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## Assets and shocks: a gendered analysis of Ecuador, Ghana and Karnataka, India

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### ABSTRACT

Drawing upon household surveys in Ecuador, Ghana and Karnataka, India, we analyse the relationship between assets and shocks, distinguishing between asset loss as the shock, and the use of assets as a coping strategy. A greater proportion of households experienced a direct loss of assets due to shocks than as a coping response. In Karnataka, but not in Ghana or Ecuador, women's assets are more likely to be sold than men's. Asset ownership and the decision to sell or pawn assets are fairly strongly related but do not completely overlap. Husbands and wives often differ in both the perception of shocks and the response to them.

### RÉSUMÉ

Cet article analyse la relation entre les actifs et les chocs à partir d'enquêtes auprès des ménages en Équateur, au Ghana et au Karnataka en Inde. Nous y distinguons les pertes d'actifs causées par les chocs de celles causées par l'utilisation des actifs comme stratégie d'adaptation aux chocs. Une plus grande proportion de ménages a subi une perte directe d'actifs en raison de chocs plutôt qu'en raison d'une réaction d'adaptation. Au Karnataka, les actifs des femmes sont plus susceptibles d'être vendus que ceux des hommes, ce qui n'est pas le cas au Ghana ou en Équateur. La propriété des actifs et la décision de les vendre ou de les mettre en gage sont fortement liées, mais ne se chevauchent pas complètement. Maris et épouses diffèrent souvent en ce qui concerne la perception des chocs et les réponses à y apporter.

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## Introduction

Abundant research in developing countries has demonstrated that poor households are highly vulnerable to negative shocks of various kinds. The shocks themselves are often devastating: crop or livestock losses, illness or death in the family, crime and natural disasters. In addition, many negative shocks involve a loss of productive assets, either directly or indirectly. Direct effects, in this context, arise from the destruction or loss of assets, as with land or dwellings damaged by a flood or other disaster. Indirect effects arise when

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households sell assets in response to shocks. In either case, a loss of productive assets can have long term implications for poor individuals and households, reducing their ability to transition out of poverty. Poverty analyses find that income-poor households that own productive assets are more likely to transition out of poverty than households that are both income- and asset-poor (Adato, Carter, and May 2006; Carter and Barrett 2006). Thus, losing assets may perpetuate poverty.

Previous literature has reviewed the ways in which households sell assets as a coping strategy in the event of a shock (Heltberg and Lund 2009; Quisumbing, Kumar, and Behrman 2011; Yilma et al. 2014). Less emphasis has been placed on the fact that shocks may directly deplete household stocks of physical and financial assets. For instance, natural disasters may result in the direct loss of livestock, crops and equipment as well as people's homes and material possessions. Crime may result in the loss of livestock or of consumer durables ranging from cell phones to vehicles, as well as the direct loss of cash. Divorce or separation may lead to the loss of the main residence or means of livelihood. Yet, the literature on shocks does not often distinguish between the direct and indirect effects of shocks on household asset holdings. This distinction is important since policies to protect assets from direct loss, such as to reduce crime, may differ from policies such as increased access to insurance and credit, which are designed to assist households recover from a shock without selling their means of livelihood. A key contribution of this article is to distinguish between direct asset losses as a result of shocks and indirect asset losses through their use as a coping response.

To understand the relationship between shocks and assets and the extent to which assets provide economic security and a safety net, it is also important to know the gendered ownership of assets within the household, and whose assets are affected by shocks – directly or indirectly. The intra-household resource allocation literature establishes that assets in the hands of women strengthens individual and household well-being and improves intergenerational outcomes (Doss 2013; Swaminathan, Lahoti, and Suchitra 2011; Oduro, Deere, and Catanzarite 2015). Thus, how the interplay of shocks and assets is mediated by gender also has important policy implications. This article contributes to the literature on gender and assets through a rich descriptive analysis using household survey data from three countries and an intra-household analysis of shocks and ex-post coping strategies.

Specifically, this analysis draws on cross-sectional, nationally/state representative survey data that we collected in Ecuador, Ghana and Karnataka, India, to explore the relationships between shocks, asset loss and the use of assets as a coping response using a gender lens. The three countries provide an interesting contrast for the analysis. They represent differing levels of development and urbanisation, factors that affect the kinds of shocks experienced, the types of coping strategies that may be utilised and the types of assets that may be lost. Further, the three countries differ in their marital and inheritance regimes as well as social norms regarding women's property ownership, factors associated with different patterns of asset ownership among men and women.

A key finding is that, across the three countries, a greater proportion of households lose physical assets directly due to shocks than indirectly. Relatively few households sell or pawn assets to cope with a shock, although many draw down savings. The types of shocks that result in asset loss differ: in Ecuador and Ghana, asset losses predominately result from crime and accidents; in Karnataka, such losses are most frequently due to

weather events and natural disasters. Coping strategies differ as well: households in Ecuador and Ghana primarily use savings while those in Karnataka borrow. Few rely on formal social protection mechanisms, although family, friends and the community all provide some assistance. When assets are used as coping mechanisms, the patterns of whose assets are sold or pawned and who makes the decisions to sell differ by country. In Ecuador, both men's and women's assets (across different categories) are at risk of disposal; in Ghana, it follows the gendered pattern of asset ownership; only in Karnataka are women's assets more at risk of being sold or pawned. In all three countries, men and women are both involved in the decision to sell or pawn assets as a coping mechanism.

Our findings also show that husbands and wives often report different experiences of and responses to shocks. In only about one-third of households do spouses report having experienced the same number of shocks (defined as those that had economic consequences for their households). Moreover, even when spouses report the same shock, in about one-third of the cases they report using different coping strategies. These results imply that it matters who you interview in a survey shock module, and that surveys which interview only one person, usually the household head, may not capture the full range of shocks and coping strategies and potentially miss the welfare impact of shocks on different household members.

### **Shocks, assets and gender**

Although a number of studies focus on the shocks experienced by households in developing countries and the coping strategies that they use, relatively few distinguish between the direct and indirect impacts on assets and even fewer use a gender lens. Direct asset losses are often a result of shocks. In their analysis of household surveys from 16 developing countries,<sup>1</sup> Heltberg, Oviedo, and Talukdar (2015) found that asset shocks – those that directly result in the loss of land, the residence, livestock, machinery and durable goods, and crops – are among the most common types of shocks reported. They also considered how assets are used as a coping strategy.

It is expected that assets will play a key role since one reason households accumulate assets is their function as a store of wealth. At the same time, the sale of productive assets can entrench households in a downward spiral by diluting a key source of income (Hoddinott 2006). Distress sales of land or livestock are typically indicators of a steep drop into poverty. Other assets – like jewellery – may also be sold or pawned in response to shocks, with relatively smaller economic impacts at the household level. To the extent that women's assets are smaller and more liquid, they may be more likely to be sold thus changing the patterns of asset ownership within the household.

Consistent with the idea that the sales of productive assets would be done as a last resort, the empirical evidence finds relatively little incidence of asset sales as a means to cope with shocks. In their review article, Heltberg, Oviedo and Talukdar (2015, Table 6) found the share of households selling productive assets ranges from 1 to 30 per cent across the countries analysed. In no country was the incidence of the sale of other assets (non-productive assets) higher than 14 per cent, nor was the sale of any assets the most common response. A long term study of pastoralist households in East Africa finds that while livestock holdings decrease significantly during a drought period, there was no evidence of households liquidating other assets to compensate for

livestock losses (McPeak, Little, and Doss 2012). Several analyses of livestock sales found relatively low levels of sales, even during a drought (Fafchamps, Udry, and Czukas 1998; Hoddinott 2006). Yet, although the incidence is low, such sales may have important consequences for the households that sell assets and it may be important to consider whose assets are sold.

A problem in this literature is that there are no consistent categorisations; the definition of assets may include not only land and livestock, but also crops in the field or food stocks. This makes comparisons across studies challenging. For example, while a recent study in Ethiopia finds that selling assets was the third most common response to a shock, food stocks were included as assets (Yilma et al. 2014). The sale of food stocks will have a very different impact on long term household livelihoods than the sale of land or livestock.

In addition, while many studies found that dissaving is an important coping strategy (Heltberg, Oviedo, and Talukdar 2015), they differ in terms of whether they consider drawing down savings as utilising an asset. In addition, at least one study includes borrowing as an “asset approach” to coping (Heltberg and Lund 2009). Drawing down savings and borrowing will have widely different impacts on short and long term poverty trajectories.

While the overall evidence is mixed, it suggests that selling physical assets is not usually a household’s principal response to shocks. Instead, households employ other means – like drawing down savings, borrowing and reducing consumption – in order to protect productive assets so that they can be used to generate income and recover from the shock.

The studies discussed above do not explicitly consider gender; in fact, the literature in this area is rather sparse. Moreover, due to data limitations, gender analysis is often reduced to comparing households based on the sex of the household head.<sup>2</sup> But it is important to consider whether men and women experience shocks in the same way and whose assets are lost or sold as a result of shocks. An extensive literature documents the importance of a woman’s asset ownership for her own welfare as well as that of her family (Quisumbing and Maluccio 2003).

Three studies provide some insights into the gender implications of shocks and assets. Frankenberg, Smith and Thomas (2003) analysed the impacts of the Asian financial crises on the assets of Indonesian households. The study concluded that only two forms of wealth – land and jewellery – were associated with households smoothing consumption during the crisis. While they do not have information on the owners of the assets sold, in Indonesia most land is owned by men while most jewellery is owned by women and, thus, they noted gendered impacts on the decisions to sell.

The other two studies considered the net impact of shocks on the asset holdings of men and women, without distinguishing between direct and indirect asset losses. Quisumbing, Kumar and Behrman (2011) found that shocks in Bangladesh and Uganda affect the asset holdings of men and women differently. In Bangladesh, weather-related shocks had a larger impact on men’s assets, while illnesses had a larger impact on women’s assets. In contrast, in Uganda, droughts had a larger impact on women’s assets than on men’s. Rakib and Matz (2016), drawing on panel data for Bangladesh, found that weather-related shocks impact the assets of husbands more severely than wives, principally because men own most of the land and other agricultural related assets. The other negative shocks they considered were death and illness of family members and incurring dowry or wedding expenses. Similar to Quisumbing, Kumar and Behrman’s (2011) results for Bangladesh, they found that mainly wives’ assets (principally jewellery) were drawn down to

cope with death and illness. In contrast, dowry and wedding expenses were met by selling husbands' assets (primarily livestock). Jointly owned assets were rarely sold; the authors argued that these are protected, either because of their importance to the household's welfare or because the couple might not agree on their sale.

Thus, there are three key gaps in the literature: direct and indirect asset losses are not often distinguished; there are no consistent categorisations of assets, which makes comparisons across studies challenging; and most discussions of shocks and assets do not use a gender lens. This article addresses these three gaps.

## Methodology and data

The Gender Asset Gap project fielded household surveys in 2010 in Ecuador, Ghana and in the Indian state of Karnataka to collect individual asset ownership data. The survey followed six months of qualitative field work in each country. In Ecuador, the sample of 2,892 households is nationally representative; in Ghana, a total of 2,170 households were surveyed and they are representative of the 10 administrative regions of the country. In Karnataka, a state representative sample of 4,110 households was surveyed across the nine districts covering all agro-climatic zones.

The surveys employed two instruments: a household and an individual questionnaire. The first collected data on household demographics and livelihoods, and included an inventory of physical assets owned by members of the household, identifying the owner of each asset. In Ghana and Karnataka, the respondent was the adult who knew the most about the household's assets. Based on insights gained from the qualitative field work, in Ecuador the principal couple of the household was interviewed together whenever possible.

The individual questionnaire was administered separately to the principal man and woman. It asked about financial assets and debt, as well as additional details on their assets. The individual questionnaire was completed by a total of 4,668 persons in Ecuador, 3,288 in Ghana and 7,185 in Karnataka.

The recall period for the shocks module was five years, similar to many previous studies on shocks.<sup>3</sup> Although the information gathered was the same, the placement of the shocks module differed across the three surveys, based on insights gained during the qualitative research and extensive field-testing in each country. While this poses some challenges for a comparative analysis, it also provides an opportunity to explore relevant issues on shocks and assets in each country. In Ecuador, shock-related questions were asked in the household module and the respondents included the principal man, woman or the couple together. In Karnataka and Ghana, each respondent provided separate information on shocks. In Karnataka, respondents were asked about their personal experience of shocks. Ghana's question, while asked of two respondents separately, asked whether their household had experienced a given set of shocks (similar to Ecuador's) and whether the household lost any assets.

The lists of possible shocks and coping strategies were developed for each country in the qualitative research. Generally, shocks could be easily aggregated into consistent categories across the countries (see Supplemental Online Appendix, Table A1).<sup>4</sup> The cultural understanding of shocks differs across the three countries. In Karnataka, households included social functions, especially weddings, as economic shocks, as in

other studies in South Asia (Rakib and Matz 2016), and we retain this as a separate category in our analysis.

Since the primary aim of our surveys was to estimate individual and household wealth, considerable attention was given to enumerator training and the issues of how best to capture asset ownership and asset values and minimise measurement error.<sup>5</sup> Our analysis of socio-economic differences below is based on household wealth quintiles. We expect household wealth to constitute a more precise measure of socio-economic differentiation than an index of major assets owned or of amenities – as is commonly utilised in the literature – since the valuation of assets takes into account potential differences in asset quality. A disadvantage of utilising household wealth quintile for the study of shocks is that the distribution is based on wealth holdings in the survey year (2010) and, hence, captures the household potentially having experienced a shock related asset loss during the previous five years (2005–2010). In our analysis below, we discuss why this does not appear to be a significant problem. All results presented in the article are weighted using survey weights.

### **Gendered patterns of asset ownership**

Because shocks result in asset loss, it is first important to understand the patterns of asset ownership within households by gender. Whose assets are lost or sold may have long term impacts on the dynamics within households.

Across the three countries, patterns of asset ownership vary considerably in a number of dimensions.<sup>6</sup> The form of ownership – whether assets are owned individually by men, individually by women, or by couples – varies, in part, due to the rules regarding marital property and inheritance practices (Deere et al. 2013). In Ecuador, the default marital regime is partial community property, which means all property acquired during marriage, other than inheritances, is considered the joint property of both spouses. This applies both to couples that are formally married and those in consensual unions. Thus, in Ecuador the most common form of ownership for major assets is joint ownership by a couple. Both Ghana and Karnataka are characterised by separation of property marital regimes, which stipulate that all property is owned individually, including property purchased during marriage. Relatively little property is jointly owned by spouses in these two countries. In Ghana and Karnataka, far fewer women own assets compared to men. Additional reasons for this include cultural norms limiting women's inheritance of property even when inheritance legislation supports gender equality (in India) and wide gender gaps in labour force participation and earnings. Overall women own 52 per cent of the wealth in Ecuador, 30 per cent in Ghana and 19 per cent in Karnataka (Doss et al. 2015a).<sup>7</sup>

The incidence of asset ownership varies across countries. Except for Ecuador where assets tend to be jointly owned, the incidence of asset ownership among men is usually higher than that among women. Exceptions to this pattern are businesses in Ghana and jewellery in Ghana and Karnataka that have a higher incidence of ownership among women.

However, it is possible that there is a disconnect between asset ownership and the ability to dispose of it. In the analysis below, we consider the extent to which the asset owner is the person who decides whether to sell or pawn the asset in response to a shock. Given the gendered patterns of asset ownership, it is useful to apply a gender lens when considering the relationships of shocks and assets. While shocks may be



exogenous to the household, asset losses, whether direct or indirect, have gendered implications and are important for policy considerations.

### Shocks experienced

A shock is attributed to the household if it was reported by either respondent as having been experienced at least once by a household member in the five years preceding the survey. Overall, households in Ecuador were much more likely to report a shock than those in either Ghana or Karnataka (Table 1). Consistent with much of the literature, in each country, the shock experienced most frequently was illness, followed by death of a household or family member. In Ecuador and Ghana, the third most frequent shock was crime and accidents, and in Karnataka, natural disasters.

Wealth may condition the patterns of shocks experienced. Our use of wealth quintiles allows us to examine whether asset-poor households are more likely to have experienced shocks; if this were to be the case, having experienced shocks could be an explanation for their relative asset poverty. However, Table 2 shows that asset-poorest households are *not* the most likely to have experienced a shock in any of the three countries. In Ecuador, differences by quintile are not statistically significant. In Ghana, the lowest incidence of shocks (36%) is reported by households in quintile 1, and the highest (48%) by those in quintiles 3 and 5. In Karnataka, the highest incidence (58%) is reported by households in quintile 4. These trends suggest that the asset-poverty of the very poorest households is likely explained by social and structural factors other than shocks.

In a comparative framework, it is noteworthy that more households in Ecuador reported experiencing a shock than in Ghana and Karnataka. Table 2 shows that it is not simply that those in Ecuador report more minor shocks. Respondents in Ecuador are also more likely than those in Ghana and Karnataka to report a severe shock. The patterns across quintiles are similar, with the exception that the differences across quintiles in Ecuador are now significant, and it is the mid-quintile that is most likely to have experienced a severe shock.

### Intra-household analysis of shocks

A key advantage of interviewing men and women separately within a household is the possibility of acquiring different viewpoints on a given issue. Here we examine these

**Table 1.** Types of shocks and percentage of surveyed households experiencing them, in Ecuador, Ghana and Karnataka.

Type of shock	Ecuador	Ghana	Karnataka
Illness	44.8	19.4	25.5
Death	38.2	11.9	11.2
Crime and accidents	20.4	6.0	1.1
Other asset loss	N/A	5.0	2.9
Income loss	16.5	4.4	2.7
Change in household composition structure	8.4	3.3	1.1
Social function	N/A	N/A	5.4
Natural disasters	5.7	1.9	9.5
Other	0.2	0.6	1.2
None	23.6	47.5	49.8
<i>N</i> = Households	2,892	2,084	4,048

Note: Results are calculated using survey weights.



**Table 2.** Incidence of shocks by wealth quintile reported by surveyed households.

Wealth quintile	Households reporting a shock (%)			Households reporting a severe shock <sup>a</sup> (%)		
	Ecuador	Ghana	Karnataka	Ecuador	Ghana	Karnataka
Q 1	75.4	36.0	48.0	56.3	28.7	42.8
Q 2	77.0	42.6	46.4	53.1	32.0	39.6
Q 3	80.5	48.0	50.1	62.4	36.8	41.4
Q 4	76.7	46.6	57.7	58.7	33.9	49.7
Q 5	72.2	48.2	49.1	49.7	35.7	41.8
All quintiles	76.3	44.2	50.3	56.1	33.4	43.1
<i>N</i> = Households	2,892	2,169	4,048	2,892	2,169	4,048
<i>p</i>	.134	.026**	.002***	.03***	.215	.009***

Notes: *p*-values based on Chi-squared test. \*\*\**p* < .01; \*\**p* < .05; \**p* < .10. Results are calculated using survey weights.

<sup>a</sup>Ecuador survey distinguishes between severe and very severe shocks; Ghana survey distinguishes severe shocks vs. moderate, mild or shocks of no economic consequence; Karnataka survey distinguishes very severe shocks from shocks, but does not have a response category of severe shocks.

intra-household dynamics in how individuals experience shocks in Ghana and Karnataka. The sub-sample considered is limited to couple households in which both the husband and wife (including those in a consensual union in Ghana) responded to the shocks module, either about the shocks they themselves experienced (Karnataka) or which their households experienced (Ghana).

First, in only about a third of households do husbands and wives report the same number of shocks (33% in Ghana and 31% in Karnataka); in the remainder, husbands tend to report more shocks than wives (Doss et al. 2015b, Table 8). Table 3 examines all shocks reported by respondents and categorises them by whether they were reported by the husband only, the wife only, or by both. In both sites, the majority of the shocks are reported by only one spouse. In Karnataka, the proportion of shocks reported by both spouses (where each has experienced the same shock) is only around 10 per cent, while in Ghana (where the reference is a household shock) it is about 27 per cent. The proportion of shocks reported by the husband alone is higher than that reported by the wife alone in both countries. This pattern is observed across all the shock categories with the exception of changes in household structure and social functions in Karnataka.

One explanation for the low incidence of agreement between couples in Karnataka could be that, although both spouses might refer to the same larger event, they experience the impacts differently. To illustrate, in some households, both spouses referred to the same flood but the husband reported “crop failure due to flood” and the wife reported “damage to house due to flood”. When spouses are referring to the same larger event, the agreement between them on the shock reported increases only marginally to 13 per cent.

In sum, we find that husbands and wives experience shocks differently. There is some degree of agreement within couples on the number of shocks they have experienced but much less agreement on identifying specific shocks and their impacts. This suggests that information on shocks collected only from one individual in a household, typically the male head of the household, would misrepresent the shocks as experienced by individuals and mask the nuances of the impacts of shocks.

Finally, since our estimates of whether a household experienced a shock (Table 1) in Ghana and Karnataka are inclusive, with a shock recorded for the household even if it was only reported (or experienced) by either the husband or wife, it stands to reason

**Table 3.** Distribution of shocks by who reported them within the household in Ghana and Karnataka.

Type of shock	Ghana				Karnataka			
	Husband only	Wife only	Both	Total no. shocks	Husband only	Wife only	Both	Total no. shocks
Illness	41.8	24.5	33.6	282	48.9	42.5	8.6	1,031
Death	40.0	33.8	26.3	134	46.0	38.3	15.7	301
Crime and accidents	45.6	31.0	23.4	109	46.2	41.5	12.3	35
Other loss of assets	52.1	30.2	17.6	88	51.4	37.7	10.9	102
Loss of income	46.3	35.8	17.9	45	70.2	28.0	1.8	89
Change in household structure	27.8	64.0	8.2	11	40.6	59.4	0.0	20
Social functions	0.0	0.0	0.0	0	35.1	54.3	10.7	188
Natural disasters	45.2	20.7	34.1	37	57.0	33.4	9.7	380
Other	45.9	34.2	19.9	20	62.8	34.9	2.3	41
All types	43.5	29.2	27.2	726	50.0	40.37	9.6	2,187
	$p = .094^*$				$p = .000^{***}$			

Notes:  $p$ -values based on Chi-squared test.  $^{***}p < .01$ ;  $^{**}p < .05$ ;  $^*p < .10$ . Results are calculated using survey weights.

that our estimates of household incidence of shocks in each country are larger than if only one person per household had been interviewed. Nonetheless, the incidence of household shocks is much higher in Ecuador – where the couple reported on shocks together – than in the other two sites, suggesting that perhaps recall improved by interviewing both members of the couple together.

### Direct loss of assets

Overall, over a quarter of households who experience shocks in each of the countries report a direct loss of assets. The incidence is higher for the upper wealth quintiles than for lower ones. These differences are statistically significant in the case of Ghana and Karnataka, with quintiles 4 in Ghana and 5 in Karnataka reporting the highest incidence of asset loss. In Ecuador, the wealthiest quintile also shows the highest incidence, although the differences by quintiles are not significant. This pattern most likely reflects the fact that wealthier households, by definition, own more assets to lose than poorer households.

The types of shocks that result in asset loss vary widely across countries (Table 4). In Ecuador and Ghana, the most common are crime and accidents. In contrast, in Karnataka, asset loss is most frequently the result of natural disasters. The high incidence of assets lost due to crime in Ecuador is consistent with secondary data that crimes against persons as well as property were rising in the late 2000s in the major cities (Torres Angarita 2011).

**Table 4.** Distribution of types of reported shocks resulting in asset loss (in %).

	Ecuador	Ghana	Karnataka
Crime and accidents	67.0	38.4	6.5
Loss of property due to other reasons	N/A	35.5	16.8
Income shocks	12.6	9.6	9.8
Abandonment/divorce/separation	7.9	2.7	0.0
Natural disasters	11.9	10.3	67.0
Other	0.6	3.6	0.0
All types	100%	100%	100%
$N =$ Shocks resulting in asset loss	673	488	738

Note: Results are calculated using survey weights.

**Table 5.** Distribution of assets lost by type of asset.

	Ecuador		Ghana		Karnataka <sup>a</sup>	
	Frequency	%	Frequency	%	Frequency	%
Immovable property	23	2.9	27	5.2	183	21.3
Dwelling	13	1.7	24	4.6		
Agricultural land	6	0.7	3	0.6		
Other land	4	0.5	0	0		
Livestock	41	5.2	189	42.5	78	11.7
Household business	33	4.2	7	1.3	73	12.3
Consumer durables	229	29.2	40	10.4	N/A	
Vehicle	44	5.6	2	0.4	N/A	
Money/financial asset	254	32.5	84	19.4	N/A	
Harvest	58	7.4	79	17.9	404	54.8
Other	99	12.7	6	1.6	N/A	
Does not know	3	0.4	9	1.3	N/A	
<i>N</i> = Assets lost	783	100%	443	100%	738	100%

Notes: <sup>a</sup>In the Karnataka survey, the forms of immovable property were not disaggregated. Results are calculated using survey weights.

Previous studies on shocks in three districts in Ghana also found that direct loss of assets was due largely to crime and accidents (ISSER 2007a, 2007b, 2007c).

The types of assets lost will differentially impact households. The consequence of losing productive assets might be worse than that of losing consumer durables.<sup>8</sup> Losing a dwelling or agricultural land will have severe consequences for a household's long term well-being. Table 5 shows that the loss of immovable property is relatively infrequent in Ecuador (3%) and Ghana (5%), but higher in Karnataka (21%). This is consistent with the finding that asset loss is most frequently associated with natural disasters in Karnataka.

In Ecuador, the most common assets lost are money or other financial assets and consumer durables; in Ghana, it is livestock and cash. Households in Karnataka reported a much smaller set of assets lost; harvests were the most common, followed by immovable property. The loss of harvest or standing crops in Karnataka is primarily a result of floods or droughts, such as the devastating floods of 2009.

In the Ecuador survey, a follow-up question asked whose assets were lost in the shock. In most cases the assets lost were jointly owned by the couple, corresponding to the prevalence of joint ownership of assets. A greater share of the businesses lost (in most cases due to bankruptcy) belonged to a woman individually than to a man or a couple (Doss et al. 2015b, Table 13). Most of the businesses lost belonged to women, since they are the majority of the business owners; the share of businesses lost, around 2 per cent, however, was similar for women, men and couples.

## Coping strategies

Households use a range of ex-post coping strategies, including those which involve assets. Yet, the same few strategies are utilised by a large proportion of households: receiving assistance from family or friends, borrowing and drawing upon savings (Table 6). Relatively few households use formal social protection mechanisms – including assistance from the government and insurance – in any of the three countries.

A large proportion of households, nonetheless, report having done nothing to cope when a shock occurs. The incidence of inaction is quite high in Ghana (47 per cent),

**Table 6.** Household coping strategies conditional on having experienced a shock (% of households reporting each strategy).

	Ecuador (%)	Ghana (%)	Karnataka (%)
Use of assets			
Sell/pawn assets	3.6	10.5	4.1
Savings	49.7	32.6	0.4
Formal social protection			
Assistance from government	3.1	N/A	4.6
Insurance	4.1	1.5	0.0
Informal social protection			
Assistance from NGOs, charity	1	N/A	1.6
Assistance from church	0.5	4.3	0.0
Assistance from family, friends, community	44.8	32.6	24.5
Other coping strategies			
Borrowing and salary advance	13.5	9.7	57.5
Reduce consumption	5	6.4	1.8
Change in employment	10.4	0.8	0.0
Migration, change in household structure	0.3	1.8	3.9
Other	0.8	1.6	3.2
Did nothing	15.1	46.6	23.9

Note: Results are calculated using survey weights.

and relatively lower in Karnataka (24%) and Ecuador (15%). Such a response has been found in other studies (Heltberg and Lund 2009). In Ghana, inaction is most common in the case of crime and accidents, the death of livestock and illness or injury, while in Karnataka it is most frequent in the case of death and illness or injury. In Ecuador, it is most common for households not to report any specific coping strategy in the case of crime as well as income loss – whether due to the loss of a job, bankruptcy or a decrease in remittances (see Supplemental Online Appendix, Table A2).

Physical and financial assets play different roles in coping with shocks across the three countries. The indirect loss of asset through pawning or sale is infrequent. The incidence of households selling or pawning assets is highest in Ghana (11%) compared to Ecuador or Karnataka (4% each). This response is most common for illness or injury in Ghana and Karnataka and for income shocks in Ecuador. In none of the countries are there significant differences by quintiles in the sale of assets as part of a coping strategy. This suggests that households in the poorest quintiles did not become asset poor primarily by selling assets to cope with a shock.

Our focus groups indicated that the pawning or sale of assets was infrequent and used as a last resort, primarily because of the fear that it would be difficult to ever replace the asset. This concern is supported by our survey data. In Ecuador, about 26 per cent of the assets pawned or sold were eventually recovered, while this was the case only for 14 per cent in Ghana and 11 per cent in Karnataka (Doss et al. 2015b).

In terms of financial assets, the data suggest that it is primarily in Ecuador (a relatively high-income country), and to some extent in Ghana, where savings are important in coping with shocks. In both countries, the most common use of savings is in the case of illness or injury and death. In Karnataka, however, borrowing is the most frequent coping mechanism, as has been found for other South Asian countries (Heltberg and Lund 2009). Households borrow when facing expenses due to illness or injury and to recover from natural disasters. Much of the borrowing is from informal sources, such as local moneylenders, traders, employers, relatives and friends. Precisely because of

their informal nature, these sources of credit are relatively convenient, with little or no paperwork involved. Traders and employers also provide loans against future purchases and labour, respectively. The cost of such credit, however, is higher than market interest rates (often usurious), which can keep households locked in debt for years.

### ***Indirect loss of assets: disaccumulation by gender***

In this section, we consider whose assets are sold or pawned and who participates in the decisions to sell or pawn these assets. The structure of the survey questions was similar in all three countries. For items that were sold or pawned, respondents were asked to identify the owners and then asked which household members made the decision to sell or pawn. It is worth noting that being the sole decision maker does not preclude the possibility of prior consultation with other individuals; this information though was not captured in the survey.

In Ecuador, an almost equal proportion of the assets pawned or sold were jointly owned (38%) or owned individually by women (36%), with only 26 per cent owned individually by men (see Supplemental Online Appendix, Table A3). The main assets sold are consumer durables and livestock. While the number of assets sold is small, the data suggest that the patterns differ by gender across assets. For example, the few non-agricultural land parcels and the majority of the consumer durables sold were owned by women alone. Compared to the overall distribution of asset ownership in Ecuador (Deere and Contreras Díaz 2011), female owners are over-represented among those who sold either of these assets. In contrast, the majority of the businesses and vehicles sold were owned only by men. Male owners are also over-represented among those who sold both of these assets.<sup>9</sup> The majority of the few dwellings, agricultural parcels and livestock sold were jointly owned, and represent a higher share than the overall distribution of these jointly owned assets.

In Ecuador, in the great majority of cases, the owners themselves are involved in the decision to sell the asset (see Supplemental Online Appendix, Table A3). In a few instances (as in consumer durables), a man alone decided to sell the assets owned individually by a woman. It was far more common for a couple to jointly make the decision to sell an asset that belonged individually to either the man or woman, such as for agricultural land. In very few cases did one spouse alone decide to sell jointly owned property, notably women selling jointly owned livestock. Thus, in Ecuador there is no evidence of a systematic gendered pattern of disaccumulation in response to shocks: both men and women are over represented in the sale of some individually owned assets, and almost always made or participated in the decision to make the sale of an asset of which they were an owner or co-owner.

In Ghana, the pattern is somewhat different, since assets tend to be individually owned. Almost all the assets sold or pawned are individually owned, with only 5 per cent jointly owned. The most common asset sold was livestock, followed by consumer durables and rights to the harvest. The majority of owners of most sold assets are men, with the exception of businesses and consumer durables; all the owners of the few sold businesses are women. In Ghana, high-value traded items, such as printed fabric (usually six yards in length), are categorised as consumer durables, and feature prominently among the consumer durables sold by women. In most cases where an asset was sold, the owner made the

decision (see Supplemental Online Appendix, Table A3). There are only a few cases reported of men deciding alone to sell the consumer durables, harvest rights or livestock owned by a woman, and a few instances of women selling those items owned by a man. No decisions to sell an asset are reported as being jointly made.

For Karnataka, we only have information on the person who decided to sell the asset, not the owner. Jewellery is the most frequently sold asset, followed by agricultural land and dwelling. Although male individually owned property predominates in Karnataka, particularly with respect to immovable property, the decision to sell these assets is commonly made jointly. Jewellery, the main item which women tend to own individually, is the most frequently sold asset. Among those selling jewellery, in 45 per cent of the cases the decision was made jointly, in 40 per cent only by men, and in only 15 per cent by a woman alone. Thus, women appear to be underrepresented in the decision to sell what is often an important asset for them.

Although selling or pawning of assets as a coping strategy is not dominant across the three countries, examining these from a gender perspective provides interesting and varied insights. In Ecuador, there is a gender symmetry in the loss of assets with both men and women over-represented in certain asset types. Ghana, where sale of assets to cope is the highest, the loss of assets and decisions regarding their use follows the gendered pattern of asset ownership. Interestingly, even when the assets sold are jointly owned, there are no instances of joint decision-making reported. This could be because the joint owners may not each have the same rights over the asset. Some joint owners of the place of residence or land, for example, report that they can sell the asset without consulting anyone whilst others report that they do not have the right to sell (Oduro, Baah-Boateng, and Boakye-Yiadom 2011; Oduro 2015). Only in Karnataka is jewellery more prone to being used to cope with shocks. This could be driven by liquidity considerations or by a rational household choice that prioritises sale of jewellery over productive assets such as land or livestock. However, this may disadvantage women in the long term by eroding the few assets that they own. The comparative analysis suggests that ownership and control over the asset, especially regarding the decision of whether to sell in the face of the shock, are fairly strongly related but do not completely overlap.

### ***Intra-household analysis of coping strategies***

To gain further insight into the gendered dimension of assets and shocks we now examine whether spouses in Ghana and Karnataka utilise similar coping strategies for shocks that both reported. In Ghana, couples reported up to four coping strategies, while in Karnataka, no one listed more than two. In both countries, most listed only one coping strategy. There was, by and large, agreement between spouses regarding how many coping strategies were utilised (84% of spouses reported the same number in Ghana and 88 per cent in Karnataka). When the couples did not report the same number of strategies, the patterns in Ghana are quite symmetric; in Karnataka, it was more common for wives to report two strategies whereas the husbands reported only one.

Although the majority of couples reported the same number of coping strategies, these were not always the same strategies. In more than a third of the cases in both sites, spouses report using different strategies in response to the same shock (Table 7). In Karnataka, wives are less likely to borrow and more likely to obtain assistance

**Table 7.** Agreement within couples on coping strategies for shocks reported by both in Ghana and Karnataka.

Mode of coping strategies by couples	Ghana		Karnataka	
	<i>N</i>	%	<i>N</i>	%
Do not use same coping strategies	60	36.3	88	37.6
Use same strategy (one strategy)	99	54.5	119	59.3
Use same strategies (two strategies)	13	7.6	7	3.1
Use same strategies (three strategies)	2	1.5	0	0.0
Use same strategies (four strategies)	1	0.2	0	0.0
Total	175	100	214	100

Note: Results are calculated using survey weights.

from family or friends than husbands. Women in Ghana are less likely than their partners to draw down savings or sell assets. This is not surprising since women have lower savings balances than men and are less likely than men to be asset owners (Doss et al. 2015). As in Karnataka, wives in Ghana are more likely to receive assistance from family or friends.

These results provide two insights. First, even when husbands and wives report the same shock, they do not always report the same response. This suggests that not only do they experience shocks differently, as we saw above, but also that they may respond differently to them, utilising different coping strategies. Second, information about coping strategies collected in household surveys will differ depending on who is chosen as a respondent. This has important implications for survey design and implementation.

## Discussion and policy recommendations

We have used a comparative framework to examine shocks experienced by households, the coping strategies pursued, the selling or pawning of assets, and whose assets are sold. The most important general finding is how common it is for households to report a shock in the previous five years (76% in Ecuador, 53% in Ghana and 50% in Karnataka). This relatively high incidence reflects both the use of a five-year recall period, and the inclusion of a second respondent.

Asset loss in relation to shocks is usually conceptualised only as an indirect response to a shock, ignoring the direct loss of assets. Our analysis shows that more households experience direct loss of physical assets than indirect losses as a result of shocks. This dual relationship of assets with shocks is important in a policy framework where interventions to reduce asset shocks may be quite different than safety nets and social protection mechanisms designed to help households recover from shocks without losing assets.

Several policy steps can be taken to protect individuals against direct asset losses. A range of insurance products are being developed for the Global South, including health insurance and weather index insurance for farmers. A wider range of insurance packages should be designed to protect directly against asset shocks, such as property insurance against floods, droughts, accidents and crime.

The incidence of direct asset loss through theft, robbery and cheating suggests a need to strengthen the institutions of law and order to protect both physical and financial assets,



particularly in Ecuador and Ghana. The relatively high incidence of livestock deaths in Karnataka and Ghana also points to the need for an improvement in the provision of veterinary services (via programmes that target both men and women who rear the livestock).

Any policy, either to address direct or indirect asset loss, must consider the gendered pattern of asset ownership. The extent to which women lose individually owned assets in a shock – either directly or indirectly – must be considered in the context of how common it is for women to own major assets. In Ghana and Karnataka, women are less likely than men to own immovable property and, on average, women are substantially less wealthy than men. Thus, while they may be a minority of the owners of assets lost or sold, when women lose the few assets that they own, the welfare consequences may be more severe than when men's or jointly held assets are lost. This situation seems most prevalent in Karnataka, where jewellery is the most common asset that women own and the asset most frequently sold, but where women do not always participate in this decision.

The use of different coping strategies by husbands and wives to respond to the same shock may reflect a joint strategy of the couple. However, in contexts where assets tend to be individually rather than jointly owned, selling assets will impact husbands and wives differently. Interventions to support households in the aftermath of a shock need to be cognisant of the intra-household dynamics to ensure that both spouses have opportunities to recover from the shock.

Most shocks burden households with reduced income, increased expenditures, or both. In Ecuador and Ghana, utilising accumulated savings is an important coping mechanism. In Karnataka, however, households typically resort to informal borrowing to handle crises or meet wedding expenses, which could gradually have a debilitating impact on future consumption due to exploitative interest rates. Expanding formal financial access to meet credit and insurance needs of poorer households seems like a logical approach, although there has been relatively low take up of many of these programmes. Thus, any financial policy intervention needs to look beyond merely expanding the supply of bank credit. An innovative financial inclusion policy, the *Pradhan Mantri Jan Dhan Yojana*, initiated in 2014 by the Indian government, has features including zero-balance accounts, accident and life insurance, and over draft facilities with no collateral. (PMJDY 2016).

All three countries have formal social protection mechanisms that provide social insurance, social assistance and support to workers in the labour market. However, the incidence of the use of formal social protection mechanisms – in particular, assistance from government – is very low in all three sites. Thus, there is wide scope for improvements in the formal mechanisms to protect households. In addition, women's property rights and the enforcement of those property rights must be strengthened to facilitate women's accumulation of assets so as to reduce their vulnerability to shocks.

Finally, the study indicates that men and women report different shocks and coping strategies and that the patterns of asset loss and sales are gendered. To fully capture the shocks men and women experience and the coping strategies they use, household surveys would be well advised to interview more than one person per household and to collect detailed data on asset ownership.

## Notes

1. The surveys were undertaken between 2002 and 2011 and include Afghanistan, Bangladesh, China, Iraq, Laos, Malawi, Maldives, Mexico, Nigeria, Peru, Sudan, Tajikistan, Tanzania, Uganda, Uzbekistan and Vietnam. All were nationally representative except for the household surveys in China and Laos, which were representative at the provincial level (Heltberg, Oviedo, and Talukdar 2015).
2. Where a gender analysis is attempted, female headed households are often compared to male headed households, combining households with a couple and those with a sole adult male without a spouse. To be insightful, sole female headed households need to be compared to sole male headed households as opposed to couples.
3. Of the 16 surveys analysed by Heltberg, Oviedo and Talukdar (2015), in five the recall period was five years; in others it was one year. Our focus groups discussions suggested that a one-year recall period would reduce drastically the incidence and range of shocks experienced, while more than five would probably yield diminishing returns due to recall issues.
4. The one set of shocks treated most inconsistently across the three surveys was that involving the loss of livestock. Whereas Karnataka distinguished between livestock lost due to floods or droughts from those lost due to other reasons (disease, theft, strayed away, natural death), Ghana combined both into one separate category (death of livestock) while Ecuador subsumed these in most cases into the result of natural disasters, with a few cases of death due to disease appearing under “other”. Theft of livestock in the case of Ecuador and Ghana are considered under the general category of “crime”.
5. This is one reason why respondents were interviewed together when feasible in Ecuador (Deere and Catanzarite 2016) and separately in the other two countries.
6. This section draws heavily on Doss et al. (2011).
7. Note that when assets were owned jointly, the value was split among the owners for the purposes of calculating women’s share of wealth.
8. The shocks module did not ask whether the consumer durables that were lost were utilised in a business. In both Ecuador and Ghana, it is common for women who are self-employed to depend upon consumer durables for their income generating activities, such as a refrigerator to sell chilled drinks or a stove to prepare food to sell.
9. Unfortunately, we do not have information on the value of the assets sold or pawned, which is what would be required to undertake a more detailed analysis of disaccumulation by gender.

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