

**Destined for Destitution:  
Intergenerational Poverty Persistence in Indonesia**

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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. Different from 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 long-term parental welfare measure. We find substantial intergenerational mobility away from poverty among poor children. However, children growing up in chronically poor households have a 31-percentage point higher risk to continue living in poverty as adults compared to children from non-chronically poor households.

Keywords: chronic poverty, intergenerational mobility, Indonesia.

JEL Classifications: I32, J62.

## I. Introduction

The poverty literature has been occupied with the question of whether poverty is inherited from parents to children since late 1960s, beginning with the seminal work of Blau and Duncan (1967). This branch of the poverty 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 expand to include welfare reciprocity (Solon et al., 1988), poverty status (Corcoran, 1995), schooling (Behrman, Gaviria, and Székely, 2001), and the most popular, income, which gives birth to the phrase 'intergenerational earnings elasticity.'<sup>1</sup>

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, Marcus, and Moore (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, Marcus, and Moore (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, 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

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<sup>1</sup> Two review articles on intergenerational earnings elasticity are Solon (2002) and Corak (2006).

rarely done in places where poverty is the most severe.<sup>2</sup> Harper, Marcus, and Moore (2003) state that 98 of 110 low and medium human development countries do not have data on poverty dynamics, while those 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 a 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 II explains the estimation strategy that we choose. Section III discusses data and descriptive statistics, while Section IV provides the estimation results. Section V concludes.

## **II. Estimation Strategy**

Our econometric model is not exactly the same compared to the one that is widely used in studies on intergenerational earnings mobility (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 lines, 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 off, 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 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 compared to age.

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<sup>2</sup> Solon (2002) listed two developing countries where the intergenerational earnings elasticity has been measured: Malaysia and South Africa.

Based on the two factors above, the basic relationship that we estimate is 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 indicator 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 indicator of that person when he or she was still 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 earning 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 a much worse form of poverty. Corcoran (1995) finds that children raised in persistently poor homes are likely to cycle in and out of poverty as adults. We define chronic poverty in the next section.

Meanwhile,  $split_i$  is a variable that is equal to one if the person lives away from his or her parents after marriage. We could not find any lengthy discussion on living arrangements in the literature on intergenerational earnings mobility. If disproportionately more children from poor families take advantage of economies of scale by continuing to live with their parents way into adulthood compared to non-poor families, then this is likely to also 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 overrepresenting daughters who left home at a late age, but do not control for living arrangements in their article.

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 in Equation 2.

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

### *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 notes that marriage is sometimes used as a way to escape poverty (Febriany, 2005, 2006). However, the correlation coefficient between marriage status, childhood chronic poverty, and adult poverty in our dataset is very low.<sup>3</sup> This means that there is no reason to believe that the data that we use suffer from selection bias.

Secondly, our results 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 to move out of poverty, while Harper, Marcus, and Moore (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 coefficients are biased downward, meaning that our estimate of  $\beta_1$  is a lower bound.

### **III. 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% of the Indonesian population living in 13 provinces in Indonesia. Between IFLS1 and IFLS2, the attrition rate is 5.6%, while it is 5% between IFLS2 and IFLS3. Overall, 95.3% of households that participated in IFLS1 also participated in IFLS3.<sup>4</sup> 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

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<sup>3</sup> 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.

<sup>4</sup> The information in this paragraph is taken from the IFLS3 official guide (Strauss et al., 2004a).

use the deflated the 2000 poverty line calculated by Widyanti, Suryahadi, and Sumarto (2008). We define a household to be chronically poor if it is poor at least twice in the three IFLS waves.

In this study, we focus on respondents whose household status in 1993 had been children and who had not yet been married in 1993. In addition, since we are using chronic poverty measure, we limit our result to those who were married between 1997 and 2000.<sup>5</sup> Moreover, we drop observations whose spouse data are missing. These consist of panel respondents whose spouse is working outside of Indonesia. Our final sample consists of 961 observations. Appendix 1 provides the mean and standard deviation of the variables.

#### **IV. 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 to their poverty status as children. The table shows that 8.7% of those who were not chronically poor before marriage becomes poor, while the majority of those who were chronically poor, 59.0%, escape poverty after marriage. Although not as substantial, this result is similar to the United States, where less than 25% black poor children and 10% 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 to remain poor as adults compared to their counterparts who grew up in a much more conducive economic environment. Hence, we next show the econometric results of whether children from chronically poor households still have a higher probability to remain poor as adults.

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<sup>5</sup> 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 earning of both the child and the parent. However, our data do not permit the former. Hence, our results need to be considered with caution.

Table 1. Transmission of Poverty Before and After Marriage (%)

Poverty status of original household	Poverty status after marriage	
	Not poor	Poor
Not chronically poor	91.3	8.7
Chronically poor	59.0	41.0

note: figures are row percentages.

Table 2 provides the estimation results. The first two columns exclude *split<sub>i</sub>*. Looking directly at Column 2, the probability of a child coming from a chronically poor household to continue to be poor after marriage is 33.4 percentage points higher than a child from a non-chronically poor household. Our results are similar to a study in the United States, who find 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 for an average person growing up in a non-chronically poor household to fall into poverty as an adult is 7.5%, while the probability for the same person to stay poor had he or she been growing up in a chronically poor household is 40.9%. Therefore, 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.

Table 2. Intergenerational Poverty Persistence, Marginal Effects

	(1)	(2)	(3)	(4)
Chronically poor	0.369** (0.040)	0.334** (0.045)	0.360** (0.039)	0.311** (0.04)
Split off			-0.132** (0.025)	-0.135** (0.025)
<u>Individual characteristics</u>				
Years of schooling completed		-0.009** (0.003)		-0.009** (0.003)
Working		-0.066 (0.042)		-0.064 (0.041)
Main sector of occupation				
Industry		0.048 (0.045)		0.046 (0.044)
Trade		0.003 (0.044)		-0.006 (0.040)
Services		0.004 (0.035)		-0.011 (0.031)
Age in 2000		0.003 (0.003)		0.003 (0.003)
Female		-0.007 (0.043)		-0.020 (0.041)
Marriage tenure (years)		0.031** (0.010)		0.033** (0.009)
<u>Characteristics of spouse</u>				
Years of schooling completed		-0.006* (0.003)		-0.006* (0.002)
Working		-0.040 (0.034)		-0.029 (0.031)
Age in 2000		-0.002 (0.002)		-0.002 (0.002)

Table 2. *Continued*

<u>Other control variables</u>				
Rural in 1993		-0.043 (0.034)		-0.048 (0.037)
Rural in 2000		0.028 (0.033)		0.041 (0.036)
Migrated		-0.061 (0.042)		-0.023 (0.059)
Household size in 1993		-0.003 (0.005)		0.001 (0.005)
Observations	945	945	945	945

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

Columns 3 and 4, meanwhile, include a control for living arrangements after marriage. Column 4 shows that the intergenerational poverty effect is still statistically significant, with the coefficient slightly smaller than Column 2. In addition, the coefficient on living arrangements shows that children who live away from their parents after marriage are associated with a 13.5 percentage-point lower probability to be poor.

Using the estimated coefficients of the specification in Column 4, the probability of the average person who were living in a chronically poor household as a child to remain poor as an adult is 38.0%, 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 6.9% to become poor as an adult. Hence, while we see relatively low intergenerational persistence of chronic poverty, children from chronically poor households have a much greater risk of spending his or her life in poverty.

## V. Conclusion

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

Our findings are two-fold. Firstly, we find quite low intergenerational persistence of poverty. In our most comprehensive econometric specification, a child growing up in a chronically poor household has a 62.0% probability to escape poverty as an adult. Secondly, however, we find that children growing up in chronically poor households have between 31 and 33 percentage-point higher probability to remain 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 the why it is the case poor children have a much higher chance to be poor adults. Although Corcoran (1995) warns that identifying, isolating, and measuring the disadvantages to which poverty is a proxy for is practically very difficult, it must be done so that policy prescriptions could be designed to break this vicious cycle.

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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
<u>Individual characteristics</u>			
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	
<u>Characteristics of spouse</u>			
Years of schooling completed	8.024	4.085	
Working	0.666	0.472	Yes
Age in 2000	24.766	5.685	
<u>Other control variables</u>			
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	