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Destined for Destitution: Intergenerational Poverty Persistence in Indonesia

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ABSTRACT

Destined for Destitution: Intergenerational Poverty Persistence in Indonesia

Yus Medina Pakpahan, Daniel Suryadarma, and Asep Suryahadi*

We estimate intergenerational poverty persistence in Indonesia using a panel dataset. To the best of our knowledge, this is the first such study looking at the issue in the Indonesian context. Different from the majority of studies on this issue, we include controls for several household and individual characteristics, including 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 there is a substantial intergenerational mobility away from poverty among children from poor households. However, the risk of continuing to live in poverty as adults is 35 percentage points higher for children from chronically poor households than for children from households which are not chronically poor.

Keywords: chronic poverty, intergenerational mobility, children, welfare, Indonesia
JEL Classifications: I32, J62

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I. INTRODUCTION

Since the late 1960s, a strand of poverty literature has been occupied with the question of whether children inherit poverty from parents. 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 the receipt of welfare (Solon et al. 1988), poverty status (Corcoran, 1995), schooling (Behrman, Gaviria, and Székely 2001), and the most popular, income, which has given birth to the phrase 'intergenerational earnings elasticity'.[1]

While numerous studies in developed countries attempt to measure the degree of connectedness between the welfare of a parent and their children, 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 the 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 of discerning which channel is the most plausible, and then determining how it matters. Harper, Marcus, and Moore (2003) state that the channels are mostly interconnected. Moreover, Corcoran (1995) argues that while thus far it is accepted that growing up in "bad" neighborhoods is bad for children, one does not know what it is about bad neighborhoods that has a negative impact on children. Similarly, while some studies find that a lack of parental resources is significant, the channel through which it impacts on children is less clear.

The main weakness of the early literature, according to Corcoran (1995), is its reliance on cross-sectional data. From 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 United States was one of the first countries to have such data, the literature is dominated by studies from that country. The majority of developing countries, however, 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, 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 thorough cross-country comparisons (Solon 2002; Corak 2006).

Given this background, 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. Unlike most studies in developing countries, we do not ascertain the channels through which the dependence occurs, but rather, estimate the strength of the relationship. To the best of our knowledge, this is the first study to estimate the linkage in

[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.

Indonesia. The rest of the paper is as follows. Section II explains the estimation strategy chosen. Section III discusses data and descriptive statistics. Section IV provides the estimation results. Section V concludes.

II. ESTIMATION STRATEGY

Our econometric model is not exactly the same as that used more widely in studies on intergenerational earnings mobility (e.g. Corak 2006). Firstly, we use poverty status rather than the 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. Firstly, in some areas of the country, children are given in marriage at a 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. Such person is eligible, for example, 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).

$$Pi,married = \beta 0 + \beta 1\ Pi,unmarried + \beta 2\ spliti + \beta 3\ Xi + \varepsilon i \qquad (1)$$

where *Pi,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, *Pi,unmarried* is the poverty status of that person when he or she was not yet married. Recognizing 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 approach taken in literature on intergenerational earnings mobility, where parents' earnings are averaged over a few years to obtain a more permanent indicator of parental earnings (Corak 2006). Moreover, Solon (2002) argues that using a single observation as a 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.

Spliti 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 well 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. In their 2002 study, Chadwick and Solon make an effort to avoid over-representing daughters who left home at a late age, but do not control for living arrangements.

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

Finally, *Xi* is a vector of control variables that includes the person's educational attainment, employment status, sector of occupation, age, marriage tenure, as well as the educational 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 was 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).

$$Pr\ (Pi,married = 1) = \Phi\ (\beta 0 + \beta 1\ Pi,unmarried + \beta 2\ spliti + \beta 3\ Xi + \varepsilon i) \qquad (2)$$

Possible Bias

There are two issues that could bias our estimation results. Firstly, we focus on married people. If a person's propensity to marry is correlated with his or her probability of becoming poor as an adult, 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 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 people's motivation. In their qualitative work, Narayan and Petesch (2007) find that motivation is a very strong factor in moving 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 coefficient is biased downward, implying that our estimate of β1 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.[5] The total respondents in IFLS3 are 10,574 households, consisting of 7,928 panel households and 2,646 new split-off households.

[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).

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. (2009). 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 who, in 1993, were children and not yet married. In addition, since we are using a chronic poverty measure, we limit our analysis to those who were married between 1997 and 2000.[7] Moreover, we drop observations whose spouse data are missing.[8] These consist of panel respondents whose spouses are working outside of Indonesia. Our final sample consists of 945 observations. Appendix 1 provides the mean and standard deviation of the variables.

IV. ESTIMATION RESULTS

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 9.6% of those who were not chronically poor before marriage became poor, while among those who were chronically poor as children, 51.9% escaped poverty after marriage. Although not as substantial, this result is similar to the United States, where less than 25% of black poor children and 10% of white poor children remain poor in early adulthood (Corcoran 1995), as well as 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 are more likely to remain poor as adults compared to those who grew up in a more conducive economic environment. Hence, we next show the econometric results of whether children from chronically poor households have a higher probability to remain poor as adults.

Table 1. Transmission of Poverty Before and After Marriage

Poverty Status of Original Household	Poverty Status after Marriage (%)		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.

[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 both children's and parents' long term earnings. However, our data do not permit the former. Hence, our results need to be considered with caution.

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

Table 2 provides the estimation results. The first two columns exclude *spliti*, the living arrangement variable. Column 1 indicates that, uncontrolled for other characteristics, the probability of a child coming from a chronically poor household continuing to be poor after marriage is 38.5 percentage points higher than a child from a household which is not chronically poor. Controlling for other characteristics except for living arrangement after marriage, Column 2 shows that this probability falls slightly to 37.1 percentage points. These results are similar to the findings of a study in the United States by Corcoran (1995), who finds that children raised in poverty are much more likely to be poor as adults than children raised in non-poor families.

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)

Continued

Table 2. Continued

	(1)	(2)	(3)	(4)
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%, * 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

The estimated coefficients, not the marginal effects, can be used to predict equation (2) at the mean, i.e. the probability an average child will be poor as an adult. The results indicate that the probability of an average child from a non-chronically poor household falling into poverty as an adult is 7%. Meanwhile, the probability of a child from a chronically poor household staying poor as an adult is 42.6%.[9] Therefore, after controlling for observable characteristics, there seems to be quite a 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 include a control for living arrangements after marriage, which reduces the poverty transmission coefficients in Columns 1 and 2. After taking into account this variable, Column 4 shows that an individual who lived in a chronically poor household before marriage is 34.9 percentage points more likely to be poor after marriage than an individual with the same characteristics except coming from a household which is not chronically poor.[10] In addition, the coefficient of living arrangements shows that a child who lives away from their parents after marriage is 13.9 percentage points less likely to be poor than those who continued living with her or his parents after marriage.

Using the estimated coefficients of the specification in Column 4 to predict the probability an average child will be poor as an adult, the results indicate that an average child who lived in a chronically poor household has a 39.7% likelihood of remaining poor as an adult. Another child with exactly the same characteristics, but who grew up in a household which is not chronically poor, has a 6.4% likelihood of becoming poor as an adult. Hence, while we find relatively low intergenerational persistence of poverty, children from chronically poor households have a much greater risk of spending the rest of their life in poverty.

[9]The difference between these two probabilities is approximately the same as the marginal effect reported in Table 2.

[10]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.

V. CONCLUSION

In this paper we estimate the degree of intergenerational poverty persistence in Indonesia. To the best of our knowledge, this is 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 rather than age as an indicator of adulthood. Moreover, we use chronic poverty as the indicator of wealth during childhood.

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 35 percentage-point higher probability of remaining poor as an adult compared to a child who grew up in a household which is not chronically poor. This result corroborates the general findings from other countries, which show that despite substantial intergenerational mobility out of poverty, children from poor families are much more likely to live in poverty as adults.

It is now imperative to further understand why poor children have a much higher likelihood of continuing to be 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	