



LONG-TERM IMPACT OF CREDIT CONSTRAINTS IN MINDANAO, PHILIPPINES

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Generational impact

WHEN FAMILIES ARE CONSTRAINED from accessing financial services, the impact can last for generations. Our BASIS research project examined the long-term effects of access to financial services on asset accumulation, economic mobility and the evolution of wellbeing. The project provided a rare opportunity to study the impacts of credit constraints on households over two decades.

The study site of Bukidnon, Philippines saw the construction of a sugar mill in the 1970s that led many households to switch from a food crop (corn) to a cash crop (sugarcane). Subsequent changes in access to land, use of labor, and overall incomes allowed for a rich policy-relevant examination of households under different crop production regimes and land tenure distributions.

The project sought to address these questions:

- How have rural financial markets in the Philippines evolved over time?
- What kinds of credit constraints do rural households face, and have these changed over time?
- What is the long-term impact of credit constraints on physical asset accumulation, investment in children's human capital, and economic mobility?

Our study followed up 448 families in 29 villages in rural Mindanao who were first interviewed over 20 years ago by the International Food Policy Research Institute and the Research Institute for Mindanao Culture,

Xavier University. The original survey was fielded in four rounds at four-month intervals from August 1984 to December 1985, so that each round corresponded to a different agricultural season. The survey contained information on food and non-food consumption expenditure, agricultural production, income, asset ownership, credit use, anthropometry and morbidity, education and 24-hour food consumption recall.

The sample was drawn from 29 *barangays* (the smallest political unit in the Philippines) and was stratified by agricultural production activities, particularly corn (the food crop) and sugarcane (the cash crop), proximity to the sugar mill (as a proxy for access to the new crop), and access to land, including ownership, tenancy and landlessness. The initial sample included 510 households, although 448 households were interviewed in all four rounds.

Our follow-up survey questionnaire closely reflected the one used in 1984/85. In the fall of 2003, we interviewed all original respondents still living in the survey area. We were able to contact 311, or 61%, of the original respondents. The respondents listed all children who lived away from home and provided contact information. We sampled at random up to two children living in or near the origin household's village, yielding 261 households.

The second wave of data collection was from April to July 2004, during which the survey team interviewed any household formed by children who no

longer live in their *barangay* of origin. This included a large group of households in three major urban areas in Mindanao: Valencia, the commercial center of Bukidnon; Malaybalay, the provincial capital; and Cagayan de Oro in the province of Misamis Oriental, a major port and metropolitan area in northern Mindanao. The study also included many households in *poblaciones* (municipality seats) and other rural areas of Bukidnon. The sample size from this migrant wave consisted of 257 households—about 75% of potential migrants to be interviewed.

The 19-year interval, prior qualitative work, and detailed household-level and community data in both rounds offered a unique opportunity for findings on the impact of credit constraints over two generations.

Findings

Financial markets expanded greatly over the past 20 years, with both the size and diversity of loan transactions increasing. Yet, the percentage of households engaged in borrowing transactions decreased, and the bulk of borrowing continues to be from informal sources.

A review of changes in financial markets in Bukidnon between 1984-2003 (Morales 2004) shows that financial institutions greatly expanded in number and type; however, the rate of participation of parent households in credit transactions fell from 78% in 1984 to 63% in 2003 (Sharma 2006). Nonetheless, this rate is higher than the rate of participation of the children's households, which was 56%. The average loan amount in real terms (in 2003 pesos) increased considerably for parent households, from 7,471 pesos in 1984 to 30,391 pesos in 2003, while borrowing levels of children's households were significantly lower.

Parents and children use loans differently. While child households use credit primarily to finance current consumption, parent households use it quite evenly to finance consumption, health and education, and farm inputs. Both parent and children households depend primarily on private informal lenders for most of their credit transactions. More than half the borrowing transactions take place in the informal sector—private

informal lenders or interlinked contracts with employers and landlords.

Consistent with higher ownership of collateral assets such as land, parent households tend to transact more in the formal sector compared to children households. While 28% of the transactions of parent households are with formal bank and non-bank financial institutions, only 18% of the transactions of children households are of this nature. However, both children and parents households appear to have credit transactions with similar frequency (14% each) with special credit projects run by both government and non-government agencies.

The percentage of loan transactions that required the pledging of collateral is similar between parent and children households (40% and 37%, respectively).

Distribution of households by credit constraint status, agricultural producers only			
	Parent HHs 1984/85	Parent HHs 2003	HHs of children in the same village 2003
Quantity constrained: those who want to borrow more but do not	36%	33%	32%
Risk constrained 1¹	59%	75%	74%
Risk constrained 2²	60%	39%	36%
¹ do not want to avail themselves of more credit because of the fear of being unable to repay. ² do not want to avail themselves of more credit because of the fear of losing collateral, carrying too much debt, and not being used to borrowing. NOTE: The 1984/85 figures are an average over the relevant rounds, each of which has a recall period of four months, while the 2003 figures refer to the previous 12 months			

However, parent households on average have much larger loans. Since it is reasonable to assume, all else being equal, that collateral requirement increases with the size of loans, the collateral burden is less for parent households than for children households.

The proportion of households that are “quantity rationed” has remained approximately the same over the past 20 years. Yet, there is a substantial increase in the proportion of households that are “risk rationed.”

We tracked the distribution of agricultural households by credit constraint status in 1984/85 and 2003 (see table). Quantity-rationed households are those that would have wanted to borrow more, but did not. To arrive at a broader definition that takes into account

risk-rationed households, we can include (1) households that did not want to borrow because they were afraid of being unable to repay the loan, or (2) households that did not want to borrow because they were afraid of losing collateral, having too much debt, or unaccustomed to borrowing. If we add households that were afraid of being unable to repay (the first definition) to the quantity rationed households, then risk-constrained households amount to 75% of parent households and 74% of child households. If we add households afraid of losing collateral, having too much debt, or unaccustomed to borrowing (second definition), then we cover only 39% of parent and 36% of child households.

While the proportion of quantity-rationed households changed little, decreasing slightly from 36% to 33%, the proportion of risk-rationed households (using the first definition) has increased significantly from 59% to 75%. Fear of losing collateral is not an important motivation underlying risk rationing, since nearly 60% of loans do not involve collateral (Godquin and Sharma 2004a). Indeed, only 5% of parent households and 1% of child households mention fear of losing collateral as the reason for refusing additional credit. Discussions with local researchers and policymakers suggest that agriculture has become more risky as it has become more commercialized, and borrowers are afraid of being cut off from future borrowing if they are unable to repay.

There has been substantial movement across credit constraint categories over the past 20 years, and being credit constrained in the past does not imply that one will be constrained at present.

Even though the proportion of quantity-rationed households has remained steady, many households have moved across credit constraint categories over the past 20 years. Of the 198 agricultural households for which we have data on credit constraints in both periods, 53% have not changed credit constraint status. Twenty seven percent who were not credit constrained in the past are still unconstrained in 2003, whereas 28% of those who were constrained have remained so. Forty percent of those who were quantity-rationed in 1984/85 are no longer rationed, while 6% of those who were not quantity-rationed in 1984/85 report being rationed in 2003. Sharma (2006) shows that past credit constraint status affects neither current credit market behavior nor current credit constraint status, probably owing to the growth of the financial sector and the evolution of financial (and other) institutions over the past two decades.

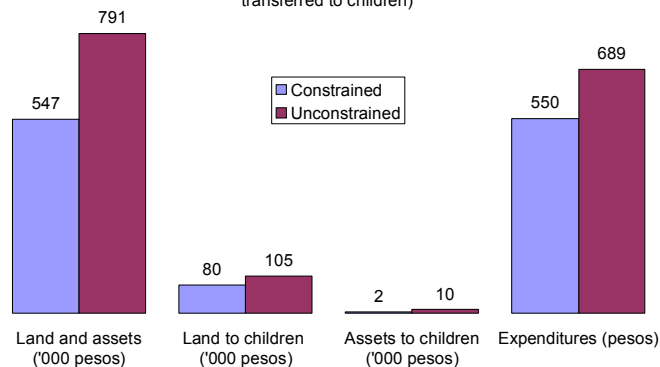
Although being credit constrained in the past does not predict being credit constrained at present, the long-term impact of past credit constraints is felt both by parents and children (see figures).

Credit constraints may have persistent long-term impacts. The data show that parents who were credit constrained in the past have lower levels of land and assets now, made fewer transfers of assets to their children, and have lower levels of per capita consumption. Furthermore, children whose parents were credit constrained in the past have lower levels of assets and lower levels of per capita consumption.

Quisumbing (2006) suggests that past credit constraints, defined as being quantity rationed in at least one round in 1984/85, have negative impacts on

Differences between Credit-Constrained and Unconstrained Households: Parents

(impacts differ across regimes with >0.01 confidence, except for assets transferred to children)



current asset holdings, intergenerational asset transfers from parents to children, and current consumption. Analysis shows that, compared to unconstrained households, parent households that were credit constrained in 1984/85 have significantly lower predicted values of land and nonland assets in 2003 as well as significantly lower predicted values of nonland assets transferred to children.

Predicted values of current weekly expenditure per adult equivalent are significantly lower for parents who were credit constrained in the past compared to those who were unconstrained. Similarly, predicted values of land and asset holdings are lower for children whose parents were credit constrained in the past, compared to those who were unconstrained;



BASIS Briefs

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predicted values of current consumption are also significantly lower for children whose parents were credit constrained.

Credit constraints have long-term impacts on the accumulation of human capital. Children whose parents were credit constrained complete fewer years of schooling and are shorter as adults than those who grew up in unconstrained households.

Other evidence using this data set (Gilligan 2006) suggests that constrained households are also disadvantaged with respect to completed schooling and adult nutritional status, with children from constrained households completing fewer years of schooling, and having lower stature as adults, compared to those from unconstrained households.

Our findings on credit constraints show widespread impacts across generations on physical asset accumulation, parent to child transfer of assets, human capital investment, and consumption. The impacts of credit constraints are serious and long term, and therefore merit careful attention from policymakers.



Project outputs

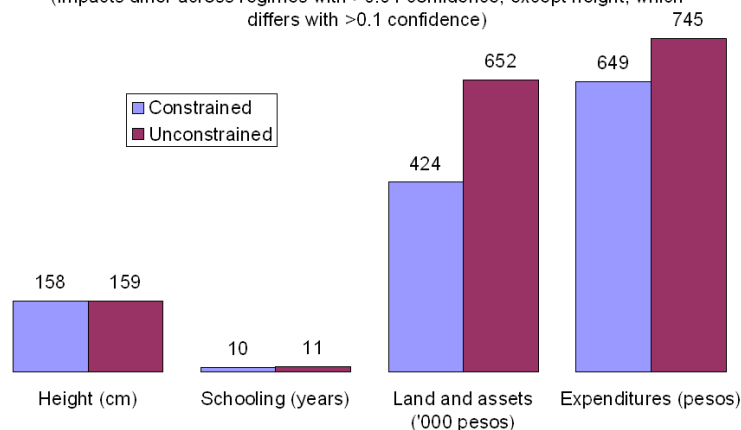
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(Impacts differ across regimes with >0.01 confidence, except height, which differs with >0.1 confidence)



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