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Destined for destitution: intergenerational poverty persistence in Indonesia

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What is Chronic Poverty?

The distinguishing feature of chronic poverty is extended duration in absolute poverty.

Therefore, chronically poor people always, or usually, live below a poverty line, which is normally defined in terms of a money indicator (e.g. consumption, income, etc.), but could also be defined in terms of wider or subjective aspects of deprivation.

This is different from the transitorily poor, who move in and out of poverty, or only occasionally fall below the poverty line.

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Abstract

We estimate intergenerational poverty persistence in Indonesia using a panel dataset. This is the first such study done to look at the issue in the Indonesian context. In contrast to the majority of studies on this issue, we include controls for many household and individual characteristics, including one for living arrangements. Moreover, to circumvent data issues that plague earnings data in developing countries, we use chronic poverty status as a long-term parental welfare measure. We find substantial intergenerational mobility away from poverty among children from poor households. However, we find that children growing up in chronically poor households have a 31 percentage point higher risk of continuing to live in poverty as adults compared with children from non-chronically poor households.

Keywords: chronic poverty, intergenerational transmission, poverty dynamics, children, welfare, Indonesia; panel data

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1 Introduction

Since the late 1960s, a strand in the poverty literature has been occupied with the question of whether poverty is inherited from parents to children, beginning with the seminal work of Blau and Duncan (1967). This literature began by looking at the degree of connectedness between a son's occupation with his father's (Blau and Duncan, 1967), and has since expanded to include welfare recipiency (Solon *et al.*, 1988), poverty status (Corcoran, 1995), schooling (Behrman *et al.*, 2001), and the most popular, income, which gives birth to the phrase 'intergenerational earnings elasticity'.[1]

While numerous studies in developed countries attempt to measure the degree of connectedness between parental welfare and their children's, most studies in developing countries focus on the intermediate channels. In a review of the literature in developing countries, Harper *et al.* (2003) focus on studies that look at several critical aspects of child welfare that could determine poverty transfers, such as nutrition, education, child work, attitude, support and guidance. These aspects are similar to the four main channels put forward by Corcoran (1995) to explain intergenerational transmission of poverty in the United States: culture of poverty, lack of material resources, parental disadvantage beyond poverty, and social isolation. She states that, after reviewing the evidence, the economic resources model is the most supported and encompassing explanation, while the culture of poverty theory is not empirically supported.

A final note regarding the channels is the difficulty to disentangle which channel is the most plausible and, afterwards, to determine how it matters. Harper *et al.* (2003) state that they are mostly interconnected anyway. Moreover, Corcoran (1995) argues that while so far it is accepted that growing up in 'bad' neighbourhoods is bad for children, one does not know what it is about bad neighbourhoods that matter. Similarly, while some studies find that lack of parental resources matters, the route that it takes is less clear.

The main weakness of the early literature, according to Corcoran (1995), is its reliance on cross-sectional data. Since the late 1980s, however, researchers in the United States began employing a longitudinal dataset, the Panel Study of Income Dynamics, to investigate this issue. Given that the US is one of the first countries that have such data, the literature is dominated by studies from that country. The majority of developing countries, meanwhile, do not have panel datasets. This means that this kind of investigation is very rarely done in places where poverty is most severe.[2] Harper *et al.* (2003) state that 98 of 110 low and medium human development countries do not have data on poverty dynamics, while those

[1] Two review articles on intergenerational earnings elasticity are Solon (2002) and Corak (2006).

[2] Solon (2002) listed two developing countries where the intergenerational earnings elasticity has been measured: Malaysia and South Africa.

that do usually only have short spanning data consisting of two waves. Finally, it is widely acknowledged that data limitations and largely varying empirical models prevent thorough cross-country comparisons (Solon, 2002; Corak, 2006).

Given the background above, we contribute to the literature by estimating the degree of intergenerational persistence of poverty in Indonesia using a relatively long-spanning dataset that consists of three waves. Different from most studies in developing countries, we do not ascertain the channels through which the dependence occurs, but estimate the strength of the relationship. To our knowledge, this is the first study to estimate the linkage in Indonesia. The rest of the paper is as follows. Section two explains the estimation strategy that we choose. Section three discusses data and descriptive statistics. Section four provides the estimation results. Section five concludes.

2 Estimation Strategy

Our econometric model is not exactly the same as the one that is widely used in studies on intergenerational earnings mobility (e.g. Corak, 2006). Firstly, we use poverty status rather than log of income, because it is widely acknowledged that income data in developing countries are notoriously noisy. In contrast, consumption expenditure data, which we use to calculate poverty status, are relatively more reliable. Finally, poverty is a more comprehensive indicator of welfare, covering lack of material resources and parental disadvantage (Corcoran, 1995).

Secondly, we define an adult as a person who is already married. Our rationale is as follows. First, in some areas of the country, children are given in marriage at an extremely young age. Hence, solely using age to indicate adulthood may disguise this fact. Moreover, the law in Indonesia considers a married person as an adult, regardless of age. As an example, such a person is eligible to cast his or her vote in an election. Finally, the culture in Indonesia is such that most unmarried children live with their parents regardless of age, while the majority of married children live away from their parents. Therefore, in the context of Indonesia, marriage is a more reliable indicator of adulthood and economic independence than age.

Based on the two factors above, the basic relationship that we estimate is formulated in Equation (1).

$$P_{i,married} = \beta_0 + \beta_1 P_{i,unmarried} + \beta_2 split_i + \beta_3 X_i + \varepsilon_i \quad (1)$$

where $P_{i,married}$ is the poverty status of person i after he or she is married. This variable is equal to one if the person is poor and is zero otherwise. Meanwhile, $P_{i,unmarried}$ is the poverty status of that person when he or she was not yet married. Recognising that the majority of Indonesian households are living near the poverty line (Suryahadi and Sumarto, 2003),

which means that even a small shock can make non-poor families fall into poverty, we use a chronic poverty measure as opposed to current poverty. This is similar to the route taken in the literature on intergenerational earnings mobility, where the earnings of parents are averaged over a few years to get a more permanent indicator of parental earning (Corak, 2006). Moreover, Solon (2002) argues that using a single observation to proxy for lifetime earning leads to a bias. Finally, chronic poverty is defined as severe and persistent poverty. Corcoran (1995) finds that children raised in persistently poor homes are likely to cycle in and out of poverty as adults.

Meanwhile, $split_i$ is a variable that is equal to one if the person lives away from his or her parents after marriage.[3] If disproportionately more children from poor families take advantage of economies of scale by continuing to live with their parents way into adulthood compared with non-poor families, then this is likely also to affect their poverty status as adults. Hence, not controlling for living arrangements will bias the results. Chadwick and Solon (2002) make an effort to avoid over-representing daughters who left home at a late age, but do not control for living arrangements in their study.

Finally, X_i is a vector of control variables that includes the person's education attainment, employment status, sector of occupation, age, marriage tenure, as well as the education attainment, age, and employment status of the spouse, a dummy for rural areas, a dummy if the person migrated across provinces before and after marriage, and the size of the household that the person is living in before marriage.

Since we have a limited dependent variable, we estimate the model using probit. Therefore, the model we estimate is defined in Equation (2).

$$\Pr(P_{i,married} = 1) = \Phi(\beta_0 + \beta_1 P_{i,unmarried} + \beta_2 split_i + \beta_3 X_i + \varepsilon_i) \qquad (2)$$

2.1 Possible Bias

There are two issues that could bias our estimation results. Firstly, we focus on married people. If a person's propensity to marriage is correlated with his or her probability to become poor as adults, then there is a selection bias, because we drop unmarried individuals. Qualitative case studies on moving out of poverty in Indonesia indeed note that marriage is sometimes used as a way to escape poverty (Febriany, 2005 and 2006). However, the correlation coefficients of marriage status with childhood chronic poverty and

[3] We could not find any lengthy discussion on living arrangements in the literature on intergenerational earnings mobility.

adult poverty in our dataset are both very low.[4] Hence there is no reason to believe that the data that we use suffer from selection bias.

Secondly, our results are likely to suffer from omitted variable bias because we do not have data on the person's motivation. In their qualitative work, Narayan and Petesch (2007) find that motivation is a very strong factor of people moving out of poverty, while Harper *et al.* (2003) state that efforts to break intergenerational poverty transmission are closely related to individual effort. In our defence, it is very hard to quantify motivation. In any case, we can guess the direction of the bias. Assuming that more motivated individuals are more likely to live on their own and are less likely to be poor as adults, then the coefficient is biased downward, implying that our estimate of β_1 is a lower bound.

3 Data

We use data from the Indonesian Family Life Survey (IFLS), a longitudinal household socioeconomic and health survey that began in 1993. The second and third waves were done in 1997 and 2000. The sample represents about 83 percent of the Indonesian population living in 13 provinces in Indonesia. Between IFLS1 and IFLS2, the attrition rate is 5.6 percent, while it is 5 percent between IFLS2 and IFLS3. Overall, 95.3 percent of households that participated in IFLS1 also participated in IFLS3.[5] The total respondents in IFLS3 are 10,574 households, consisting of 7,928 panel households and 2,646 new split-off households.

To define poverty, we use the same poverty lines used in an IFLS official publication (Strauss *et al.*, 2004b), which calculates the poverty line for 2000. For 1993 and 1997, we use the deflated 2000 poverty line calculated by Widyanti *et al.* (2008). We define a household to be chronically poor if it is poor at least twice in the three IFLS waves.[6]

In this study, we focus on individual respondents whose household status in 1993 had been children and who had not yet been married in 1993. In addition, since we are using a chronic poverty measure, we limit our analysis to those who were married between 1997 and 2000.[7]

[4] The correlation coefficient between marriage status and adult poverty is -0.0079, while the correlation coefficient between marriage status and childhood chronic poverty is -0.0158.

[5] The information in this paragraph is taken from the IFLS3 official guide (Strauss *et al.*, 2004a).

[6] Using a stricter definition, where a household is considered to be chronically poor if it is poor in all three waves, does not significantly change the results.

[7] This is not a desirable situation, because ideally we need a more long-term measure of welfare. In his review of the intergenerational mobility studies, Corak (2006) stresses the importance of using long-term earnings of both the child and the parents. However, our data do not permit the former. Hence, our results need to be considered with caution.

Moreover, we drop observations where spouse data are missing.[8] These consist of panel respondents whose spouse is working outside of Indonesia. Our final sample consists of 945 observations. Appendix 1 provides the mean and standard deviation of the variables.

4 Intergenerational persistence of poverty

Our first task is to establish the extent of intergenerational mobility in Indonesia. Table 1 shows the poverty transition matrix, which gives a simple breakdown of the proportion of people leaving and entering poverty as adults compared with their poverty status as children. The table shows that 9.6 percent of those who were not chronically poor before marriage become poor, while among those who were chronically poor as children, 51.9 percent escape poverty after marriage. Although not as substantial, this result is similar to the United States, where less than 25 percent of black poor children and 10 percent of white poor children remain poor in early adulthood (Corcoran, 1995), and also other European countries (Duncan *et al.*, 1993). In conclusion, there is a relatively considerable intergenerational mobility in Indonesia.

While Table 1 provides a cause for optimism, we still need to investigate whether individuals who grew up in poverty have a higher probability of remaining poor as adults compared with their counterparts who grew up in a better economic environment. Hence, we next show the econometric results of whether children from chronically poor households still have a higher probability of remaining poor as adults.

Table 1. Transmission of Poverty Before and After Marriage

Poverty status of original household	Poverty status after marriage (percent)		N
	Not poor	Poor	
Not chronically poor	90.4	9.6	782
Chronically poor	51.9	48.1	163
Total	84.6	15.4	945

Note: Figures are row percentages.

[8] Including the observations with the missing spouses would increase the number of observations by 50 observations. Given its small share, we consider it is not a significant source of bias.

Table 2 provides the estimation results. The first two columns exclude $split_i$. Looking directly at Column 2, the probability of a child coming from a chronically poor household and continuing to be poor after marriage is 37.1 percentage points higher than a child from a non-chronically poor household. Our results are similar to a study in the United States, which finds that children raised in poverty are much more likely to be poor than children raised in non-poor families (Corcoran, 1995).

Using the estimated coefficients, not the marginal effects, the probability of an average person growing up in a non-chronically poor household and falling into poverty as an adult is 7 percent. Meanwhile, the probability of a person staying poor had he or she been growing up in a chronically poor household is 42.6 percent. Therefore, after controlling for observable characteristics, there seems to be a quite high probability for both sets of children to be non-poor as adults, which corroborates the transition matrix in Table 1.

Columns 3 and 4, meanwhile, include a control for living arrangements after marriage. Column 4 shows that the probability for an individual who lived in a chronically poor household before marriage to still be poor after marriage is 34.9 percentage points higher. While slightly smaller than Column 2, this indicates strong intergenerational poverty persistence.[9] In addition, the coefficient on living arrangements shows that children who live away from their parents after marriage are associated with a 13.9 percentage point lower probability of being poor.

Using the estimated coefficients of the specification in Column 4, the probability of the average person living in a chronically poor household as a child to remain poor as an adult is 39.7 percent, while another person with exactly the same characteristics, except that he or she grew up in a non-chronically poor household, has a probability of 6.4 percent to become poor as an adult. Hence, while we find relatively low intergenerational persistence of chronic poverty, children from chronically poor households have a much greater risk of spending the rest of his or her life in poverty.

[9] Using a stricter definition of chronic poverty, the marginal effect is 47.0 percentage points. While the effect is larger from Column 4, it is not significantly different.

Table 2. Intergenerational Poverty Persistence (Marginal Effects)

	(1)	(2)	(3)	(4)
Chronically poor	0.385**	0.371**	0.373**	0.349**
	(0.047)	(0.052)	(0.045)	(0.051)
Split off			-0.148**	-0.139**
			(0.031)	(0.030)
Individual characteristics				
Years of schooling completed		-0.010**		-0.010**
		(0.003)		(0.003)
Working		-0.086		-0.083
		(0.061)		(0.060)
Main sector of occupation				
Industry		0.042		0.032
		(0.055)		(0.052)
Trade		-0.049		-0.06
		(0.046)		(0.043)
Services		0.013		-0.013
		(0.043)		(0.037)
Age in 2000		0.004		0.004
		(0.004)		(0.004)
Female		0.007		-0.019
		(0.062)		(0.060)
Marriage tenure (years)		0.028*		0.030*
		(0.013)		(0.012)
Characteristics of spouse				
Years of schooling completed		-0.006		-0.005
		(0.004)		(0.003)
Working		-0.064		-0.045
		(0.043)		(0.040)
Age in 2000		-0.002		-0.002
		(0.003)		(0.003)
Other control variables				
Rural in 1993		-0.044		-0.044
		(0.047)		(0.052)
Rural in 2000		0.02		0.025
		(0.045)		(0.047)
Migrated		-0.090**		-0.056
		(0.030)		(0.045)
Household size in 1993		-0.006		-0.001
		(0.006)		(0.006)
Number of observations	945	945	945	945

*note: ** significant at 1 percent, * significant at 5 percent; robust standard errors in parentheses; dependent variable is poverty status after marriage, where poor = 1; provincial dummies are included in Columns 2 and 4.*

5 Conclusion

In this paper we estimate the degree of intergenerational poverty persistence in Indonesia, the first time that such study has been done for the country. We use a longitudinal dataset and, based on the context in Indonesia, use marriage instead of age as an indicator of adulthood. Moreover, we use chronic poverty as the indicator of wealth during childhood.

Our findings are two-fold. Firstly, we find relatively low intergenerational persistence of poverty. In our most comprehensive econometric specification, a child growing up in a chronically poor household has a 60 percent probability of escaping poverty as an adult. Secondly, however, we find that children growing up in chronically poor households have 35 percentage-point higher probability of remaining poor as adults. This result corroborates the general finding from other countries, where children from poor families are much more likely to live in poverty as adults despite substantial intergenerational mobility out of poverty.

It is now imperative to further understand why it is the case that poor children have a much higher chance of being poor as adults. Although Corcoran (1995) warns that identifying, isolating and measuring the disadvantages for which poverty is a proxy is practically very difficult, it must be done so that policy prescriptions can be designed to break this vicious cycle.

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Appendix

Appendix 1. Mean and Standard Deviation of Variables

	Mean	Std. Dev.	Dummy variable
Poor in 2000	0.154	0.362	Yes
Chronically Poor	0.172	0.378	Yes
Split off	0.636	0.481	Yes
Individual characteristics			
Years of schooling completed	8.249	3.870	
Working	0.642	0.480	Yes
Main sector of occupation			
Agriculture	0.282	0.450	Yes
Industry	0.201	0.401	Yes
Trade	0.183	0.387	Yes
Services	0.334	0.472	Yes
Age in 2000	24.124	4.792	
Female	0.519	0.500	Yes
Marriage tenure (years)	1.519	1.042	
Characteristics of spouse			
Years of schooling completed	8.024	4.085	
Working	0.666	0.472	Yes
Age in 2000	24.766	5.685	
Other control variables			
Rural in 1993	0.545	0.498	Yes
Rural in 2000	0.545	0.498	Yes
Migrated	0.049	0.215	Yes
Household size in 1993	6.013	2.094	

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