

# How Do the Poor Cope with Shocks in Bangladesh?

Evidence from Survey Data

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## Abstract

This paper uses household survey data collected in September–October 2009 on a nationally representative sample of 2,000 households in Bangladesh to examine the nature of shocks experienced by households over the preceding 12 months and the type of coping mechanisms that were adopted. The analysis finds that more than half the sample claimed to have faced a shock—economic, health, climatic, or asset related—over the previous year. Surprisingly, the non-poor face a larger share of these shocks compared with the poor. A closer look at this result shows that the non-poor report a significantly larger share of “asset-related” shocks, which is consistent with the fact that the poor have fewer assets to lose. Health-related shocks dominate and households appear to have coped with these shocks through savings and loans, help from friends, and depletion of assets. The

results show that households, when faced with covariate shocks due to climatic reasons, are less able to cope. As would be expected, the poor are less able to cope with shocks compared with the non-poor; the poor are more likely to use coping mechanisms that could have negative welfare implications in the longer term, including the depletion of assets, reduction of essential consumption, and use of high-interest loans. Econometric analysis suggests that geographical location, socio-economic status, and access to microfinance all affect the ability to cope with shocks. Policy implications include the importance of developing safety nets that take into account the vulnerability to climate-related shocks and further developing the links between micro-finance and safety net programs.

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# **How do the poor cope with shocks in Bangladesh?**

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## 1. Introduction

A growing body of evidence points to the role of risks, shocks and vulnerability in perpetuating poverty (Morduch, 1990; Skoufias and Quisumbing, 2003; Dercon, 2004; Dercon, Hoddinott and Woldehanna, 2005). While all households are negatively affected by uninsured shocks, relatively poorer households are likely to lack the necessary human and physical capital to recover from them (Del Ninno and Marini, 2005). Some shocks can have long-lasting effects leading to chronic poverty (Dercon, 2004; Dercon, Hoddinott and Woldehanna, 2005) and adverse human development outcomes (Foster, 1995; Jacoby and Skoufias, 1997; Jensen, 2000). Thus, understanding the nature of shocks, identifying those vulnerable to them, and analyzing households' ability to cope with shocks is important to help design programs and interventions to prevent households from falling into poverty and/or compromise their human capital.

While Bangladesh has witnessed a remarkable 28 percentage point drop in poverty over the last two decades (from 59% in 1990 to 31.5% in 2010 using Household Income and Expenditure Survey data), a sizeable number of Bangladeshis remain clustered around the poverty line. This implies that even a small shock can cause large movements in poverty rates as many non-poor remain highly vulnerable in an environment with limited insurance markets. But what type of shocks really matter to Bangladeshi households and how do they cope?

Despite the pervasive nature of shocks in Bangladesh, particularly weather related covariate shocks, there is limited knowledge of their incidence and the coping mechanisms adopted by households to deal with them. Quisumbing (2007) in a longitudinal study in rural Bangladesh finds more than half of all sampled households to have been affected by shocks in a ten year period (1997-2006/07). The three most frequent shocks reported include expenses and foregone income due to illness, dowry and wedding related expenses, and floods. The data suggests households with lower endowments in terms of education, and land/asset ownership, are more vulnerable to shocks. The study, however, is unable to shed any light on how households cope with these shocks.

This paper uses household survey data collected in September-October 2009 on a nationally representative sample of 2000 households in Bangladesh to examine the nature of

shocks experienced by households over the preceding 12 months and the type of coping mechanisms that were adopted.

Several patterns emerge. While households in Bangladesh faced a wide variety of shocks in 2008-09, we find that health related shocks dominate, followed by climatic shocks. More importantly, a large number of households said they were unable to cope with climatic shocks presumably due to their covariate nature, while they were better able to handle health issues. Moreover the poor are least able to cope with shocks though surprisingly the non-poor appear to face a larger incidence of shocks.

The paper is organized as follows. Section 2 provides details on the data used for the paper and Section 3 provides a descriptive analysis of the type of shocks faced by households in Bangladesh and the main coping strategies. Section 4 discusses results from a multivariate analysis assessing the factors associated with a household being able to cope with shocks. Section 5 concludes.

## **2. Data and household characteristics**

In this paper, we use a nationally-representative survey of 2000 households. The data were collected by the Power and Participation Research Center (PPRC), a Dhaka based research institute. The sampling frame for this study uses the Integrated Multi-Purpose Sample (IMPS) design of the Bangladesh Bureau of Statistics. The IMPS was updated on the basis of the Population Census data of 2001 and now consists of 1000 Primary Sampling Units (PSUs) across the country of which 640 PSUs are rural and 360 urban with the urban further sub-divided into other urban and statistical metropolitan area (SMA). Each PSU consists of 200 households. A total of 16 strata were formed: 1 rural strata from each of the 6 administrative divisions of the country, 1 urban strata from each of the 6 administrative divisions, and 1 SMA (statistical metropolitan area) strata from each of the 4 divisions having SMA (Barisal and Sylhet have no SMAs).

The survey was implemented in 100 PSUs within the 16 strata described above. This was done on the principle of probability proportionate to size with size defined here as the number of households in each strata. Using this principle, the allocation of PSUs to each of the 16 strata is shown in Table 1. The next step was to generate the actual list of the 100 PSUs for the 16 strata

based on linear systematic sampling. The final step in the sampling plan was to make the choice of sample households within each PSU. The number of households to be surveyed in each of the selected PSU was fixed at 20; these were chosen from the total of 200 households in each PSU on the principle of systematic sampling. Weights based on population were developed for each of the three PSU categories i.e. rural, other urban and SMA.

Insert Table 1

The questionnaire for the household survey was formulated around five modules. Module 1 focused on household consumption expenditure, with a detailed list of both food and non-food items. Module 2 focused on household income, including changes relative to the previous year. The other variables covered in module 2 include access to safety net programs, participation in micro-credit programs, current levels of debt and credit-worthiness. Module 3 focused on shocks and coping. Specific variables were exposure to a listed range of shocks and coping strategies to deal with each category. Module 4 focused on assets and investment. Variables included approximate value for each type of listed asset, amount invested in last year in listed range of investment area, and source of investment funds. Module 5 explored the level of optimism of individual household on a range of issues, expectations from the government, and assessment of priority problems in 2009 and in 2008. We do not use this last module for the purposes of this paper.

Table 2 provides descriptive statistics summarizing key household characteristics. A little over one fourth of the sampled households were from urban areas, consistent with other information on the extent of urbanization. Households had multiple sources of income with a mean of 2.6. The major sources of household income included farm and non-farm manual labor (36.8% of respondents) and agriculture (22.9%), followed by small business activities (11.9%). Over forty percent of the household heads are illiterate or can only sign their name.

Almost half of the households are members of a microcredit organization which is consistent with other data on micro-finance membership (e.g. World Bank 2008). Consistent with this high level of micro-credit borrowing, access to credit is not perceived by households to be an important constraint: 72.4% of households had a loan at the time of the interview and 86.4% report that they could get a loan if needed during an emergency. A significantly lower

percentage of the sample, however, – 28.8% - had access to safety nets, the most common being food-related safety net programs such as VGF and VGD (13.1%), followed by secondary school stipends/training programs (12.4%) while 9.2% of households had access to other cash-based safety net programs.

Insert Table 2

The cross-sectional nature of the dataset poses some limitations for the analysis of vulnerability and risk-management approaches. For instance, the literature suggests households can adopt both *ex ante* and *ex post* coping strategies. One illustration is that households in a community may undertake *ex ante* income-smoothing strategies and adopt a low-return, low-risk crop portfolio (Morduch, 1990; Dercon, 1996) or informally agree to insure each other in the event of crises (Rosenzweig, 1988; Besley, 1995). Panel data is ideal to capture both changes in any measure of vulnerability as well as the various coping strategies. The survey we use collects information mainly on *ex post* coping strategies and, thus, we cannot account for any *ex ante* coping mechanisms households may have adopted.

One other limitation arises from the scope of the questions asked in the survey. In particular, the questionnaire does not include any information on the impact or severity of the shock. For this reason, as we discuss below, we emphasize the capacity of households to deal at all with shocks, as reflected by their ability to find (ex-post) coping mechanisms to manage the shock.

In general, however, this survey allows us to gain new insights into, not only the shocks experienced by households in Bangladesh, but also the instruments used to cope with them. Next we discuss the key findings from the survey in this respect.

### **3. Shocks and coping mechanisms: A descriptive analysis**

In this section we present the data on the distribution of shocks in our sample. The objective is to present a description of what kinds of shocks occurred over the survey period, who was affected by them and what kind of coping mechanisms were adopted. We also analyze the extent to which the answers to these questions depend on the socio-economic status or geographic location of households.

The survey defines shocks as adverse events that lead to a loss of household income and/or loss of productive assets. The “shock” module asks households to go through a list of adverse events and select those that affected them in the last year. We grouped this long list into a number of broad categories: economic, climatic, health and asset. Economic shocks include problems in terms of employment, reduced remittances, loss of business, and difficulty with selling agricultural products and buying inputs. Climatic shocks include crop damage and destruction of homes and assets due to floods as well as loss of land due to river erosion. Health shocks include death and/or ailment of an earning member, and severe disease of a household member. Asset shocks include theft and dowry related expenses.

The data show that more than half of the sample households experienced one or more shocks over a one year recall period. Conditional on experiencing a shock, the average number of shocks across all households was 1.6 (see Table 3). Rural households were more likely to experience shocks (and also faced a higher number of shocks on average) and were more vulnerable: thirty percent of rural households who experienced one or more shocks report that income from their main source fell in 2009 compared to 21 percent of urban households who reported the same.

Insert Table 3

Households experienced numerous types of shocks but the most common type of shock is idiosyncratic (Tables 4 and 5). Health-related shocks (severe disease or death of a household member) are the most common (24.1% of all respondents) followed by climatic and environmental shocks (15%), economic shocks (14.2%), and finally asset shocks (7.5%).

Insert Table 4

To the extent that data from September 2009 can point to the impacts of the 2009 global financial crisis, the results suggest that this shock appears to have had limited impact in Bangladesh. The two main channels which were of concern were a drop in remittance income and job loss in export industries (especially garments). The household survey data suggests that these concerns did not materialize. When households were asked whether they had experienced a crisis due to a set of reasons, less than 1% of households said they had experienced a shock



related to the decrease or a full loss of remittance income.<sup>1</sup> Similarly, 61 percent responded income from “garment factory work” remained the same, while 34 percent reported an increase and 4 percent reported a decrease. This data is clearly not a comprehensive assessment as it is difficult to say what income from these sources would have been in the absence of the economic crisis. However, the fact that so few households appear to have been adversely affected appears consistent with ex-post macro-economic data. Remittances increased by about 13 percent between 2008/09 and 2009/10 (from \$9.7 billion to \$11 billion). Export earnings from garments in 2009/10 also increased compared to the previous year (\$12.3 billion in 2008/09 and \$12.5 billion in 2009/10) though less so than the change in remittances. Overall, ‘economic shocks’ appear to be mostly from agriculture-related events rather than loss of employment or business.

The fact that the non-poor report a larger incidence of shocks relative to the poor (56% compared with 51%) may at first glance appear counter-intuitive (table 5). This is consistent with the results found in Quisimbing (2007) where she explains the possible presence of respondent bias when reporting on shocks of certain types. For example, it is possible that only better-off households will actually be able to pay for certain types of “economic shocks” such as dowries and wedding expenses and thus only wealthier households will report having these types of shocks. Non-poor households are likely to have more assets compared to poor households and thus report higher incidence of asset shocks. Heltberg and Lund (2010) also report that the non-poor face more shocks than the poor in Pakistan, and that shocks are predominantly health-related.

Insert Table 5

According to Table 5, the type of shocks reported varies significantly depending on poverty status and the location of the household. Conditional on experiencing a shock, the incidence of climatic shocks is larger among poor households (defined as the bottom 40 percent of the population along the expenditure distribution) while asset and health related shocks appear to be more common among non-poor households. Conditional on experiencing a shock, only the incidence of climatic shocks varies significantly across urban and rural households, with the

latter being significantly more affected (17% of rural households report being affected by these shocks compared to 9.5% among urban households).

Rural households are more likely to be involved in agriculture and thus more likely to face weather related climatic shocks e.g. loss of land due to river erosions and floods. The geographic distribution of the shocks is also consistent: households in Barisal, one of the poorest divisions located in the Southern-most tip of the delta and thus susceptible to flooding and river erosions, face the highest incidence of shocks with a majority of shocks being weather-related. Households in Sylhet which is in the North-Eastern corridor bear the second highest incidence of shocks but the majority of the shocks are health-related.

For each shock, households were asked to list the ways that the household coped. All of these responses were broadly organized under ten different types of coping strategy: reduction of non-essential consumption; reduction of essential consumption; help from friends; help from government and NGOs; low interest loans; high interest loans; savings; increase in labor supply; and depletion of assets.

In addition, households were given the option of responding that they “could not cope” with each of the shocks. Out of the total number of households experiencing a shock, 36.5 percent shocks say they could not cope with one or more shocks. We interpret not being able to cope as meaning that households were not able to mitigate the negative effects of the shock experienced.

As presented in Table 6, we find that households are significantly more likely to say that they could not cope when the shock is climatic (59.1 percent) than any other shock. This is consistent with the notion that climatic shocks are generally covariate shocks and households are unable to rely on community-based coping instruments. A little over 50 percent and 60 percent of the households in Rajshahi and Barisal, respectively, are unable to cope with shocks. Both these divisions are relatively poor as well as highly prone to seasonal shocks and river bank erosions. A significantly higher number of rural households (39.7%) report being unable to cope with shocks compared to urban households (34.3%) and is consistent with the fact that climatic shocks occur mainly in rural areas.

Table 6 also shows, using savings and low interest loans are the two most common coping mechanisms used by households who experienced a shock: 34.2 percent used savings while 24.9 percent used loans. Savings and borrowing are mainly used to deal with health shocks; borrowing is also extensively used to cope with asset shocks.

About 19 percent of households reported disposing household assets in order to deal with shocks. Public assistance, or any form of formal social protection, on the other hand appears to play a negligible role in helping households cope with shocks. Only 1.2 percent of households report using safety nets as being one of the top four coping mechanisms used to face a shock. The relative importance of savings and borrowing compared to public assistance in dealing with shocks is perhaps not surprising given the vast microfinance, and informal credit sector that operates in Bangladesh and the low coverage of public safety nets.<sup>2</sup>

Importantly, even with the widespread use of microfinance, households still rely on coping mechanisms that are likely to have negative welfare consequences or that are very costly. This is the case of many rural households. While urban households rely more on savings, rural households are, for example, more likely to dip into their assets or use high interest loans from money lenders compared to their urban counterparts. A number of households (almost 8 percent) also report having reduced essential consumption as a coping strategy, indicating the severity of some of these shocks and the lack of appropriate instruments to manage their effects. Such an extreme coping strategy is more common for economic shocks (table 6), and is mostly adopted by poor households relative to the non-poor, as one would expect.

Insert Table 6

Both the non-poor and poor are equally likely to utilize low interest loans to deal with shocks. Poor households also have access to some savings but less so than the non-poor: 25.7% report using savings to cope with shocks among the poor, compared to 39.9 percent of the non-poor. We infer from the ‘could not cope’ column that when we disaggregate the sample by expenditure quintiles, we find that the portfolio of coping instruments available to the poorest households is a lot more limited than that available to richer households. Conditional on

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<sup>2</sup> The gap may also be explained by the fact that we are only looking at ex-post coping mechanisms and, to the extent that that public assistance received by the household does not increase with a shock, households may not perceive it as a relevant coping strategy ex-post.

experiencing a shock, 41.2 percent of the households in the poorest quintile were unable to cope with the shock, significantly higher than the 31 percent for the wealthiest quintile (see Table 6). So while poorer households are no more likely than wealthier households to face shocks, they are more vulnerable once they have faced a shock. A majority of the households who face shocks in the poorest divisions – Rajshahi and Barisal - also report to be unable to cope with the shocks. Not only are these divisions relatively poorer, they are also prone to seasonal climatic shocks such as droughts and river erosions.

Overall, the data seem to suggest that households in 2008-09 faced a wide variety of shocks, in addition to the global recession. However, the impact of the global crisis on households via reduced flow of remittances and/or retrenchment from formal private sector employment (especially garments) was negligible. Health-related idiosyncratic shocks dominated and households appear to have coped with these shocks through savings and loans, help from friends and by depleting assets. Households, when faced with covariate shocks due to climatic reasons, appear however to be less able to cope: more than half of the sampled households that experienced climatic shocks were not able to cope with them. Public safety nets or the vast number of NGOs that operate in Bangladesh do not appear to play much of a role in helping households deal with shocks. The following section uses multivariate regression analysis to better understand which households are able to deal with these shocks and why.

#### **4. Determinants of household ability to cope with shocks**

In this section, we try to explore the factors that make households more likely to face shocks as well as factors that help them cope with shocks. In Table 7 we present results of two logit models. The first column shows the results where the dependent variable takes the value 1 if the household faced one or more shocks in the last 12 months; and zero, otherwise. The second column includes the results of a logit regression on the factors which influence whether a household is unable to cope with shocks. Explanatory variables include household income; household size; the age, gender and education levels of the household head; household poverty status; and per capita value of assets owned, dummy variables representing the four broad categories of shocks and dummy variables representing household location in terms of divisions and urban/rural status.

A number of patterns emerge that are consistent with our earlier description of the data. The results show that households whose main source of income is agriculture and big industry are more likely to face shocks compared to households who depend on wage labor. Households with more educated household heads (i.e. those who passed secondary education) relative to those who are illiterate are also more likely to face shocks. These results confirm the earlier finding that poorer households in Bangladesh are not necessarily more prone to facing shocks. Indeed the dummy variable representing household poverty status confirms this although the result is only marginally significant ( $p$  value = 0.10). The result also confirms that rural households are more likely to face shocks due to agro-climatic factors. Again confirming the results in the descriptive section, households in Barisal and Sylhet are more likely to have faced shocks relative to households in other divisions.

Insert Table 7

Next, for households who faced a shock, we explore the factors that allowed certain households to cope and others not. The dependent variable once again is dichotomous and takes the value 1 for the household who reported to not have coped with the shock conditional on facing a shock, and zero, otherwise. Along with the independent variables used in the previous logistic regression, we include dummy variables representing the four broad types of shocks, as well as dummy variables representing access to services and programs that we hypothesize would help households cope with shocks such as whether the household is a member of a microcredit organization; whether the household receives transfers from a public safety net program; and whether the household can borrow against an emergency.

The results presented in Table 7 also point to the importance of access to savings and loans services rather than public safety nets in dealing with shocks (at least ex-post and as reported by households). We find that households who are members of microfinance institutions (MFIs), who provide both savings facilities as well as access to micro-credit, are more likely to be able to cope with shocks. The results are consistent with existing studies that argue that microfinance plays a positive role in smoothing consumption (Morduch, 1999; Pitt and

Khandker, 1998; Zaman, 1999).<sup>3</sup> On the other hand, access to public safety nets is not a significant determinant of the household's assessment of whether they are able to cope or not. This result is not surprising since except for a few (e.g. Vulnerable Group Feeding and Gratuitous Relief) most of the safety nets are designed to mitigate the effects of chronic poverty and are not catered to mitigating the effects of shocks. These results need to be interpreted with caution as we do not account for the fact that those who access these services – both micro-finance and safety nets – may have different unobservable characteristics relative to those households who do not (the 'selection bias' problem).

Household poverty status is also a significant determinant of the ability to cope. We had earlier found poor households to be less likely to have experienced one or more shocks. Conditional on facing a shock however, we find that poor households are more likely to not be able to cope. This result is consistent with the results we find with regards to the division dummy variables: households living in poorer divisions are less likely to cope with shocks. Relative to households living in Sylhet, the results show that households in Rajshahi, Khulna and Barisal are more likely to not be able to cope with shocks. The results also show that households whose major source of income was from agriculture are more likely to not be able to cope relative to households whose major source of income was from casual labor. The results also show that households are more likely to be able to cope with health shocks but not climatic and asset shocks.

## **5. Conclusion**

We can summarize our main findings as follows. First, shocks of various forms affect a large share of Bangladeshi households – our survey of 2,000 households showed that more than half the sample claimed to have faced a shock over the previous year. Surprisingly, the non-poor face a larger share of these shocks compared to the poor – a closer look at this result shows that the non-poor report a significantly larger share of 'asset-related' shocks than the poor which is consistent with the fact that the poor have fewer assets to lose. As one would expect, however, the poor are less able to cope with shocks compared to the non-poor. Importantly, the poor are

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<sup>3</sup> As a robustness check we also run a multinomial model where households face one of the following mutually exclusive outcomes – to not experience a shock; to experience a shock and cope with it; and to experience a shock and not be able to cope with it. This allows us to include the full sample as opposed to half the observations used in the logistic regression to look at household ability to cope. We find that the same variables that are significant in the logit model are also significant determinants of the relative probabilities of facing the above outcomes. Results are available from the authors.

also more likely to use coping mechanisms that could have negative welfare implications in the longer term, including the depletion of assets, reduction of essential consumption and the use of high interest loans.

The analysis of factors that contribute to household coping with shocks suggest that microfinance products may help households cope with idiosyncratic shocks but when it comes to large covariate shocks, households in Bangladesh remain highly vulnerable. Given that climatic shocks in Bangladesh are annual events in certain parts of the country, the results highlight the need for weather-related insurance products to reduce *ex ante* risks for households. The vast network of micro-finance institutions could provide a potential platform for the piloting of such products. That said, given that there remains a large number of people living in extreme poverty there is also a clear need for a public safety net system that can be scaled up to respond to shocks affecting the poor.

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**Table 1: Allocation of PSUs to Strata**

<b>Division</b>	<b>Rural</b>	<b>Other Urban</b>	<b>SMA</b>
Dhaka	16	4	10
Chittagong	12	4	5
Rajshahi	17	4	2
Khulna	8	2	2
Sylhet	5	1	-
Barisal	5	2	-
Total	64	17	19

**Table 2: Descriptive Statistics**

<b>Household Characteristics</b>	<b>Mean</b>	<b>Std. Err.</b>
Household size	5.26	0.049
Age of household head	44.43	0.287
Proportion of female headed household	0.024	0.003375
Proportion of household faced a shock	0.540704	0.011449
Proportion of urban household	0.265686	0.009023
Proportion of household head who:		
is illiterate	0.211706	0.009509
can sign only	0.220793	0.009648
completed primary level education	0.215459	0.009481
completed secondary level education	0.158027	0.008364
completed SSC/equivalent	0.073105	0.005923
completed HSC/equivalent	0.054502	0.005034
completed graduate/post graduate/equivalent	0.066407	0.005377
Per capita annual income	32893.45	1830.362
Per capita annual expenditure	25814.86	564.1242
Number of sources of income	2.644788	0.029669
Proportion on households with major sources of income from:		
Wages	0.368426	0.011126
Agriculture	0.228762	0.009929
Service	0.103849	0.006733
Professional employment	0.08008	0.006139
Petty business	0.118739	0.007314
Medium business	0.056248	0.005083
Big business	0.013062	0.002453
Small/medium industry	0.007304	0.001991
Large industry	0.001184	0.000837
Construction	0.003159	0.001238
Remittances	0.007843	0.002024
Other sources	0.011343	0.00244
Proportion of household whose income from major sources fell over the previous year	0.280576	0.010419
Proportion of households who are chronically deficit	0.052524	0.005164
Proportion of households who are occasionally deficit	0.266425	0.010213
Proportion of households who are stable	0.380127	0.011156
Proportion of households who have surplus	0.300924	0.010543
Value of per capita asset	371053.4	24157.06
Proportion of assets owned in:		
Land (agriculture, residential, commercial)	0.911245	0.006229
Property (house/apartment)	0.907374	0.00628
Inventory	0.469761	0.011499
Durables	0.947904	0.005228
Productive assets	0.493416	0.011509
Ornaments/jewelry	0.633997	0.011096
Cash	0.339465	0.010903
Financial assets	0.189443	0.008849
Others	0.035092	0.00427
Number of shocks	0.884869	0.024496
Proportion of households receiving assistance from/as:		
Safety net programs	0.288493	0.010567
Food for works	0.130658	0.007941
Cash transfers	0.092274	0.006714
Stipend/training	0.12408	0.00773
Microcredit members	0.492097	0.011504
Proportion of households who have a loan	0.723742	0.010185
Proportion of households who can get a loan	0.864018	0.007921

**Table 3: Number of shocks experienced by sampled households (weighted)**

<b>Number of Shocks</b>	<b>Percentage of Households</b>
0	45.93
1	30.6
2	16.38
3	4.53
4	1.64
5	0.56
6	0.33
7	0.031
<b><i>Total</i></b>	<b><i>100</i></b>

**Table 4: Distribution of Shock Types by Households**

<b>Types of Shocks experienced by Households</b>	<b>Percentage of Households</b>
<b><i>Economic</i></b>	<b><i>14.21</i></b>
Employment	4.34
Remittances	0.97
Self-employment	4.48
Farming	7.65
<b><i>Health</i></b>	<b><i>24.19</i></b>
Death/ailment earning member	6.44
Severe disease	18.32
<b><i>Climatic/Environmental</i></b>	<b><i>15.02</i></b>
<b><i>Dowry/asset shock/theft</i></b>	<b><i>7.45</i></b>
Dowry	3.55
Asset shock/theft	3.97

**Table 5: Incidence and Type of Shocks by Poverty Status, Per Capita Expenditure Quintiles and Location**

	Incidence of shock	Distribution of shocks			
		Economic	Health	Environmental	Asset
Poor	50.13	13.96	20.01	18.33	4.22
Non-poor	55.25	14.39	27.22	12.63	9.80
Poorest quintile	48.00	13.01	15.43	22.2	3.49
Second quintile	52.25	14.95	24.81	14.26	4.98
Third quintile	51.75	13.64	25.66	13.62	5.8
Fourth quintile	56.50	15.3	27.12	11.34	10.75
Richest quintile	57.50	14.25	29.03	12.93	13.18
Urban	47.49	12.25	22.84	9.51	7.78
Rural	56.45	14.92	24.68	17.02	7.34
Rajshahi	43.45	16.58	13.24	10.67	6.85
Dhaka	59.09	14.33	23.29	16.97	10.38
Khulna	52.41	17.21	21.51	10.76	3.15
Barisal	78.23	12.89	25.88	55.47	9.59
Chittagong	46.14	7.99	32.08	3.61	3.51
Sylhet	73.77	18.81	47.55	23.71	14.17
All	54.07	14.21	24.19	15.02	7.45

**Table 6: Coping Mechanisms by Type of Shock, Poverty Status and Location**

	Coping mechanisms										
	Reduce Essential Consump tion	Reduce Non- Essential Consum ption	Help from Friends	Help from Govt./ NGOs	Savings	Low Interest Loans	High Interest Loans	Increase Labor Supply	Deplete Assets/ Sell Products for Less	Other	Could Not Cope
All households with shocks	7.59	9.37	10.21	1.16	34.22	24.87	7.93	7.60	18.62	12.38	36.51
<b><u>Type of shock</u></b>											
Economic	13.8	15	6.1	0.8	26.3	21.5	9.1	9.6	17.8	12.5	41.4
Health	9.1	9.5	17.7	0.8	44.3	30.62	12.5	6.8	20	15.1	21.8
Climatic	6	9.3	5.4	1.2	38.75	22.6	8.2	11.2	14.6	12.1	59.1
Asset	6.2	107	10.1	2.5	37.5	34.6	11.6	5	31.9	18.1	44.8
All shocks	5.39	6.77	6.54	0.71	25.25	17.52	6.28	5.14	14.50	8.77	26.80
<b><u>Poverty Status</u></b>											
Poor	9.21	8.16	11.23	1.56	25.66	23.93	10.26	7.96	11.44	7.31	39.70
Non-poor	6.52	10.17	9.54	0.91	39.87	25.26	6.41	7.37	23.36	15.73	34.41
Poorest quintile	8.85	7.29	13.02	2.08	25.52	23.96	8.85	9.90	10.94	2.60	41.15
Second quintile	9.57	8.61	9.09	0.96	25.84	23.92	11	7.18	11	11.96	38.28
Third quintile	8.70	7.25	8.70	0.97	28.50	31.40	7.73	10.14	18.84	13.04	36.71
Fourth quintile	7.08	12.83	10.18	1.33	42.04	25.22	7.96	7.96	19.91	14.16	32.74
Richest quintile	4.78	11.30	10	0.87	48.70	20	3.91	3.91	28.70	20.43	30.87
<b><u>Location</u></b>											
Urban	8.58	10.59	9.5	1.70	37.31	25.26	6.33	8.64	15.04	15.52	29.28
Rural	7.29	9	10.43	1	33.29	24.57	8.43	7.29	19.71	11.43	38.71
<b><u>District</u></b>											
Rajshahi	2.15	3.51	7.11	0.54	30.63	12.24	1.62	1.71	16.26	5.75	50.55
Dhaka	8.35	12.87	8.78	1.50	38.08	27.61	6.40	8.70	20.69	14.67	32.07
Khulna	4.65	1.40	3.25	0.92	35.10	30.19	2.28	7.98	10.94	8.79	45.58
Barisal	5.69	0.59	6.82	1.23	38.87	37.61	11.08	10.84	12.61	6.61	58.74
Chittagong	7.51	4.52	22.09	2.15	22.47	24.46	11.41	9.39	16.06	11.53	12.01
Sylhet	22.04	37.21	12.43	0	44.08	22.58	23.20	9.56	36.67	30.43	31.06
All households with shocks	7.59	9.37	10.21	1.16	34.22	24.87	7.93	7.60	18.62	12.38	36.51

**Table 7: The determinants of experiencing a shock and ability to cope with a shock**

	Probability of Experiencing a Shock	Probability could not cope
Age of household head	0.002* (0.001)	-0.001 (0.001)
<i>Household head illiterate, omitted</i>		
1, if household head can sign	0.031 (0.035)	0.031 (0.043)
1, if hh completed primary level	0.027 (0.035)	-0.023 (0.044)
1, if hh head completed secondary level	0.024 (-0.040)	-0.034 (0.051)
1, if hh head completed SSC/equivalent	0.101** (-0.051)	-0.202*** (0.062)
1, if hh head completed HSC/equivalent	0.040 (-0.059)	-0.107 (0.075)
1, if hh head completed graduate/post graduate/equivalent	-0.039 (-0.057)	-0.123 (0.071)
1, if household is in urban area	-0.086 (-0.024)	0.042 (0.030)
1, if female-headed household	0.048 (-0.070)	-0.118 (0.087)
<i>Major source of household income: labor, omitted</i>		
1, if agriculture dependent	0.147 (-0.035)	-0.090** (0.045)
1, if service	0.005 (-0.044)	-0.013 (0.051)
1, if profession	-0.026 (-0.049)	-0.018 (0.056)
1, if petty business	0.022 (-0.037)	-0.029 (0.046)
1, if medium business	-0.028 (-0.055)	-0.025 (0.067)
1, if big business	0.146 (-0.097)	0.121 (0.099)
1, if small and medium industry	-0.052 (-0.126)	0.010 (0.167)
1, if big industry	-0.459 (-0.128)	(dropped)
1, construction business	-0.186 (-0.188)	-0.052 (0.468)
1, if foreign remittance	0.087 (-0.115)	-0.013 (.190)
1, if other source of income	0.147 (-0.094)	0.060 (0.086)
Household size	0.021 (-0.005)	-0.008 (.007)
1, if household can get a loan	-0.037 (-0.034)	-0.031 (.042)
1, if household is poor	-0.043 (-0.026)	-0.058* (0.034)
Value of per capita asset	0.000 (0.000)	0.000 (0.000)
1, if hh is a member if microcredit organization	-	0.057* (0.029)
1, if hh receives assistance from public safety nets	-	-0.031 (.0345)

1, if hh faced economic shock	-	-0.051
		(.039)
1, if hh faced a health shock	-	0.111***
		(0.036)
1, if hh faced a climatic shock	-	-0.244
		(0.043)
1, if hh faced an asset shock	-	-0.116**
		(0.045)
<i>Division, Sylhet omitted</i>		
Rajshahi	-0.295	-0.148**
	(-0.047)	(0.058)
Dhaka	-.103**	-0.018
	(-0.045)	(0.052)
Khulna	-0.188	-0.158**
	(-0.053)	(.066)
Barisal	0.055	-0.179**
	(-0.057)	(0.072)
Chittagong	-0.227	0.070
	(-0.047)	(0.053)
Constant	0.543	0.916
	(-0.074)	(0.100)
No. of observations	2000	2000
R <sup>2</sup>	0.098	0.205

Robust standard errors, adjusted for clustering, are reported in parentheses. \*\*\*denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level using two-tailed tests