for the head and spouse, yielding 181 male reports and 199 female reports for the Philippines, and 135 male reports and 149 female reports for Thailand. The survey also collected detailed information on loans and asset transactions, individual and household characteristics, as well as incidents of child illness and adult illness. Male and female reports in couples households capture both joint transactions for loans, asset sales and asset pawning, as well as individual transactions, whereas single-headed households reflect only individual transactions. In the Philippines, there are 18 single-headed households, of which 17 are female-headed, and 29 single-headed Thai households, of which 20 are female-headed (see Table 1). Any gender differences in reports within the same household may reflect measurement error on joint transactions, to the extent that one party is more knowledgeable about the transaction than the other, as well as the extent of individual loan and asset transactions.

b) Indicators of Consumption/Income Shocks.

⁴ The average national household income from the Socio-Economic survey 2001 was 12,185 baht per month while the average household income in the Bangkok metropolitan area in 2000 was 24,690 baht per month or \$588. (Thailand, National Statistics Office, 2000, 2001).

In this study, we use two indicators of consumption/income shocks that are likely to place the household in financial stress. One is an objective measure of health-related shocks such as incidents of child illness and adult illness. We posed them as dummy variables for those households with an ill child or adult that required treatment in the last 6 months. It should be noted that these variables are likely to capture only the more serious types of illnesses, but does not capture the severity of each event or the frequency of such shocks. Unfortunately, aside from health shocks, no other observable incidents of income and consumption shocks were collected (e.g., death, theft, etc.), which is a limitation of the data.⁵

The second indicator is a subjective shock measure that is based on the response to the question regarding money shortage. Unlike the health shock, which is collected at the household level, the subjective measure is collected at the individual level. Heads and spouses were separately asked: “In the last 3 months, was there ever an incident when your family had a severe money shortage?” Note that such incidents leading to severe money shortages may not be wholly unanticipated shocks (i.e., not necessarily random), and may include events that have been foreseeable but for which the household was unable to prepare for adequately such as required investment capital (e.g., working capital for self-employment or purchase of business assets). These are considered as well since our study focus includes all adverse events that result in budget shortfalls or to heightened liquidity constraint.

⁵ While this paper argues that health shocks are among the most important sources of financial distress for these households, income variability, particularly for highly precarious livelihoods, as well as other consumption shocks (i.e., demographic shocks and other family emergencies) are also likely to influence the financial situation of the household

Differences in men and women reports may reflect differences in perceptions, when reporting on the same events, as well as differences in their spheres of household and financial responsibilities, so that men and women members are likely to respond to different types of shocks. For example, family illness may be the primary responsibility of one family member, so that this event may be considered sufficient reason for a money shortage by one spouse but not the other. Of the 277 male respondents in the sample, 172 report a money shortage (62 percent), while 219 out of 308 female respondents report a money shortage (71 percent).

Although this subjective measure is binary, it is analogous to the subjective shock variable collected by Fafchamps and Lund (2003), which asks respondents to rate their financial situation from *very good* (-2) to *very bad* (+2). This subjective measure has two important advantages. First, because objective shock measures in this dataset capture only incidents of health shocks, this subjective measure captures other severe income and consumption shocks such as death in the family, loss of livelihood, theft, etc. Also, the objective shock measures are binary and do not capture the severity of the incidents of health shocks. For example, a household whose child was ill for a week would have the same response as a household whose child contracted a chronic disease, although the financial implications are clearly more severe in the latter case. Second, when both good and bad shocks occur throughout the recall period, it is unclear what the net impact will be on the household's financial situation so a subjective measure in which individuals attach their own weights to events is more informative (Fafchamps and Lund 2003). For example, a family may have experienced incidents of severe illness during the same period that one member has found a more lucrative livelihood. Information on the

incidence of such events alone cannot provide enough grounds to make *a priori* assumptions on which event carries more weight in the household's financial situation.

c) Sample Characteristics.

Our sample households and their members exhibit a number of notable differences. Filipino households are larger, with 6 members on average, compared to Thai households, with only about 4 members on average (see Table 1). Filipino households also have more children, with at least two children below 14 on average, compared to Thai households who have only 1 child below 14 on average. In addition, Thai respondents are about 4 years older and are likely to have one (1) year less education (5.9 years) than Filipino respondents (6.9 years) on average (see Table 2).

In terms of employment, only 8 percent of Filipino respondents are employed in the formal sector, 68 percent are employed in the informal sector, while 24 percent are not employed, majority of whom are women. On the other hand, at least a fifth (20%) of Thai respondents are employed in the formal sector and only 5 percent are not employed. The Thai also appear to work 10 more hours per week on average compared to Filipinos. Despite their lower educational levels, Thai respondents earn about 72 percent more than Filipino respondents (about \$179 and \$105 per month respectively).

An interesting characteristic of the Philippine sample is that a substantial proportion of women are not economically active (42 percent of women or 25% of total respondents), whereas in Thailand, only 11 percent are not employed (see Table 3). However, among those who are employed, gendered patterns in the quality of employment appear to be similar for Philippines and Thailand. Women are more likely to be employed in occupations that are more precarious or with higher degrees of

informality compared to men. On the other hand, men are more likely to have longer-standing jobs and are more likely to enjoy work-related benefits than women on average, although there seems to be little or no gender difference in the average weekly hours of paid work within the same country.

d) Utilization of Financial Strategies

Table 5 reports the proportion of respondents in both countries reporting positive inflows from borrowing, asset pawning, and asset sales, as well as the mean values of their respective inflows. Overall, borrowing appeared to be the most prevalent among these three channels, with 32 percent of all respondents reporting some positive level of individual borrowing, compared with roughly 10 percent for asset pawning and 6 percent for asset sales.

There seem to be some gender patterns in the utilization of these financial channels in order to augment their income flows. Women appear more likely than men to borrow and pawn assets. About 45 percent of Filipino women borrowed during the period and 8 percent pawned assets, compared to Filipino men, of which 35 percent borrowed and only about 3 percent pawned during the period. This gender pattern of participation in borrowing and pawning is similar in Thailand, although the differences are more pronounced. About 31 percent of Thai women borrowed compared to 15 percent of Thai men, while about 19 percent of Thai women pawned assets compared to only 9 percent of Thai men. In terms of participation rates by country, Filipino respondents are more likely to borrow, while Thai respondents are more likely to pawn and sell assets. Despite the higher propensity to borrow and pawn assets compared to Filipino men, Filipino women receive smaller financial flows on average. However, this

is not the case in Thailand, where women's borrowings are larger on average compared to men's, while men's receipts, if they pawn, are larger on average compared to women who pawned.

In general, financial flows in Thailand are much higher compared to those in the Philippines. This is not surprising considering that there are higher proportion of respondents who are engaged in paid work and some have stable types of employment particularly husbands who work in the formal sector. In addition, they tend to have longer hours of work and higher average monthly earnings (Pichetpongsa 2004). To the extent that higher levels of income is correlated with asset accumulation and better credit access, then it may likely increase one's ability to utilize financial mechanisms in the face of liquidity constraint and/or shocks. Low levels of asset holdings may also explain the low incidence of asset transactions, whether pawning or sale, for Filipino respondents.

Table 6 presents characteristics of individual loan transactions by gender and source. Both men and women appear to rely primarily on informal sources of credit (e.g., moneylenders, employers) followed by kin (e.g., relatives, neighbors) and then semi-formal sources (e.g., microfinance institutions, cooperatives). On average, women borrow larger loans from their kin, as opposed to other sources, while men borrow larger loans from semi-formal sources.

Simple t-tests of means are performed to examine the important gender differences in access to these financial strategies (see Table 7). Overall, women are significantly more likely to borrow, pawn assets, or use any of the three strategies (i.e., borrow, pawn, or sell assets), but there is no significant difference between the likelihood of selling assets for men and women. Despite these significant differences in incidence,

there does not appear to be a significant difference in the average size of the financial inflows between women and men, except for asset pawning, where women's receipts are significantly lower than those for men. This may be an indication of the quality of individual asset holdings between women and men, where women are more likely to own less valuable assets.

IV. Are These Financial Strategies Used to Cope with Shocks and/or Money

Shortages?

We next examine the interaction between these financial risk coping strategies and self-reported incidents of money shortages using simple t-tests. The results given in Table 8 show that a significant majority of men and women who reported positive inflows from both borrowing and pawning of assets have also reported a severe money shortage (subjective shock) during the period. In fact, all of the men who pawned assets also reported a money shortage. This suggests that borrowing and asset pawning are strongly correlated with financial difficulties for both men and women, whereas asset sales do not appear to be correlated with financial distress. However, the mean size of transactions does not seem to differ between those reporting a shock and those who are not reporting a shock. While financial distress may influence the likelihood that an individual will resort to any of the three strategies, the actual value of the transaction represent both demand factors (i.e., the severity of the budget shortfall) and supply factors (i.e., the value of asset pawned or extent of credit access). This might explain why average financial inflows do not differ significantly between the two groups.

Although these preliminary findings indicate that both borrowing and asset pawning are important risk coping strategies for both males and females, these

transactions are likely to be correlated with the type of livelihood the respondent is engaged in so that inflows may be reflecting motives other than consumption smoothing. For example, some types of activities require more working capital than others as pointed out by Messier (2005) and Floro and Messier (2007). Also, both borrowing and asset transactions are likely to be positively correlated with the wealth or income level of the household. Poorer households have very little assets to pawn or sell, and may not be able to borrow as often or as much as wealthier households because of their limited ability to service debt. The same may be said for individuals who do not have access to steady income or whose jobs are of highly precarious nature, such as laundry-washing persons, street vendors, subcontracted homeworkers, etc. To control for these other factors, as well as other characteristics of the individuals and their households, we conduct multivariate analyses and their results are discussed in the next section.

a) Multivariate Tests and Results

Our paper investigates three alternative financial strategies: borrowing, asset pawning, and asset sales. For purposes of regression analyses, these are measured in three ways: (i) as a binary variable to capture the probability of using these channels; (ii) as a continuous variable representing the value of inflows received from each strategy; and, (iii) as a ratio of financial flows to household income. The first set of dependent variables (i) captures only the likelihood that an individual will use each strategy (**Models 1a-1f**). The second set of dependent variables (ii) measures the value of the transactions (**Models 2a – 2f**), and the third set (iii) measures the value of transactions normalized by household income (**Models 3a-3f**). Because of the relatively small incidence of asset pawning and sales (especially for the Philippines), we combine the

information from all three financial channels in order to examine the overall incidence of financial coping strategies utilization (**Models 4a-4f**) and their levels (**Models 5a-5f**). In addition, we decompose the financial flows and examined their ratio with respect to the monthly household income flows (**Models 6a-6f**).

Each dependent variable is regressed against the subjective shock measure and health shocks alternatively, as well as other individual and household characteristics that influence permanent income and preferences. This is run separately for each country sub-sample, as well as for the pooled (combined countries) sample. Models with binary dependent variables are estimated using the probit model, models with continuous variables as dependent variables (value of financial flows) are estimated using OLS, and models with ratios as dependent variables (value of financial flows as share of household income) are estimated using the tobit model.

We used as explanatory variables the following respondent characteristics namely, gender, age, employment dummies, years of schooling; pertinent household characteristics including household size, dummy if there are any young children aged below 6, single-headed, and community dummies to capture both observable and unobservable characteristics that may affect the dependent variables.

The gender dummy attempts to capture both observable and unobservable aspects of socialized roles and cultural norms in each country that likely affect women's and men's patterns of borrowing, asset pawning and sale. For example Aguilar (1991) and Illo et al. (1994) argue that the centrality of family obligations in Filipino women's lives

overall reflect an ideology of domesticity and even acquiescence in certain cases.⁶

Virginia Miralao (1995) likewise has argued that there is a tendency toward husbands and wives having particular decision-making spheres. While women have control over household decisions regarding the household budget, child-rearing, and household chores, they also carry the brunt of shortfalls in cash and the ultimate responsibility for the subsistence of the household. Cynthia Banzon-Bautista (1995) argues that Filipino women's hold over "the purse strings" does not hide their responsibility for reconciling budget and cash shortages.

While the role of Thai women has never been solely restricted to the household or domestic sphere, their assigned primary role is to raise children and care for the family (Pramualratana, et al 1985, Praparpun et al, 1999, Thailand National Commission on Women's Affairs, 1995, Pichetpongsa 2004). As Boonmathya, Praparpun and Leechanavanichpan, 1999 point out:

Although Thai society is characterized as patriarchal in many aspects (such as Thai proverb that depicts men as the front legs of elephant whereas women are the hind legs), gender relation are generally portrayed as complementarily rather than oppressive, especially with respect to gender roles in economic activities. This is evidenced in many old Thai sayings, such as "*phua haab mia khon*", which literally means a husband and a wife helps carry things on the other end of shoulder pole. This saying promotes couple working together to earn income for their family. Thai women are sometimes depicted as "*mue ko kwai, daab ko kwang*," which literally means while one hand (of a woman) is rocking the cradle, another is holding sword. This saying emphasizes the role of women as the mother in the household sphere and outside of the home as the protector of the country (p.50-51).

⁶ It is precisely in the way that domestic practices extort women's acquiescence, while simultaneously affording the protection of a sanctuary, that has produced the Filipino household as a site of contradiction and complexity that most studies on poverty and vulnerability fail to recognize

As in the case of Filipino women, Thai women also play the role of ‘money-keeper’, who sets aside incomes for day-to-day consumption and manages family daily expenses especially food, and children’s allowances (Nguanbanchong 2004).

Age, age squared, and years of schooling of the respondent capture the productivity effects of education and work experience, which are positively related to the individual’s earnings potential. Note that these variables may also be correlated with levels of individual asset holdings as well as other unobservable characteristics that influence the ability to conduct loan and asset transactions.

The individual’s employment status and degree of job informality may also affect both the individual’s demand for credit as well as the extent of credit constraints. To control for these factors, dummy variables were constructed to represent varying degrees of job quality from regular formal (omitted category), low informal, moderate informal, high informal and not employed. Also, these livelihood characteristics are expected to be highly correlated with the individual’s initial stock of wealth, which is another important determinant of permanent income. Demographic characteristics of the household are included to control for differences in preferences. Lastly, appropriate location dummy variables are included to capture any aggregate shocks as well as other community-specific characteristics that may influence the availability of alternative coping strategies, such as social networks and the availability of public assistance programs. Country regressions include respective neighborhood dummies, while full sample regressions include a country dummy. Definitions of all variables used in the analysis are summarized in Appendix B.

Tables 9-14 present results from the various regression tests. We begin our analysis with the incidence of positive flows from borrowing, pawning or asset sales (Table 9), total financial flows from all three channels (Table 10), and total financial flows from all three channels as a share of household income (Table 11). In all three sets of Models (Models 1-3), the subjective shock variable appears to be positive and highly significant, which supports the hypothesis that respondents in our sample use a combination of these three financial channels to cope with financial distress. In particular, reporting a money shortage increases the probability that an individual will borrow by 58 percent in the Philippines, and 34 percent in Thailand.

On the other hand, adult illness shocks appear to positively and significantly affect the probability of borrowing in the Philippines, but not in Thailand. This may suggest either that the Filipino respondents suffered more severe health shocks, which may require substantial financing compared to Thai respondents. It may also be the case that Thai respondents have better access to health services compared to the Filipino respondents. Both of these factors may explain why the significance of the health shock disappears in the full sample, where the country dummy is expected to capture all country characteristics.

Health shocks are interpreted in this study as only one component of the subjective shock measure. The latter captures the aggregate financial impact of various income and consumption shocks that result from multiple risks faced by the households and budget shortfalls. Since subjective shocks are meant to convey more information than health shocks, we expect that the reported R-squared for models that use health shocks instead of the subjective shock will be much lower.

In addition, women are 12 percent more likely to resort to any of the three risk coping strategies in models using health shocks for both Philippines and Thailand, and single heads of households are also more likely to participate in any of the three channels in the subjective shock specification for the Philippines, and in both specifications for Thailand. However, there may be substantial correlation here between gender and single-headship because majority of single heads of households are women. Among the demographic variables, only the presence of young children appears to exert a positive and significant influence on the probability of using any of the three strategies for Thailand.

The education variable appears to be significant in explaining incidence of any risk financial strategy only for Thailand. We also find that age increases the probability of borrowing, pawning or selling assets at a decreasing rate by about 25 percent, while schooling decreases this probability by 2 percent. This may be due to age being associated with more established social networks and more accumulated asset holdings, thereby improving the access to these financial channels. Education has two opposite effects with respect to the use of financial strategies. On one hand, it is likely to be positively related to access to credit and asset markets but it is also likely that more highly educated individuals have greater probability of being employed in better quality jobs which may reduce the need to resort to borrowing, pawning or selling off assets in general. Individuals with formal employment have on average 8.25 years of schooling in the Philippines and 7 years of schooling in Thailand. This presents an additional source of multicollinearity in the specification, which may explain the poor performance of the job quality variables. Job quality does not appear to significantly influence the

probability of using any of the three channels except in the Philippines, where being employed in a moderately informal job (Model 1A) or not working (Model 1B) decreases the probability of borrowing, pawning or selling assets.

When flows are measured in terms of dollar values, however, very few significant determinants remain (see Models 3a-3f results in Table 10). Subjective shocks appear to strongly influence the value of financial flows from any of the three financial channels, increasing inflows by \$32 for Filipinos and \$257 for Thais. Aside from the positive and significant influence of young children on the value of financial flows for Thailand, none of the other variables are significantly different from zero for the country regressions. Rather, much of the variation in financial flows appear to be a result of country-fixed effects as indicated by the highly significant coefficient estimate for the country dummy variable in the full sample regression. When flows are normalized by household income (see Models 4a-4f results in Table 11), the results are quite similar to the probit regressions.

Examining more closely the components of these variables in the full sample model yields similar patterns with the t-tests (see Models 5a-5f results in Table 12).⁷ As expected, a subjective shock significantly increases the probability of receiving financial flows from borrowing and pawning, while asset sales do not appear to be correlated at all with money shortages or financial distress. In addition, none of the health shocks appear to influence the likelihood of engaging in any of these financial channels as risk coping strategies. These findings hold for all three types of dependent variables presented in Tables 12-14. As noted earlier, the loss of significance of the health shocks support the

⁷ The low incidence of pawning and asset sales particularly for the Philippines resulted in convergence problems for country regressions that decompose flows by each channel. For this reason, only full sample regressions are reported for the decomposition of financial flows.

hypothesis that there may be differences in the severity of health shocks or differences in access to health-related support across the two countries, which may be captured instead by the country dummy variable in pooled regressions. Note however that the country dummy captures all other observable and unobservable country differences as well, possibly resulting in opposing effects and making it difficult to assign a priori expectations on the sign of its coefficient.

The likelihood of pawning is positively and significantly higher for women, increasing the probability by between 5-7 percent. Women are also more likely to borrow, although the results are not as strong as those for pawning. The female dummy variable is positive and significant only for the health shock specification, increasing the probability of borrowing by about 11 percent. As mentioned above, the possible collinearity between gender and single-headedness may be behind the weaker gender dimensions. Note that the single-headed dummy is highly significant for all specifications of borrowing and pawning incidence, increasing the probability of borrowing by 32-40 percent and pawning by around 11 percent. This variable is likely to be capturing part of the gender dimension of borrowing and pawning.

The decomposition of financial flows into each type of risk coping channel (see Models 6a-6f results in Table 13) yields results that are similar to the regressions on total financial flows. Reporting a money shortage increases the financial flows from borrowing by \$88, and increases the financial flows from pawning by \$35. Consistent with the findings from the probit decomposed regressions (Table 12), flows from asset sales do not appear to be correlated at all with subjective shocks. Aside from the country dummy variable and age squared in the pawning regressions, none of the other variables

appear to explain the value of financial flows from borrowing, pawning and asset sales. As before, when the decomposed flows are normalized by household income (see Table 14), the results are quite similar to their corresponding probit regressions.

b) Summing up

This study examines the extent to which low-income urban households in the Philippines and Thailand use borrowing, asset pawning, and asset sales to cope with adverse income and consumption shocks. The regression results indicate that borrowing and pawning are important risk coping mechanisms, being positively and significantly correlated with subjective shocks, while selling assets do not appear to be induced by consumption smoothing motives. These findings are consistent with empirical evidence suggesting that informal credit functions as an insurance substitute (Rosenzweig 1988; Udry 1990, 1994; Fafchamps and Lund 2003). However, asset sales do not appear to be important risk coping mechanisms, contrary to evidence found in rural studies where asset transactions appear to serve a precautionary role (e.g. Deaton 1992; Fafchamps et al 1998).

Although health shocks are expected to be a significant source of financial distress for low-income urban households in the Philippines and Thailand, they do not appear to significantly influence any of the financial strategies examined in this paper except in the Philippine sub-sample. On the one hand, this suggests that there may be other sources of budget shortfalls that may be motivating the financial flows, such as income shocks (e.g., periods of low earnings) or demographic shocks (e.g., death in the family). Therefore, there may be more important income and consumption shocks other than illness, which are better captured by self-reported incidents of money shortages. On

the other hand, the significance of adult illness in the Philippine sample may also suggest country differences in the severity of the incidents of illness, or in the availability of health-related support (both public and private). In pooled regressions, these country differences are expected to be captured by the country dummy variable, which may explain the loss of significance of the health shocks.

This paper also finds that there are gender differences in the manner to which households use these coping strategies. Women are more likely to borrow and pawn assets, controlling for all other factors. However, this gender effect tends to be diminished when single headship and child ill shocks are included in some models. This may be due to the high degree of correlation between gender and single-headship especially for the Philippines. Multicollinearity may be one reason for the weak results on job quality and human capital variables; individuals who are more likely to be employed in better quality jobs are also those individuals with higher levels of education. There is need for more research and investigation that take these issues into consideration.

Nevertheless, our preliminary findings reveal an interesting aspect of risk coping behavior among urban, low income households. The role of assets and their use in pawning,⁸ has received little attention in the literature and yet appears to serve an important *ex ante* risk management and *ex post* insurance instrument for urban households despite their relatively low levels of financial assets. In the Philippines, reported pawned value of assets range from 20 to 40 percent of the asset's market value.⁹ More investigation and study are required whether or not the main explanation for the

⁸ Note that more than 96 percent of all reported loans do not have collateral.

⁹ Only pawned (not market) value is available for Thailand.

relatively small fraction of the asset market value is the transactions cost involved in secondary asset markets. Notwithstanding, a preference for asset pawning as opposed to asset sales is reasonable if low-income households tend to smooth their assets in the face of shocks as opposed to consumption smoothing as suggested by Zimmerman and Carter (2003). They argue that while wealthier households pursue conventional consumption smoothing, i.e., buying and selling off assets in response to fluctuations in income, poor households would rather cut consumption than sell-off assets because asset sales reduce their ability to cope with future income fluctuations (Zimmerman and Carter 2003). Therefore, one might expect poor households who wish to smooth assets instead of consumption to forgo the additional 60 to 80 percent of the inflow from a particular asset for the right to redeem the asset. So long as the asset's value does not depreciate over time (e.g. jewelry), the household can in fact pawn the asset repeatedly, yielding a flow of funds over time. On the other hand, once an asset is sold, the household must be able to raise its replacement value to be able to replace the asset later on. Thus, the preference for pawning as opposed to selling off assets may be a function of the low levels of asset holdings.

V. Concluding Remarks

Our paper demonstrates that the insecurity of the informal work environment and the risks associated with inadequate or poor infrastructure and social services, have more far-reaching effects and further induce vulnerability among urban low-income workers and their households as a whole. The resulting low levels and variability of incomes lead to spillovers into the social and economic spheres that affect the workers ability to manage risk. It can lead to greater (inelastic) demand for credit in the face of

consumption shocks and alter the fallback level of assets. In the long run, it can also adversely affect the ability of the household to overcome the cycle of poverty so that capability deprivation is maintained.

This paper finds that among urban low-income households, borrowing is the most common means to overcome their cash constraints, but that the poorest of the poor are least able to borrow and have limited alternative coping strategies because they also do not have assets to pawn or sell. They are also likely to face a multitude of risks, those associated with the precariousness of their jobs and those associated with the poor infrastructure and social services as well as polluted environment in their surroundings. Thai respondents, who have access to better quality jobs and have higher earnings, are able to raise much larger funds from borrowing and pawning compared to Filipino respondents who have higher unemployment, lower quality jobs and lower earnings. Borrowing to meet income and consumption shocks, unlike borrowing for investment, however, does not have an associated income flow that help ensure the repayment of the loan. In addition, they tend to create trade-offs for respondent-borrowers with reservation debt servicing capacity in the sense that they choose to engage in activities that require little capital, even if this limits the capacity for their earnings to grow. In our study of urban households in poor communities in these two countries, the majority of jobs, especially those held by women are characterized as moderately or highly precarious.

Our study of urban, low-income workers in the Philippines and Thailand also show that any examination of vulnerability must take into account the mechanisms through which gender roles, risk sharing, and coping strategies burdens different

household members and how these are affected by the broader changes in labor market dynamics, degrees of informalization, and the accompanying variability in incomes.

Increased access to a wider array of financial services, such as medium-term and consumption loans, insurance and savings mobilization can be instrumental for poor households engaged in informal activities. This is the case with the development of innovative financial instruments that provide these services while reducing the cost of credit. But more is required to reduce vulnerability of these households. Social protection schemes need to be designed to compensate for the growing insecurity associated with informalization and to minimize their exposure to income and consumption shocks. These range from improvements in public health services, infrastructure, sanitation, decent and affordable housing, school feeding programs and safe water provisioning, etc. Incidents of child illness are found to increase the probability of reporting a money shortage, although this probability is reduced for households with access to public sewage. Finally, macroeconomic policies can make a significant contribution in generating stable and decent employment, raising income levels, reducing vulnerability and poverty, including those affected by labor market informality. This implies the urgency of employment creation and protection of workers rights as important macroeconomic policy goals.

Appendix A

Brief Description of the Communities

Del Pan is an established squatter community over 60 years old, located next to the Manila pier. It is a densely populated, high-crime community, and is heavily prone to flooding. Inarawan is a squatter community that was settled in the mid-eighties by migrants from the Visayan region and situated on a hilly area, about 15-20 kilometers from the Manila central business district. It is less densely populated (about 800 households in 2001) compared to Del Pan, with generally larger land plots and detached houses.

Namawin is situated in the northern part of Bangkok and consists of 500 households. In 2000, the community organized themselves in order to collectively negotiate for land tenure (rental) agreement and temporary housing license with the Buddhist Monk Hospital Foundation (Nguanbanchong 2000, Pichetpongsa 2004). The residents have also been active in various campaigns for provision of water supply, construction of pavement, establishment of a nursery center. In addition, there are several informal and occupational savings groups in the area. Nomklao community is the oldest squatter settlement of the three areas. Several community-based organizations in the area have collaborated with NGOs, the Crown Property Bureau (CPB) (owner of the land being occupied) and the Community Development Office of Bangkok in order to provide basic infrastructure and children education. The community has also organized a savings group (informal financial institution) for the purpose of buying land from the CPB. Udomsuk is the smallest of the three communities with only 130 households and situated quite far from the main road. The majority of the residents are subcontracted

homeworkers in shoes assembly and stitching. Some of the households have no access to sewage and housing are typically of makeshift kind.

Appendix B : Variable Definitions

Dependent Variables	
borrowed	=1 if indiv loans>0
pawned	=1 if indiv pawning>0
Sold	=1 if indiv asset sales>0
anyflows	=1 if indiv total flows>0
iloan	Individual borrowing (US\$)
ipawn	Receipts from own pawned assets (US\$)
isold	Receipts from own sold assets (US%)
itotflows	=iloan+ipawn+isold
iloanshy	Indiv loans/Total HH Income
ipawnshy	Indiv pawning/Total HH Income
isoldshy	Indiv asset sales/Total HH Income
iflowsshy	Indiv flows from loans, pawning, sales/Total HH Income
Explanatory Variables	
subjective shock	Any shortage of money in last 6 mos?
child health shock	=1 if sick child was treated in last 6 mos
adult health shock	=1 if sick adult was treated in last 6 mos
female	=1 if female
age	age in years
age squared	age squared
low informal	=1 if livelihood has low degree of informality
moderate informal	=1 if livelihood has moderate degree of informality
high informal	=1 if livelihood has high degree of informality
not employed	=1 if did not work in the last 12 mos
years of schooling	Years of schooling
young children dummy	=1 if any child aged<6 in hh
household size	no. of household members
single-headed household	=1 if single-headed hh
Del Pan	=1 if neighborhood is Del Pan
Nomklao	=1 if neighborhood is Nomklao
Udomsuk	=1 if neighborhood is Udomsuk
Philippines	=1 if country is Philippines

Table 1: Selected Household Characteristics

	Philippines	Thailand	All
No. of households	199	155	354
Household Type			
Single-headed Men	1	9	10
Single-headed Women	17	20	37
Couples	181	126	307
Ave. Household Size	5.6	3.8	4.8
Ave. No. of Children in Household			
Below 6	1.1	0.3	0.7
Aged 7-14	1.3	0.6	1.0
Ave. Monthly Household Earnings (US\$)*	141.3	360.8	237.4
Ave. Monthly Household Income (US\$)**	161.6	364.7	250.6
Proportion Who Received Remittances	5%	11%	7%
Proportion Who Own Land	3%	8%	5%
Proportion with Reported Subjective Shocks	62%	62%	62%
Proportion with Reported Health Shocks	68%	80%	73%

*Monthly household income is calculated as the sum of all earned income, government transfers, remittances, any rent and gifts, in cash or kind, received by the household in the past month; **Average household earnings is calculated as the average of all earned income and profits in the household.

Table 2: Individual Respondent Characteristics (column percentages in parentheses)

	Philippines	Thailand	All
No. of observations	306 (100.0)	284 (100.0)	590 (100.0)
Men	146 (47.7)	135 (47.5)	281 (47.6)
Women	160 (52.3)	149 (52.5)	309 (52.4)
Ave. age (years)	38.3	42.3	40.2
Ave. years of schooling	6.9	5.9	6.4
Employment status:*			
Formal	24 (8)	57 (20)	81 (14)
Informal	208 (68)	213 (75)	421 (71)
Not employed	74 (24)	14 (5)	88 (15)
Ave. monthly earnings (US \$)*	105.1	180.4	146.2

*Earnings refer to total monthly wages and salaries of wage workers, piece rate payment of contracted workers and net earnings of self-employed for all reported jobs. Average earnings exclude respondents who are not employed.

Table 3: Selected Job Characteristics by Gender*

	<u>Philippines</u>		<u>Thailand</u>		<u>Both Countries</u>	
	Men	Women	Men	Women	Men	Women
No. of Individuals Not Employed (as % of sub-sample)	7 (4.79)	67 (41.88)	6 (4.44)	8 (5.37)	13 (4.63)	75 (24.27)
No. of Employed by Job Quality (column % in parentheses)						
Formal	19 (13.67)	5 (5.38)	49 (37.98)	8 (5.67)	68 (25.37)	13 (5.56)
Low Informal	56 (40.29)	21 (22.58)	28 (21.71)	68 (48.23)	84 (31.34)	89 (38.03)
Moderate Informal	52 (37.41)	35 (37.63)	36 (27.91)	47 (33.33)	88 (32.84)	82 (35.04)
High Informal	12 (8.63)	32 (34.41)	16 (12.40)	18 (12.77)	28 (10.45)	50 (21.37)
Total	139 (100.00)	93 (100.00)	129 (100.00)	141 (100.00)	268 (100.00)	234 (100.00)
Ave. Months Working in Main Job	98.3	63.0	120.8	80.8	109.1	73.9
No. of individuals with Work-related Benefits	20	8	52	8	72	16
Ave. Weekly Hours Worked	45.0	43.5	56.1	53.9	50.3	49.9

*Job characteristics refer to main job reported by individual. See Appendix B for details on details on job quality definitions.

Table 4: Types of Occupations Among Women and Men Respondents, by Sector

Sector* (column % in parentheses)	Formal	Informal	All
Manufacturing	6 7%	93 22%	99 20%
Construction	7 9%	36 9%	43 9%
Commerce	5 6%	145 34%	150 30%
Transport	16 20%	55 13%	71 14%
Services	25 31%	39 9%	64 13%
Others	22 27%	53 13%	75 15%
Total	81 100%	421 100%	502 100%

*Sector and formal/informal classification is based on main job reported by individual. Examples of occupations include: Manufacturing -- factory worker, full dressmaker, crafts; Construction -- construction worker; Commerce -- shipping, vending, sales; Transport -- driver; Services -- domestic helper, security guard; Others -- junk trade, moneylender, employee.

Table 5: Participation Rate in Borrowing, Asset Pawning and Asset Sales

	<u>Philippines</u>			<u>Thailand</u>			<u>Both Countries</u>		
	Men	Women	All	Men	Women	All	Men	Women	All
Borrowing									
Proportion who borrowed*	34.9%	45.0%	40.2%	14.8%	30.9%	23.2%	25.3%	38.2%	32.0%
Mean Value (US\$)**	57.6	40.0	47.3	244.8	587.3	483.5	110.3	253.4	199.6
Pawning									
Proportion who pawned*	2.7%	7.5%	5.2%	8.9%	18.8%	14.1%	5.7%	12.9%	9.5%
Mean Value (US\$)**	95.8	31.8	47.8	848.7	169.6	373.4	660.5	128.3	280.4
Asset Sales									
Proportion who sold assets*	4.1%	2.5%	3.3%	8.1%	8.7%	8.5%	6.0%	5.5%	5.8%
Mean Value (US\$)**	71.4	101.5	83.4	158.4	1354.8	806.5	127.7	1059.9	593.8
Totals									
Proportion who borrowed, pawned or sold assets*	38.4%	49.4%	44.1%	26.7%	44.3%	35.9%	32.7%	46.9%	40.2%
Mean Value (US\$)**	67.0	46.4	55.0	467.4	748.1	649.0	223.6	365.8	310.6

*Proportion of all respondents in group. **Mean values represent total individual borrowing reported in the last 12 mos averaged for each subgroup. Mean values include only respondents who reported positive values.

Table 6: Loan Characteristics by Gender and Credit Source*

	<u>Men Borrowers</u>				<u>Women Borrowers</u>			
	Formal	Semi-formal	Informal	Kin	Formal	Semi-formal	Informal	Kin
Total No. of transactions	1	23	129	67	2	33	166	80
No. of Joint transactions	1	18	72	30	1	18	72	30
No. of Individual transactions	0	5	57	37	1	15	94	50
Individual transactions								
Mean Loan Size (US\$)	-	496.0	83.8	56.6	237.1	134.2	91.9	419.3
Annual Interest Rate (%)**	-	30.8	1470.6	64.3	18.0	37.3	1398.2	753.1
No. of Loans w/ collateral	0	3	1	1	1	3	7	1
No. of Loans w/ co-signer	0	4	10	1	0	10	19	1

*Formal sources include banks; Semi-formal sources include microfinance institutions, cooperatives, & pawnshops; Informal sources include employers/contractors, traders/suppliers, moneylenders, informal savings clubs & other sources; Kin sources include relatives, friends and neighbors. **For example, reported monthly interest of 20% is equivalent to 240% per year; weekly interest of 25% is equivalent to 1200% per year.

Table 7: T-test of Means of Financial Coping Mechanism Indicators by Gender^a

(Std. Dev. in parentheses)	Men	Women
Incidence		
Borrowing	0.25 (0.44)	0.38 *** (0.49)
Pawning	0.06 (0.23)	0.13 *** (0.34)
Asset sales	0.06 (0.24)	0.06 (0.23)
Any of the above	0.33 (0.47)	0.47 *** (0.50)
Mean Values^b		
Borrowing	110.34 (283.68)	253.35 (1,622.15)
Pawning	660.51 (1,765.71)	128.30 * (139.61)
Asset sales	127.73 (164.32)	1059.88 (2,675.09)
Total flows from all of the above	223.63 (795.26)	365.83 (1,733.42)

^aThe t-test tests the null hypothesis that the means for men and women are equal. ^bMean values include total flows only for respondents with positive flows. ***significant at the 1% level; ** significant at the 5% level, * significant at the 10% level.

Table 8: T-test of Means of Financial Coping Mechanism Indicators by Subjective Shock^a

Had money shortage? (Std. Dev. in parentheses)	NO			YES		
	Men (n=105)	Women (n=89)	All (n=194)	Men (n=172)	Women (n=219)	All (n=391)
Incidence						
Borrowing	0.01 (0.10)	0.07 (0.25)	0.04 (0.19)	0.41 *** (0.49)	0.51 *** (0.50)	0.46 *** (0.50)
Pawning	0 ^c (0.21)	0.03 (0.18)	0.02 (0.12)	0.09 *** (0.29)	0.17 *** (0.37)	0.13 *** (0.34)
Asset sales	0.06 (0.21)	0.04 (0.21)	0.05 (0.22)	0.06 (0.25)	0.06 (0.24)	0.06 (0.24)
Any of the above	0.06 (0.25)	0.13 (0.34)	0.10 (0.30)	0.49 (0.50)	0.60 *** (0.49)	0.55 *** (0.50)
Mean Values^b						
Borrowing	23.71 -	94.50 (111.89)	84.39 (105.59)	111.58 ^d (285.54)	261.86 (1,664.82)	204.06 (1,317.64)
Pawning	-	173.90 (72.45)	173.90 (72.45)	660.51 ^c (1,765.71)	124.60 (143.65)	286.38 (987.59)
Asset sales	156.95 (135.35)	102.97 (55.01)	135.36 (109.38)	111.80 (182.34)	1354.31 (3,023.51)	784.83 (2,276.82)
Total flows from all of the above	137.92 (133.43)	125.05 (88.29)	129.79 (103.63)	230.69 (826.56)	387.56 (1,808.73)	326.39 (1,503.46)

^aThe t-test tests the null hypothesis that the means for shock and no shock groups are equal. ^bMean values include total flows only for respondents with positive flows. ^cNote that none of the men reporting no shock had positive flows from pawning. ^dT-test failed because of missing std. deviation for no shock group (only 1 obs). ***significant at the 1% level; ** significant at the 5% level, * significant at the 10% level.

Table 9: Marginal Effects from Probit Estimation -- Incidence of Any Financial Coping Mechanism

Dependent Variable:	Incidence of borrowing, pawning or asset sale					
	Philippines		Thailand		Full Sample	
	Model 1A	Model 1B	Model 1C	Model 1D	Model 1E	Model 1F
Subjective shock	0.5781 *** (0.050)		0.3423 *** (0.056)		0.4594 *** (0.038)	
Child health shock		-0.0059 (0.069)		-0.0043 (0.088)		-0.0141 (0.052)
Adult health shock		0.1709 ** (0.077)		-0.0473 (0.072)		0.0352 (0.052)
Female	-0.0144 (0.070)	0.1195 * (0.065)	0.0814 (0.060)	0.1298 ** (0.058)	0.0830 ** (0.040)	0.1413 *** (0.040)
Age	0.0166 (0.020)	0.0133 (0.017)	0.0541 ** (0.026)	0.0686 *** (0.026)	0.0110 (0.015)	0.0165 (0.014)
Age squared	-0.0003 (0.000)	-0.0003 (0.000)	-0.0006 ** (0.000)	-0.0007 *** (0.000)	-0.0002 (0.000)	-0.0003 (0.000)
Low informal	-0.0544 (0.120)	-0.1241 (0.118)	0.1484 (0.092)	0.0968 (0.091)	0.0590 (0.071)	0.0035 (0.068)
Moderate informal	-0.2019 * (0.107)	-0.2668 (0.108)	0.0561 (0.091)	0.0275 (0.090)	-0.0652 (0.069)	-0.1179 * (0.066)
High informal	0.0247 (0.138)	-0.1431 (0.125)	-0.0276 (0.117)	-0.0365 (0.115)	-0.0319 (0.084)	-0.0881 (0.078)
Not employed	0.0079 (0.135)	-0.2288 * (0.115)	-0.0123 (0.191)	-0.0484 (0.193)	-0.0085 (0.091)	-0.1274 (0.082)
Years of schooling	0.0070 (0.012)	0.0028 (0.010)	-0.0206 * (0.011)	-0.0192 (0.012)	-0.0072 (0.008)	-0.0086 (0.007)
Young children dummy	-0.0686 (0.092)	-0.0872 (0.084)	0.2537 *** (0.094)	0.2767 *** (0.089)	0.0766 (0.063)	0.0762 (0.059)
Household size	0.0107 (0.018)	0.0241 (0.016)	0.0248 (0.031)	0.0275 (0.029)	0.0105 (0.015)	0.0144 (0.013)
Single-headed dummy	0.3926 ** (0.152)	0.2115 (0.147)	0.4889 *** (0.094)	0.4364 *** (0.096)	0.4199 *** (0.076)	0.3428 *** (0.078)

Note: Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 9: Marginal Effects from Probit Estimation -- Incidence of Any Financial Coping Mechanism, cont'd

Dependent Variable:	Incidence of borrowing, pawning or asset sale					
	Philippines		Thailand		Full Sample	
	Model 1A	Model 1B	Model 1C	Model 1D	Model 1E	Model 1F
Del Pan dummy	-0.0657 (0.083)	0.0493 (0.069)				
Nomklao dummy			-0.1508* (0.083)	-0.1255 (0.084)		
Udomsuk dummy			0.1601* (0.096)	0.1696* (0.100)		
Philippines dummy					0.0651 (0.062)	0.0874 (0.059)
No. of observations	306	306	284	284	590	590
Pseudo R2	0.2789	0.0653	0.2794	0.1971	0.2156	0.0637

Note: Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 10: OLS Coefficient Estimates -- Total Flows from Financial Coping Mechanisms (in US\$)

Dependent Variable:	Value of Total Flows from Borrowing, Pawning and Asset Sales					
	Philippines		Thailand		Full Sample	
	Model 2A	Model 2B	Model 2C	Model 2D	Model 2E	Model 2F
Subjective shock	32.34 *** (7.30)		256.74 ** (112.58)		159.82 *** (53.73)	
Child health shock		5.24 (6.95)		137.88 (96.97)		80.60 * (43.57)
Adult health shock		12.13 (9.13)		-127.11 (155.74)		-34.43 (55.07)
Female	-6.02 (7.00)	-0.43 (6.96)	140.39 (110.23)	189.15 (121.07)	71.15 (57.13)	96.50 (60.65)
Age	-0.70 (2.62)	-0.47 (2.63)	-40.58 (83.43)	-37.00 (85.84)	-2.92 (18.95)	-2.33 (19.13)
Age squared	0.02 (0.04)	0.01 (0.04)	0.49 (0.84)	0.48 (0.88)	0.05 (0.18)	0.05 (0.18)
Low informal	-25.45 (23.79)	-29.13 (24.71)	236.50 (208.07)	197.51 (197.32)	132.88 (142.33)	117.05 (141.54)
Moderate informal	-27.19 (21.88)	-32.28 (23.00)	-163.30 (129.23)	-188.49 (139.55)	-70.97 (82.13)	-87.01 (84.90)
High informal	-10.00 (21.93)	-17.75 (23.77)	-36.15 (123.43)	-71.85 (131.40)	-42.07 (84.04)	-57.60 (85.72)
Not employed	-24.99 (21.31)	-36.25 (23.15)	-213.55 (162.86)	-261.15 (181.32)	-52.24 (72.02)	-92.27 (76.54)
Years of schooling	1.42 (0.94)	1.16 (0.96)	41.34 (39.69)	43.23 (41.25)	21.37 ** (19.68)	19.51 (19.28)
Young children dummy	0.10 (8.96)	-3.07 (9.18)	420.36 ** (211.68)	412.75 * (212.10)	203.89 (102.37)	189.75 * (99.19)
Household size	1.88 (2.12)	2.54 (2.22)	56.50 (68.92)	54.55 (69.82)	4.07 (15.04)	1.92 (14.60)
Single-headed dummy	27.61 (31.23)	27.14 (32.04)	715.70 (629.66)	729.45 (632.56)	477.03 (425.62)	482.19 (426.18)

Note: Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 10: OLS Coefficient Estimates -- Total Flows from Financial Coping Mechanisms (in US\$), cont'd

Dependent Variable:	Value of Total Flows from Borrowing, Pawning and Asset Sales					
	Philippines		Thailand		Full Sample	
	Model 2A	Model 2B	Model 2C	Model 2D	Model 2E	Model 2F
Del Pan dummy	-5.84 (7.00)	-0.27 (7.17)				
Nomklao dummy			149.23 (190.67)	114.08 (182.43)		
Udomsuk dummy			113.41 (169.77)	79.18 (178.62)		
Philippines dummy					-250.65 ** (121.54)	-222.07 ** (112.28)
Constant	5.72 (50.79)	24.72 (51.07)	0.18 (1,453.76)	20.42 (1,560.93)	-151.53 (301.34)	-82.32 (316.24)
No. of observations	306	306	284	284	590	590
R2	0.1199	0.0759	0.0952	0.0905	0.0634	0.0587

Note: Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 11: Tobit Coefficient Estimates -- Total Financial Flows as Share of Income

Dependent Variable:	Total Financial Flows/Household Income					
	Philippines		Thailand		Full Sample	
	Model 3A	Model 3B	Model 3C	Model 3D	Model 3E	Model 3F
Subjective shock	1.019 *** (0.19)		3.437 *** (1.25)		3.074 *** (0.81)	
Child health shock		-0.006 (0.13)		0.711 (0.85)		0.235 (0.26)
Adult health shock		0.158 ** (0.08)		-0.613 (0.69)		-0.062 (0.22)
Female	-0.026 (0.11)	0.150 (0.13)	0.696 (0.60)	1.185 * (0.62)	0.481 (0.31)	0.830 * (0.46)
Age	0.016 (0.03)	0.019 (0.03)	0.418 (0.31)	0.585 ** (0.29)	0.088 (0.07)	0.125 (0.08)
Age squared	0.000 (0.00)	0.000 (0.00)	-0.005 (0.00)	-0.006 ** (0.00)	-0.001 (0.00)	-0.002 * (0.00)
Low informal	-0.035 (0.18)	-0.166 (0.16)	1.223 (1.04)	0.843 (0.95)	0.460 (0.58)	0.209 (0.45)
Moderate informal	-0.246 (0.19)	-0.411 ** (0.20)	-0.026 (0.76)	-0.277 (0.78)	-0.529 (0.45)	-0.819 ** (0.41)
High informal	0.142 (0.20)	-0.100 (0.23)	0.236 (1.37)	0.062 (1.19)	-0.085 (0.55)	-0.368 (0.55)
Not employed	0.035 (0.19)	-0.324 * (0.19)	-0.498 (1.62)	-0.669 (7.06)	-0.182 (0.60)	-0.823 (0.56)
Years of schooling	0.022 (0.01)	0.016 (0.02)	-0.158 (0.19)	-0.146 (0.19)	-0.032 (0.07)	-0.046 (0.07)
Young children dummy	-0.070 (0.11)	-0.108 (0.15)	2.243 *** (0.86)	2.445 *** (0.78)	0.660 * (0.34)	0.658 ** (0.33)
Household size	-0.005 (0.02)	0.013 (0.02)	0.047 (0.19)	0.032 (0.20)	-0.023 (0.07)	-0.012 (0.06)
Single-headed dummy	0.510 ** (0.22)	0.336 (0.23)	2.814 *** (1.00)	2.947 *** (1.13)	1.857 *** (0.65)	1.800 *** (0.65)

Note: Bootstrap standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 11: Tobit Coefficient Estimates -- Total Financial Flows as Share of Income, cont'd

Dependent Variable:	Total Financial Flows/Household Income					
	Philippines		Thailand		Full Sample	
	Model 3A	Model 3B	Model 3C	Model 3D	Model 3E	Model 3F
Del Pan dummy	-0.191 ** (0.09)	-0.045 (0.10)				
Nomklao dummy			-1.094 (0.74)	-1.364 (0.90)		
Udomsuk dummy			1.436 (0.95)	1.201 (1.01)		
Philippines dummy					-0.272 (0.25)	0.045 (0.27)
Constant	-1.178 * (0.69)	-0.373 (0.68)	-14.906 ** (7.54)	-16.719 ** (7.07)	-5.381 *** (1.75)	-3.919 ** (1.89)
No. of observations	306	306	284	284	590	590
Left-censored	171	171	182	182	353	353
Uncensored	135	135	102	102	237	237
Pseudo R2	0.1691	0.0367	0.097	0.0702	0.0784	0.0266

Note: Bootstrap standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 12: Marginal Effects from Probit Estimation -- Full Sample

Dependent Variable:	Incidence of Borrowing		Incidence of Pawning		Incidence of Asset Sales	
	Model 4A	Model 4B	Model 4C	Model 4D	Model 4E	Model 4F
Subjective shock	0.4263 *** (0.033)		0.0943 *** (0.020)		0.0073 (0.018)	
Child health shock		0.0134 (0.048)		-0.0014 (0.024)		-0.0151 (0.023)
Adult health shock		0.0581 (0.049)		-0.0332 (0.021)		-0.0025 (0.018)
Female	0.0540 (0.034)	0.1145 *** (0.037)	0.0469 *** (0.019)	0.0716 *** (0.022)	0.0060 (0.016)	0.0070 (0.016)
Age	0.0186 (0.013)	0.0187 (0.013)	0.0061 (0.008)	0.0088 (0.009)	-0.0048 (0.005)	-0.0042 (0.005)
Age squared	-0.0002 (0.000)	-0.0003 * (0.000)	-0.0001 (0.000)	-0.0001 (0.000)	0.0001 (0.000)	0.0000 (0.000)
Low informal	0.0709 (0.069)	0.0382 (0.067)	-0.0205 (0.023)	-0.0380 (0.028)	-0.0090 (0.024)	-0.0111 (0.024)
Moderate informal	-0.0045 (0.067)	-0.0501 (0.067)	-0.0287 (0.023)	-0.0467 (0.028)	-0.0372 (0.021)	-0.0391 * (0.021)
High informal	0.0159 (0.079)	-0.0372 (0.076)	-0.0181 (0.027)	-0.0313 (0.032)	-0.0084 (0.027)	-0.0105 (0.026)
Not employed	0.1033 (0.094)	-0.0362 (0.080)	-0.0361 (0.023)	-0.0600 * (0.025)	-0.0408 (0.021)	-0.0422 (0.020)
Years of schooling	-0.0106 (0.007)	-0.0136 ** (0.007)	-0.0027 (0.003)	-0.0035 (0.003)	0.0025 (0.003)	0.0026 (0.003)
Young children dummy	0.0676 (0.054)	0.0639 (0.055)	-0.0098 (0.022)	-0.0090 (0.028)	0.0083 (0.024)	0.0112 (0.024)
Household size	-0.0033 (0.012)	0.0044 (0.012)	0.0074 (0.005)	0.0094 (0.006)	0.0048 (0.006)	0.0055 (0.006)
Single-headed dummy	0.3884 *** (0.100)	0.3186 *** (0.087)	0.1054 *** (0.055)	0.1096 ** (0.060)	-0.0212 (0.022)	-0.0221 (0.022)
Philippines dummy	0.1776 *** 0.049	0.1987 *** (0.052)	-0.0710 *** (0.025)	-0.0807 *** (0.029)	-0.0593 ** (0.026)	-0.0645 ** (0.028)
No. of observations	590	590	590	590	590	590
Pseudo R2	0.2597	0.0802	0.1728	0.1135	0.0605	0.0622

Note: Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 13: OLS Coefficient Estimates -- Decomposition of Total Financial Flows (US\$), Full Sample

Dependent Variable:	<u>Flows from Borrowing</u>		<u>Flows from Pawning</u>		<u>Flows from Asset Sales</u>	
	Model 5A	Model 5B	Model 5C	Model 5D	Model 5E	Model 5F
Subjective shock	87.53 ** (42.66)		34.87 * (19.34)		37.42 (26.84)	
Child health shock		42.43 (33.00)		10.15 (10.12)		28.02 (25.63)
Adult health shock		-8.08 (34.75)		-41.28 (27.25)		14.93 (34.44)
Female	16.95 (21.37)	30.23 (26.63)	-9.25 (15.02)	-1.87 (12.22)	63.46 (50.72)	68.15 (53.23)
Age	-12.21 (17.32)	-11.80 (17.54)	11.28 (7.35)	11.27 (7.21)	-1.99 (3.86)	-1.80 (3.62)
Age squared	0.10 (0.15)	0.09 (0.16)	-0.11 (0.07)	-0.11 * (0.06)	0.06 (0.08)	0.06 (0.08)
Low informal	111.14 (111.57)	103.18 (107.25)	-67.45 (72.69)	-73.95 (76.23)	89.19 (60.48)	87.83 (60.37)
Moderate informal	1.66 (35.22)	-7.03 (34.13)	-72.71 (73.99)	-77.49 (76.66)	0.07 (12.62)	-2.50 (11.75)
High informal	12.38 (39.24)	3.63 (38.39)	-51.92 (74.38)	-55.71 (75.93)	-2.53 (16.78)	-5.52 (16.05)
Not employed	8.21 (40.37)	-12.85 (37.23)	-51.71 (58.50)	-64.11 (64.59)	-8.74 (14.90)	-15.30 (17.22)
Years of schooling	19.00 (17.93)	17.93 (17.51)	1.10 (2.64)	1.03 (2.55)	1.28 8.14	0.55 (8.05)
Young children dummy	79.01 (58.00)	71.96 (53.51)	66.49 (52.65)	63.36 (50.07)	58.39 (70.64)	54.43 (70.86)

Note: Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 13: OLS Coefficient Estimates -- Decomposition of Total Financial Flows (US\$), Full Sample, cont'd

Dependent Variable:	<u>Flows from Borrowing</u>		<u>Flows from Pawning</u>		<u>Flows from Asset Sales</u>	
	Model 5A	Model 5B	Model 5C	Model 5D	Model 5E	Model 5F
Household size	11.15 (12.43)	10.12 (11.46)	-8.57 (6.68)	-8.87 (6.94)	1.50 (5.54)	0.67 (6.15)
Single-headed dummy	560.83 (424.48)	564.87 (425.27)	-0.41 (15.74)	-4.66 (17.93)	-83.38 (72.04)	-78.01 (67.26)
Philippines dummy	-133.28 (107.05)	-117.24 (99.55)	-44.31 * (22.82)	-43.32 ** (21.86)	-73.06 (57.43)	-61.51 (50.70)
Constant	96.32 (244.15)	130.96 (265.18)	-169.61 (115.56)	-140.50 (98.56)	-78.24 (146.05)	-72.79 (148.87)
No. of observations	590	590	590	590	590	590
R2	0.0616	0.0592	0.0274	0.0287	0.0245	0.0241

Note: Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 14: Tobit Coefficient Estimates -- Decomposition of Ratio of Financial Flows/Income, Full Sample

Dependent Variable:	Flows from Borrowing as Share of HH Income		Flows from Pawning as Share of HH Income		Flows from Asset Sales as Share of HH Income	
	Model 6A	Model 6B	Model 6C	Model 6D	Model 6E	Model 6F
Subjective shock	2.231 *** (0.59)		2.666 ** (1.06)		0.792 (1.50)	
Child health shock		0.143 (0.13)		0.168 (0.45)		-0.513 (1.41)
Adult health shock		0.170 (0.14)		-0.852 (0.53)		-0.331 (1.05)
Female	0.184 (0.16)	0.390 *** (0.15)	0.768 (0.48)	1.009 ** (0.49)	0.847 (1.55)	0.984 (1.41)
Age	0.067 (0.05)	0.070 (0.05)	0.253 (0.29)	0.260 (0.22)	-0.299 (0.45)	-0.252 (0.37)
Age squared	-0.001 (0.00)	-0.001 (0.00)	-0.003 (0.00)	-0.003 (0.00)	0.003 (0.00)	0.003 (0.00)
Low informal	0.288 (0.36)	0.191 (0.29)	-0.669 (0.74)	-0.949 (0.58)	0.088 (1.84)	-0.090 (1.78)
Moderate informal	-0.123 (0.28)	-0.259 (0.25)	-0.887 (0.82)	-1.098 (0.68)	-2.677 (2.58)	-2.886 (2.67)
High informal	0.044 (0.29)	-0.114 (0.30)	-0.224 (1.03)	-0.432 (0.98)	-0.686 (2.35)	-0.843 (1.90)
Not employed	0.189 (0.31)	-0.224 (0.27)	-0.888 (0.99)	-1.353 (2.81)	-3.600 (18.68)	-3.854 (14.13)
Years of schooling	0.006 (0.03)	-0.008 (0.03)	-0.050 (0.05)	-0.056 (0.05)	0.040 (0.25)	0.044 (0.20)
Young children dummy	0.320 (0.20)	0.311 * (0.19)	0.422 (0.61)	0.406 (0.59)	0.462 (2.01)	0.602 (1.69)

Note: Bootstrap standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 14: Tobit Coefficient Estimates -- Decomposition of Ratio of Financial Flows/Income, Full Sample, cont'd

Dependent Variable:	Flows from Borrowing as Share of HH Income		Flows from Pawning as Share of HH Income		Flows from Asset Sales as Share of HH Income	
	Model 6A	Model 6B	Model 6C	Model 6D	Model 6E	Model 6F
Household size	-0.019 (0.04)	0.001 (0.03)	0.079 (0.10)	0.077 (0.08)	0.220 (0.41)	0.245 (0.33)
Single-headed dummy	1.678 ** (0.74)	1.526 ** (0.61)	1.169 ** (0.59)	1.142 ** (0.50)	-2.058 (15.48)	-2.107 (11.76)
Philippines dummy	0.326 ** (0.13)	0.461 *** (0.16)	-1.747 ** (0.891)	-1.560 ** (0.671)	-3.521 * (2.091)	-3.694 ** (1.861)
Constant	-4.518 *** (1.437)	-2.852 ** (1.192)	-9.959 (7.58)	-7.987 (5.14)	-4.226 (9.407)	-4.353 (8.067)
No. of observations	590.000	590.000	590.000	590.000	590.000	590.000
Left-censored	401.000	401.000	534.00	534.00	556.000	556.000
Uncensored	189.000	189.000	56.000	56.000	34.000	34.000
Pseudo R2	0.147	0.050	0.113	0.077	0.039	0.039

Note: Bootstrap standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

References

- Bajaj, Manjul. 1999. *Invisible Workers, Visible Contributions: A Study of Homebased Women Workers in Five Sectors across South Asia*. Background Paper for Regional Policy Seminar.
- Balakrishnan, R. and M. Huang, 2000. "Flexible Workers – Hidden Employers: Gender and Subcontracting in the Global Economy, Report on a research project of the women's economic and legal rights program," Washington, DC: The Asia Foundation.
- Benería, L., 2001. "Shifting the Risk: New Employment Patterns, Informalization, and Women's Work, *Interntional Journal of Politics, Culture and Society*, Vol. 15, No. 1, September: 27-53.
- Benería, L. and M. Floro, 2006. *Distribution, Gender and Labor Market Informalization: A conceptual Framework and a Focus on Homebased Workers*, forthcoming in L. Beneria and N. Kudva, eds., *Rethinking Informalization: Precarious Jobs, Poverty and Social Protection*, Cornell e-Publishing.
- Boonmathya, Ratana et al, 1999. *The Situation of Women Subcontracted Workers in the Garment Industry in Bangkok, Thailand*, Working Paper, The Asia Foundation, Bangkok, October
- Carr, Chen and Tate, 2000. "Globalization and Home-Based Workers," *Feminist Economics*, Vol. 6, No. 3, November: 123-142.
- Dercon, Stefan. 2004. "Insurance for the Poor", Paper prepared for Inter American Development Bank, Washington DC.
- Fafchamps, Marcel and Susan Lund (2003). "Risk-sharing networks in rural Philippines," *Journal of Development Economics* Vol. 71, No. 3: 261-287.
- González de la Rocha, M, 2000. "Private Adjustments: Household Responses to the Erosion of Work," UNDP, Social Development and Poverty Elimination Division , Conference paper Series No. 6, New York: UNDP.
- ILO, 2002. *Women and Men in the Informal Economy*, Geneva: International Labor Organization.
- Keyes, W. 1982. "Approaches to Financing of Unconventional Housing: Informal Systems." Presented at 1982 Regional Seminar on Financing of Low-Income Housing for Asian Development Bank, Manilla.
- Kronkaew, Medhi. 2001. "A Tale of an Economic Crisis: How the Economic Crisis Started, Developed and is Ending in Thailand" in Yun-Peng Chu and Hal Hill (eds.) *The Social Impact of the Asian Financial Crisis*, Edward Elgar, Cheltenham, pp. 27-80.

Messier, John, 2005. "Dynamics of Poverty Trap and the Role of Credit", unpublished doctoral thesis, Economics Department, American University, Washington DC, forthcoming.

Montes, Manuel, 1998. The Currency Crisis in Southeast Asia, Institute of Southeast Asian Studies, Singapore.

Morduch, Jonathon (1995). "Income Smoothing and Consumption Smoothing" The Journal of Economic Perspectives, vol 9 (Summer): 103-114.

Moser, Caroline. (1981), "Surviving in the Suburbios," Bulletin of the Institute of Development Studies 12(3), Sussex, IDS.

National Statistic Office (1999). "The First National Thai Homework Survey, Office of the Prime Minister, Bangkok.

_____, 2002. Thailand's Economic Situation in 2001 and Economic Outlook in 2002, Bangkok,

_____, 2003b. "Poverty Indicator and the Analysis of Poor People", Bangkok, http://www.nesdb.go.th/main_menu/Macro/GDP/menu.html.

Nguanbanchong, Apitchaya. 2004. "Gender Effects on Savings: Evidence from Urban Poor Households in Thailand", Unpublished doctoral dissertation, American University, July.

Pichetpongsa, Anant. 2004. "Work Intensity and Well-being: The Case of Women Homebased Workers in Thailand", Unpublished doctoral dissertation, American University, March.

World Bank, (2001). Poverty and Public Policy, Thailand Social Monitor, World Bank Office, Bangkok.