LEMBAGA PENELITIAN
SMERU
RESEARCH INSTITUTE

TOWARDS PRO-POOR POLICY THROUGH RESEARCH

WORKING PAPER

The Relationship between Chronic Poverty and Household Dynamics: Evidence from Indonesia

Wenefrida Widyanti

Asep Suryahadi

Sudarno Sumarto

Athia Yumna

JANUARY 2009

WORKING PAPER

The Relationship between Chronic Poverty and Household Dynamics: Evidence from Indonesia

Wenefrida Widyanti

Asep Suryahadi

Sudarno Sumarto

Athia Yumna

Editor

Zahra Matthews

SMERU Research Institute, Jakarta

January 2009

For further information, please contact SMERU, phone: 62-21-31936336; fax: 62-21-31930850; e-mail: smeru@smeru.or.id; website: www.smeru.or.id

Widyanti, Wenefrida

The Relationship between Chronic Poverty and Household Dynamics: Evidence from Indonesia/Wenefrida Widyanti et al. -- Jakarta: SMERU Research Institute, 2009.

ii, 19 p. ; 30 cm. -- (SMERU Working Paper, January 2009)

ISBN 978-979-3872-65-0

1. Chronic Poverty

I. SMERU
II. Widyanti, Wenefrida

362.5/DDC 21

ABSTRACT

The Relationship between Chronic Poverty and Household Dynamics: Evidence from Indonesia

Wenefrida Widyanti, Asep Suryahadi, Sudarno Sumarto, and Athia Yumna*

The composition of households frequently change due to births, deaths, divorces, marriages, the departure of children from home, and other compositional changes. Consequently, a large number of people undergo some fundamental change in household arrangements during relatively short periods of time. However, using data from Indonesia, this study finds that change in household composition is not a major cause of chronic poverty. Similarly, it finds no evidence that households change their composition to cope with negative shocks. Nevertheless, the study confirms that the larger the number of household members, the higher the probability that a household is chronically poor. Comparing different types of household compositions, households with a single female without children have the lowest probability of being either chronically poor or vulnerable, while single male households with or without children have the highest probability of being vulnerable. Frequent changes in household compositions imply that the use of household as the unit of analysis for poverty may undermine, or at least complicate, the conceptualization and measurement of chronic poverty. This also implies that the problem of targeting social protection programs not only relates to implementation, but also has some conceptual roots.

Keywords: household composition, chronic poverty, social protection, Indonesia
JEL Classification: D10, I32, J12

*Corresponding author: Asep Suryahadi, The SMERU Research Institute, Jl. Pandeglang No. 30, Jakarta 10310, Indonesia, phone: +62-21-31936336, fax: +62-21-31930850, email: suryahadi@smeru.or.id. We are grateful for funding support from the Chronic Poverty Research Centre. We also appreciate comments and suggestions from Armando Barientos on an earlier draft. The remaining errors and weaknesses, however, are ours.

TABLE OF CONTENTS

I. INTRODUCTION

A typical household usually consists of several individuals with different characteristics, including economic capacity, which ultimately determine the economic capacity of the household as a unit. Consequently, a change in a household's composition will affect its economic capacity and condition. The degree to which a household's economic capacity and condition change due to a change in household composition depends very much on the nature of the change in composition. The death of a small child in a household may have little effect, but the death of a breadwinner can have a profound effect on the economic capacity and condition of the household.

It is most likely that a change in household composition will simultaneously produce both positive and negative effects on a household's economic capacity and condition. The net effect, therefore, will be determined by the difference between these offsetting effects. For example, the death of a breadwinner will have a negative effect on a household's economic capacity through the loss of earning capacity of the deceased individual. At the same time, however, it will have a positive effect on the household's economic capacity through the loss of the deceased individual's consumption needs. In this case, the net effect will most certainly be negative since the loss in potential earnings will far outweigh the reduction in consumption needs.

On the other hand, the addition of a working adult to a household will most likely have a positive effect on a household's economic capacity and condition. When a working adult joins a household, he or she brings additional earning capacity to the household. At the same time, he or she adds to the consumption needs of the household. As long as the gain in earning capacity exceeds the increase in consumption needs, the household benefits from the addition to its members.

The direction of causation, however, can also go in the opposite direction. A change in the economic condition of a household can induce the household to change its composition. For example, an improvement in a household's economic condition may induce the household to have more children, while a deterioration in a household's economic condition may force the household to reduce its size by asking children to move out. However, other households may want to have more children when their economic condition deteriorates as a means to increase the labor that they can supply, as well as to provide better security in old age.

The existence of relationships between a household's composition and its economic capacity and condition indicates that household composition may be important in explaining why some households fall into chronic poverty. In general, chronic poverty refers to severe and persistent poverty, implying that the chronic poor are the poorest of the poor. It is plausible that certain household compositions, which produce a large gap between households' earning capacity and their consumption needs, are the underlying factors for chronic poverty.

This study aims to empirically examine the significance of household dynamics in falling into and escaping from chronic poverty. The analyses in this study utilize the Indonesian Family Life Survey (IFLS) panel data from the RAND Corporation. The study aims to throw light on the direction and strength of the correlation between changes in household composition and related changes in economic capacity on the one hand, and the incidence and duration of poverty spells on the other.

The remainder of the paper is organized as follows. Section II reviews the literature on the relationships between household composition and poverty. Section III describes the data used in the analyses. Section IV establishes the rates of poverty and chronic poverty in Indonesia during the period under study. Section V attempts to answer the question of whether changes in household composition and related economic capacity are associated with the incidence and duration of poverty. It examines the extent to which household dynamics is a source of vulnerability for poorer households and an instrument of protection. Section VI analyzes the exogeneity and endogeneity of household dynamics among poor households. Section VII investigates the "economic viability" of poorer households as an explanation of persistent poverty, particularly the intergenerational persistence of poverty. Section VIII discusses the implications of household dynamics for the conceptualization and measurement of chronic poverty. Section IX explores the implications of household dynamics for social protection targeted at chronically poor households. Finally, Section X concludes.

II. LITERATURE REVIEW

Households change compositions frequently through births, deaths, divorces, marriages, the departure of children from home, institutionalization, and a variety of more unusual compositional changes. A large fraction of the population undergoes some fundamental change in household arrangement during relatively short periods of time. In the United States, for example, more than half the population is found to experience some change in household composition over a five-year period, while over 15 years more than half are involved in a fundamental compositional change. Often the most dramatic changes, such as divorce or children leaving the parental nest, produce equally dramatic changes in economic status, geographic location, and other outcomes (Duncan and Hill 1985).

As explained by Edmonds, Mammen, and Miller (2001), household composition itself may be a component of consumption (giving potential member utility directly), an input of production, or both. This implies that the positive or negative income changes of an individual household member may influence the household's living arrangements or household composition. Similarly, based on the salient facts for Britain, Jenkins (2000) also noted that aside from changes in the head of the household's labor earnings, changes in the labor earnings of persons other than the head of the household, changes in non-labor income (including benefits), and changes in household compositions are also important for poverty dynamics.

Studies on poverty dynamics often categorize the poverty status of households into three groups: chronic poor, transient poor, and non-poor (or never poor). This categorization is actually aggregated from five more detailed poverty statuses: always poor (consumption expenditure or income levels in each period below the poverty line), usually poor (mean expenditures over all periods less than the poverty line but not poor in every period), churning poor (mean expenditures over all periods close to the poverty line but sometimes poor and sometimes non-poor in different periods), occasionally poor (mean expenditures over all periods above the poverty line but at least one time below the poverty line), and the never poor (expenditure in all periods above the poverty line). The five categorizations of poverty can be reclassified into the three categories: always and usually poor are classified as chronic poor, churning and occasionally poor are grouped into transient poor, and the rest is the non-poor or never poor group. However, the categorization of poverty status in many studies on chronic poverty may not rigorously refer to the classifications above. The chronic poor category, for instance, is also frequently linked to the duration and severity of poverty (Hulme, Moore, and Shepherd 2001).

McKay and Lawson (2002) describe the ways to distinguish between chronic and transient poverty by focusing on the characteristics of individuals or households. By identifying the characteristics of the chronic poor, we can in turn decide what the most suitable policy to combat chronic poverty is. They note that the most common characteristics of chronic poverty include being in disadvantaged in the following aspects: human capital, demographic composition, location, physical assets, and occupational category.

By taking panel data for post-reform rural China, Jalan and Ravalion (1998) separate measures of household poverty into chronic and transient components and use censored conditional quantile estimators to investigate the household and geographic determinants of both chronic and transient poverty. They find that a household's average wealth holding is an important determinant of both types of poverty. Furthermore, they found that although household demographics, level of education, and the health status of householders are important for chronic poverty, they are not significant determinants of transient poverty. Finally, smaller and better-educated households have less chronic poverty, whereas household size and level of education matters little for transient poverty.

For demographic composition characteristic in particular, they find that an increase in household size is likely to place an extra burden on the family and is expected to have a positive relationship with chronic poverty. The main determinants increasing the likelihood of chronic poverty include the movement of family members in and out of households as a result of increases in the dependency ratio, mortality number of children, grandchildren's presence in the nuclear household, gender and household structure such as single parent and elderly headed households, whether the household is a member of a marginalized group, i.e. a disadvantaged ethnic group, particular castes/tribes or the disabled.

In terms of household dynamics as a protection instrument, De Herdt (2007) investigates the restructuring of household composition in order to deal with economic shocks in poor households in Congo-Kinshasa. He finds that there an increasing number of cases where a single-parent family (a woman and her children) is hidden in the household of the woman's parents. Interestingly, this kind of household profile is more prevalent in poorer households, which results in a condition where children live in the single-parent household are very much affected twice by unfavourable economic circumstances. One important observation gained from this study is that the problem of poverty is transmitted not only to the mother but also to the next generation through the mechanism of undernourishment.

Woolard and Klasen's (2005) study on income mobility and household dynamics in South Africa find that there are three poverty traps that hamper the poor in moving out of poverty, namely large initial household size, poor initial education, and poor initial participation in the labor market. However, they discover that out of the three, the most important variable is the initial employment situation. Both an initial and increasing proportion of unemployed persons in the household has a sizeable negative impact on subsequent income mobility of the household. Bourreau-Dubois et al. (2003) also find out that moving in and out of poverty coincides more often with employment related events rather than with demographic events.

However, another important demographic status is that of households headed by a single female, either with or without children. The hypothesis proposed in previous research argues that female-headed households are more vulnerable to poverty, implying that being a single mother is closely connected to poverty. Higher poverty prevalence found in female headed households is a significant finding in the studies of Meenakshi and Ray (2002) in India, Aliber (2001) in South Africa, and Muyanga (2008) in Kenya. A similar result also applies in Hungary,

where female headed households are associated with a higher rate of long-term poverty (World Bank 2001).

The changes in household's composition, particularly related to chronic and transient poverty, is best identified using longitudinal households from panel data rather than cross-sectional data. Nevertheless, due to the various conceptions of the longitudinal household, the longitudinal household used in the analyses must be defined beforehand. For example, most longitudinal definitions of the "household" characterize a divorced wife and her children as "the same" household as that which existed prior to the divorce. Since divorce often produces dramatic changes in the economic well-being of the woman and children involved, longitudinal household definitions that combine intact and divorcing families lump together individuals who have undergone very different kinds of experiences and tend to produce potentially misleading results (Duncan and Hill 1985).

III. DATA

This study utilizes data from the Indonesia Family Life Survey (IFLS) of the RAND Corporation.[1] IFLS is an ongoing longitudinal household survey, with a sample which is representative of about 83% of the Indonesian population. The survey areas cover 13 out of 33 provinces in Indonesia. The first wave of IFLS, aptly called IFLS1, was conducted in 1993/94 by RAND in collaboration with the Demographic Institute of the University of Indonesia (LDUI). IFLS2 and IFLS2+ were subsequently conducted in 1997 and 1998 respectively by RAND in collaboration with UCLA and LDUI.[2] Finally, IFLS3 was fielded in 2000, conducted by RAND in collaboration with the Centre for Population and Policy Studies, Gadjah Mada University (PSKK-UGM).

Since IFLS is a longitudinal survey, the sampling scheme for the first round primarily determines the sample in subsequent rounds. The IFLS1 sampling scheme stratified on provinces, then randomly sampled within provinces. Provinces were selected to maximize representation of the population, capture the cultural and socioeconomic diversity of Indonesia, and be cost-effective to survey given the size and terrain of the country. Within each of the 13 provinces, enumeration areas (EAs) were randomly chosen from a nationally representative sample frame used in the 1993 Susenas a socioeconomic survey of about 60,000 households conducted by Statistics Indonesia (*Badan Pusat Statistik* or BPS). The IFLS randomly selected 321 EAs in the 13 provinces, oversampling urban EAs and EAs in smaller provinces to facilitate urban–rural and Javanese–non-Javanese comparisons. Within a selected EA field teams randomly selected households based on the 1993 Susenas listings of households obtained from the regional BPS office.

In IFLS1, interviews were conducted with 7,224 households and detailed individual-level data were collected from over 22,000 individuals. In IFLS2, the goal was to relocate and re-interview the 7,224 original households interviewed in IFLS1. If no members of the household were found in the 1993 interview location, the interviewer asked local residents where the household had gone. If the household was thought to be within one of the 13 IFLS provinces, the household was tracked to the new location and if possible interviewed there. In the end, 94% of

[1]The description of IFLS data in this section is summarized from the RAND Corporation website (www.rand.org/FLS/IFLS).

[2]The main purpose of IFLS2+ was to capture the immediate social impact of the Indonesian economic crisis that occurred during the year.

IFLS1 households were relocated and re-interviewed (including 69 IFLS1 households whose every 1993 member had died by 1997). In addition, interviews were conducted with 878 households which contained members who had split off from their original IFLS1 households. The total number of individuals interviewed in IFLS2 was over 33,000.

In IFLS2+, the target was to cover only one quarter of IFLS1 households. Therefore, approximately 2,000 households and 10,000 individuals were re-interviewed. In IFLS3, approximately 10,400 households and 39,000 individuals were interviewed. The re-contact rate of IFLS1 households in IFLS3 was 95.3%. Overall, around 91% of IFLS1 households were complete panel households interviewed in all three complete IFLS rounds, the IFLS1, IFLS2, and IFLS3.

The analyses in this study mostly utilize the complete panel data set of IFLS. This panel data set has a record of 6,403 households, observed continuously in 1993, 1997, and 2000.[3] In some sections of this report, however, analyses are performed on the full data set of each round. The IFLS1 data set has a record of 7,136 households, the IFLS2 data set has a record of 7,533 households, and the IFLS3 data set has a record of 10,158 households.

IV. POVERTY AND CHRONIC POVERTY IN INDONESIA

As a first step of analyses in this study, it is necessary to establish the poverty status of each household in the data. Following the common practice in Indonesia, the measurement of poverty in this study is based on the concept of current household consumption expenditure deficit. In this concept, a household is judged to be poor if its per capita household expenditure is below a certain threshold, popularly known as the poverty line.[4] The IFLS data provides information on household expenditure, but there is no data on the poverty line to be used. Therefore, the poverty line must be calculated independently before any poverty analysis on the data can be performed.

Strauss et al. (2004) have calculated the regional (provincial-urban/rural areas) poverty lines for IFLS3 data. The poverty lines were calculated by inflating the poverty lines for February 1999 calculated by Pradhan et al. (2001) to December 2000 using a method proposed in Suryahadi et al. (2003). These regional poverty lines are based on a single national food poverty basket, so they have the same real value across regions, while the non-food allowances are computed using the Engel-curve method. The poverty line inflation method, meanwhile, is based on re-weighting the consumer price index (CPI) to have 80% food share. The Indonesian CPI has a 55% food share.

Using the same method, in this study the December 2000 regional poverty lines calculated by Strauss et al. (2004) are deflated back to December 1997 and December 1993 for IFLS2 and IFLS1 respectively. Since the data for the Indonesian CPI is only calculated for urban areas, the same deflator is applied to the urban and rural areas within a province. The results of these regional poverty lines calculations are presented in Table A1 in the Appendix.

[3]In this case, we only include panel samples for those longitudinal households which are the same over time (origin households), regardless of the split-off.

[4]This concept is also used in the measurement of official poverty statistics in Indonesia (see BPS 2005).

Using these regional poverty lines, the poverty indicators for the households in the panel data are calculated and the results are presented in Table 1.[5] The table shows a clear improvement in the household welfare between 1993 and 1997. The poverty headcount index (P0), which is the proportion of poor households from all of the households in the sample, fell by more than eight percentage points, from 23% in 1993 to less than 15% in 1997. Similarly, the poverty gap index (P1), which measures the total distance of all poor household's per capita consumption from the poverty line averaged over the whole population, fell from 6.8% to 3.9% of the poverty line. Meanwhile, the poverty severity index (P2), which is the total square distance of all poor household's per capita consumption from the poverty line averaged over the whole population, also fell from 2.9% to 1.6% of the poverty line.

Table 1. Poverty Indicators of Panel Data Households (%)

Poverty Indicator	1993	1997	2000
Poverty headcount (P0)	23.05	14.56	15.02
Poverty gap (P1)	6.79	3.87	3.70
Poverty severity (P2)	2.92	1.56	1.37
Number of observations (N)	6,403	6,403	6,403

Source: Authors' calculations using IFLS data

Nevertheless, due to the economic crisis of mid 1997 to late 1999, there was stagnation in household welfare between 1997 and 2000. The poverty headcount increased slightly from 14.6% in 1997 to 15% in 2000, reversing the declining trend in the previous period. However, the poverty gap and poverty severity indices still decreased slightly to 3.7% and 1.4 % of the poverty line respectively in 2000. The poverty gap and poverty severity still decreased despite the economic crisis because the crisis mostly hit the middle and upper classes in urban areas (Wetterberg et al. 1999).

To obtain a figure of the incidence of chronic poverty in the households in the panel sample, it is necessary to look at the poverty dynamics of the households. Table 2 shows the poverty patterns of households in the panel sample across the survey rounds. The table shows that in all the three rounds of the survey in 1993, 1997, and 2000, only around 4% of the households were always found to be poor. On the other hand, around 66% of the households were found to have never been poor during all rounds of the survey. Among the remaining 30% of the households, around 20% were found to be poor in one round, and 10% were found to be poor in two rounds of the survey.

[5]The poverty indicators calculated are known as the FGT (Foster-Greer-Thorbecke) poverty indices. Specifically, the FGT poverty measures in summarized in the following formula:

$$P\alpha = \left(\frac{1}{N}\right)\sum_{i=1}^{q}\left(\frac{z - c_i}{z}\right)^{\alpha}$$

where N is the number of households, c_i is the per capita consumption of the i^{th} household, z is the poverty line, q is the number of poor households, and α is the weight attached to the severity of household poverty. P0 is called the poverty headcount index, P1 is called the poverty gap index, and P2 is called the poverty severity index (Foster et al. 1984).

Table 2. Poverty Dynamics of Panel Data Households

Poverty Pattern	1993	1997	2000	Incidence (%)	
Always poor	Poor	Poor	Poor	4.23	
Twice poor	Poor	Poor	Not poor	4.33	9.89
	Poor	Not poor	Poor	3.56	
	Not poor	Poor	Poor	2.00	
Once poor	Poor	Not poor	Not poor	10.93	20.16
	Not poor	Poor	Not poor	4.00	
	Not poor	Not poor	Poor	5.23	
Never poor	Not poor	Not poor	Not poor	65.72	
Number of observations (N)				6,403	

Source: Authors' calculations using IFLS data

As chronic poverty is defined as severe and persistent poverty, the always poor category certainly meets this definition. The twice poor category is also appropriate to be included in the chronic poor group as households in this group are in poverty most of the time. Meanwhile, the once poor category may not be appropriate to be included in the chronic poor group as they are not poor most of the time. This means the rate of chronic poverty in the panel household sample is around 14%.[6] Meanwhile, the once poor category is classified as the vulnerable because their experience shows that, although most of the time they are not poor, they are prone to poverty.

V. HOUSEHOLD COMPOSITION CHANGE AND CHRONIC POVERTY

To examine whether there is a relationship between changes in household composition and the phenomenon of chronic poverty, Table 3 shows the distributions of households in the panel sample into the three groups of poverty categories—the chronic poor, the vulnerable, and the non-poor—based on their experience of household composition change. Out of the total 6,403 households in the sample, 4,230 households, or 66%, experienced at least one change in household composition between 1993 and 2000.

Table 3. Existence of Change in Household Composition by Poverty Category (%)

Existence of Change in Household Composition	Poverty Categories			N
	Chronic Poor	Vulnerable	Non-poor	
No change in household composition	15.00	19.10	65.90	2,173
Experienced a change in household composition	13.66	20.71	65.63	4,230
Total	14.12	20.16	65,72	6,403

Source: Authors' calculations using IFLS data

[6]If chronic poverty is defined as those who are in poverty in all periods, then the rate of chronic poverty is around 4%. However, using this alternative definition results in similar findings in the subsequent analyses.

Among the households which experienced household composition change, around 13.7% are chronic poor, 20.7% are vulnerable, and 65.6% are non-poor households. Similarly, among the households which did not experience changes in composition, around 15% are chronic poor, 19% are vulnerable, and 66% are non-poor households. The distributions across poverty groups of households that did and did not experience compositional change are similar to each other as well as to the total distribution.

If a change in household composition is a source of vulnerability among poorer households it can be expected that those who experienced a change in their household composition will have a higher probability of being chronically poor. Hence, it can be expected that the distributions across poverty groups of households with and without compositional changes will differ significantly, i.e. those which experienced a change in household composition will have a significantly higher proportion of the chronic poor. Since Table 3 indicates that this is not the case, it can be concluded that change in household composition is not a major cause of the chronic poverty phenomenon in Indonesia.

To look at this issue further, in particular to examine whether certain types of compositional change induce a higher probability of households being chronically poor, Table 4 shows household distributions across poverty categories for each type of compositional change that occurred. The table shows that most of the distributions are either relatively similar to the total distribution or have a smaller proportion of the chronic poor. Hence, in general the table also implies that there is no evidence that certain types of changes in household composition increase the probability of a household being chronically poor. The exception is divorce or separation, which has a higher relative frequency of chronic poor households. However, this is based on a small number of observations with only 14 households in the sample which had experienced divorce or separation.

Table 4. Household Distributions Across Poverty Categories by Type of Compositional Change (%)

Type of Compositional Change	Poverty Categories			N
	Chronic Poor	Vulnerable	Non-poor	
Death of breadwinner	0.00	33.33	66.67	12
Death of other household member	15.00	15.00	70.00	20
Birth of a child	11.81	15.28	72.92	288
Divorce or separation	21.43	14.29	64.29	14
Additional working adult	14.34	20.58	65.08	1,074
Additional non-working adult	13.92	21.30	64.78	2,723
Others	5.05	22.22	72.73	99
Total	13.66	20.71	65.63	4,230

Source: Authors' calculations using IFLS data

VI. HOUSEHOLD DYNAMICS AS A PROTECTION INSTRUMENT

It is possible that households cope with negative shocks or bad states by changing their household composition. For example, after a negative shock, a household may send some of its children to live with a relative to reduce its economic burden. To examine this possibility, Table 5 shows the proportion of households which experienced a change in their household composition which had also experienced a bad state in the previous period. Two bad states are examined in this table: poverty and unemployment.

Table 5. Households Which Had Experienced a Bad State in the Previous Period as a Proportion of Households Which Had Experienced a Change in Composition (%)

Bad State in Previous Period	1997	2000
Poverty:		
- Poor in previous period	21.99	14.59
- Not poor in previous period	78.01	85.41
N	4,230	4,230
Unemployment:		
- Head unemployed in previous period	15.26	20.52
- Head employed in previous period	84.74	79.48
N	4,155	4,006

Source: Authors' calculations using IFLS data

In terms of poverty, the table indicates that 22% of all households that experienced a change in composition between 1993 and 1997 were poor in 1993. Similarly, 14.6% of all households that experienced a change in composition between 1997 and 2000 were poor in 1997. Meanwhile, Table 1 shows that 23% of households were poor in 1993 and 14.6% were poor in 1997. This implies that the proportion of poor households among those that experienced household composition change is very similar to the proportion of poor households in the total sample. This finding indicates that there is no evidence that households change their composition to cope with poverty.

In terms of unemployment, the table indicates that 15.3% of all households that experienced a change in composition between 1993 and 1997 had unemployed heads in 1993. Similarly, 20.5% of all households that experienced a change in composition between 1997 and 2000 had unemployed heads in 1997. Meanwhile, the data indicates that 15.3% of households had unemployed heads in 1993 and 18.7% had unemployed heads in 1997. This implies that the number of households with unemployed heads as a proportion of all households that experienced compositional change is very similar to the proportion of poor households in the total sample. This finding indicates that, as is the case with poverty, there is no evidence that households change their composition to cope with unemployment.

However, there is a possibility that a period of 3–4 years is too short for households which have a bad state to respond by changing their household composition. Therefore, Table 6 replicates Table 5 by showing households that had a bad state in the initial period (1993) as a proportion of those which experienced a change in their household composition between 1993 and 2000.

Table 6. Households which Had a Bad State in Initial Period as a Proportion of Those which Experienced Change in Household Composition (%)

Bad State in Initial Period	2000
Poverty:	
- Poor in initial period	21.84
- Not poor in initial period	78.16
N	4,006
Unemployment:	
- Head unemployed in initial period	15.10
- Head employed in initial period	84.90
N	4,006

Source: Authors' calculations using IFLS data

Table 6 shows that 21.8% of all households that experienced a change in composition between 1993 and 2000 were poor in 1993. Table 1 shows that 23% of households were poor in 1993. This implies that the number of poor households as a proportion of those which experienced a change in composition is very similar to the proportion of poor households in the total sample. This finding again indicates that there is no evidence that households change their composition to cope with poverty, even after a seven year period.

Similarly in terms of unemployment, the table indicates that 15.1% of all households that experienced a change in composition between 1993 and 2000 had unemployed heads in 1993. The data indicates that 15.3% of households had unemployed heads in 1993. This implies that the number of households with unemployed heads as a proportion of those that experienced a change in composition is very similar to the proportion of households with unemployed heads in the total sample. This finding indicates that, as in the case of poverty, there is no evidence that households change their composition to cope with unemployment, even after a seven year period.

VII. ECONOMIC VIABILITY AND CHRONIC POVERTY

Because household composition affects the economic capacity and viability of a household, it is important to establish whether certain household compositions are associated with a higher probability of becoming chronically poor. To examine this, Table 7 shows household distribution across poverty groups for each type of household composition at the initial period in 1993. The table shows that there is a wide array of types of household compositions in the data. A large majority of households, however, have both a husband and a wife present in the household.

Table 7. Household Distribution across Poverty Groups by Type of Household Composition at Initial Period (%)

Type of Household Composition at Initial Period	Chronic Poor	Vulnerable	Non-poor	N
Husband-wife households:	14.61	19.66	65.73	5,036
Husband and wife	6.38	18.62	75.00	376
Husband, wife, a child	8.14	17.83	74.03	774
Husband, wife, a child, others	17.96	20.40	61.64	451
Husband, wife, two children	11.58	17.03	71.40	881
Husband, wife, two children, others	14.99	21.55	63.47	427
Husband, wife, three children	15.13	21.07	63.80	674
Husband, wife, three children, others	16.61	16.93	66.45	313
Husband, wife, four or more children	22.71	21.71	55.58	797
Husband, wife, four or more children, others	19.53	23.32	57.14	343
Single father households:	9.57	17.02	73.40	94
Single male	0.00	0.00	100.00	33
Single father, a child	10.00	25.00	65.00	20
Single father, two children	15.79	26.32	57.89	19
Single father, three or more children	18.18	27.27	54.55	22
Single mother households:	9.60	18.64	71.75	354
Single female	0.00	6.45	93.55	31
Single mother, a child	5.83	15.53	78.64	103
Single mother, two children	13.59	25.24	61.17	103
Single mother, three or more children	11.97	18.80	69.23	117
Others	13.60	23.83	62.57	919
Total	14.12	20.16	65.72	6,403

Source: Authors' calculations using IFLS data

In general, the highly varied household compositions can be classified into four large groups: husband-wife households, single father households, single mother households, and other households. The table indicates that within each group, the larger the number of household members, the higher the probability a household to be chronically poor or vulnerable.

To examine the relationship between household composition and poverty status more rigorously, we performed an ordered probit analysis, the results of which are presented in Table 8. The independent variables used in this model are based on the initial period (i.e. 1993) conditions. The table shows that the chronic poor and the vulnerable generally have similar coefficients in terms of sign, significance level, and the magnitude of the coefficients. The results of the estimations in general confirm the findings from the descriptive analysis.

Firstly, the coefficient of the household size variable affirms that higher household size increases the probability of a household being chronically poor or vulnerable. In terms of household composition, households with a single male/father, with or without children, have a higher probability of being vulnerable than husband-wife households without children, which is the omitted category in the estimation.[7] Households with other compositions also have a higher probability of being in chronic poverty or vulnerable. On the other hand, households with a single female without children, have a significantly lower probability of being either in chronic poverty or vulnerable.

Meanwhile, the proportion of working household members has positive and significant coefficients. This indicates that urgency in meeting household needs forces chronically poor and vulnerable households to send more of their members to the labor market. On the other hand, the proportion of household members with a secondary education or higher has large negative coefficients. This confirms the importance of education in resolving the problem of poverty.

Table 8. Results of Ordered Probit of the Effects of Household Composition on the Probability of Being Chronic Poor or Vulnerable

Independent Variable	Chronic Poor		Vulnerable	
	Coefficient	Std. Error	Coefficient	Std. Error
Household composition:				
Husband-wife with children	0.01592	0.02367	0.01416	0.02190
Single male/father with and without children	0.08498	0.06077	0.05223 *	0.02562
Single female without children	-0.11640 **	0.00477	-0.21484 **	0.00591
Single mother with children	0.01100	0.03290	0.00901	0.02580
Other household compositions	0.06705 *	0.03200	0.04668 **	0.01784
Household characteristics:				
Number of household members	0.02383 **	0.00188	0.02035 **	0.00174
Dependency ratio	-0.00003	0.00004	-0.00002	0.00003
Proportion of males in a household	-0.00008	0.00019	-0.00007	0.00016
Proportion of adults in a household	0.03525	0.02767	0.03011	0.02368
Proportion of working household members	0.02319 *	0.01204	0.01981 *	0.01028
Proportion of household members with secondary education or higher	-0.61423 **	0.02719	-0.52458 **	0.03156
Number of observations	6,403		6,403	

Note: The independent variables used in the model are based on 1993 data.
**Significant at 1%
*Significant at 5%

[7]Single males/fathers with and without children are lumped together because of the small number of observations.

VIII. HOUSEHOLD DYNAMICS AND THE CONCEPT OF CHRONIC POVERTY

In terms of composition, households are very dynamic. Babies are born, while existing household members die. New individuals join, while existing members leave. A household can split into two or more households when a husband and his wife divorce or a child gets married and starts a new household. On the other hand, two or more households can join and merge into a new household such as when a widow and a widower get married. All of these have implications for the conceptualization and measurement of poverty.

To illustrate the complication, Table 9 shows the poverty rates for various household groups across survey rounds in the IFLS data. The first row tracks the poverty rate for the households in the complete panel which were visited in all the three rounds, replicating the numbers reported in Table 1. These numbers are always higher than the corresponding numbers in the last row, which reports the poverty rates based on all households available in the data for each round of the survey. This suggests that the panel households are poorer than the complete sample of households participated in the survey.

Table 9. Poverty Headcount Rates for Various Household Groups in the Data (%)

Household Group in the Data	Poverty Headcount (%)			N
	1993	1997	2000	
First Round Households:				
- First round households in the complete panel	23.05	14.56	15.02	6,403
- First round households visited in the second round but not visited in the third round	14.93	5.97	–	201
- First round households not visited in the second round but visited in the third round	12.07	–	10.34	232
- First round households not visited in the second and third rounds	10.00	–	–	300
- Total first round households	21.92 (N=7,136)	14.29 (N=6,604)	14.86 (N=6,635)	7,136
Second Round Households:				
- New households in the second round visited in the third round	–	8.94	11.91	705
- New households in the second round not visited in the third round	–	13.39	–	224
- Total second round households	–	10.01 (N=929)	11.91 (N=705)	929
Third Round Households:				
- New households in the third round	–	–	9.30	2,818
All Households in the Data	21.92 (N=7,136)	13.77 (N=7,533)	13.11 (N=10,158)	10,883

Source: Authors' calculations using IFLS data

The reasons for this are twofold. First, the first round households that dropped from the sample in any of the subsequent rounds are less poor compared to those that can be tracked in all of the subsequent rounds. This can be seen by comparing the poverty rates in the first row with those in the second, third, and fourth rows. This gives an indication that migrating households tend to be wealthier than those who stay in an area. Similarly, the new households that resulted from the split-off of the original first round households are also less poor compared to their original households. This can be seen by comparing the poverty rates of the total first round households (the fifth row) with those of the total second round households and the new households in the

third round. All of this suggests that the use of household as the unit of analysis for poverty may undermine, or at least complicate, the conceptualization and measurement of chronic poverty.

IX. HOUSEHOLD DYNAMICS AND SOCIAL PROTECTION

Because the chronic poor are the poorest of the poor, they constitute the most deserving beneficiaries of government social protection programs. Here social protection program is defined as any program that is intended to provide help for the poor and the vulnerable. The experiences of Indonesia as well as other developing countries show that targeting of program beneficiaries is one of the most difficult and contentious issue in the implementation of social protection programs.

As an illustration of the problem, Table 10 shows the distribution of households that participated in government social protection programs by poverty group in 2000. The table shows that for basic needs assistance, the proportions of the chronic poor and the vulnerable that reaped the benefits of this program are higher than their respective proportions in the population. However, the bulk of the benefits of this program were enjoyed by the non-poor with more than 55% of the beneficiaries of this program never having been poor. The distribution of benefits for non-basic needs assistance was even worse, with the proportions of the chronic poor and the vulnerable similar to their proportions of the population, and 69% of the beneficiaries being non-poor.

Table 10. Distribution of Households Which Participated in Government Social Protection Programs in 2000, by Poverty Group (%)

Government Program	Chronic Poor	Vulnerable	Non-poor	N
Purchased basic needs from cheap market during the last 12 months	19.36	26.00	54.64	2,608
Any assistance during the last 12 months (excluding basic needs)	13.95	17.44	68.60	258
Total panel households	14.12	20.16	65.72	6,403

Source: Authors' calculations using IFLS data

To determine whether participation in the government social protection programs is related to household dynamics, Table 11 shows the distribution of households that participated in government social protection programs by changes in household compositions. About 22% of households that participated in government social protection programs, both for basic needs and non-basic needs assistances, experienced compositional change during the period 1993–1997. This doubled to approximately 44% in the following period, 1997–2000. The remaining 34% of the distribution belongs to the households that did not experience any compositional change during the whole period of observation.

These figures are similar to the distribution of total panel households across all scenarios for compositional change in households, as shown in the last row of Table 11. This suggests that household dynamics does not seem to play a significant role in determining whether a household participates in government social protections programs.

Table 11. Distribution of Households Which Participated in Government Social Protection Programs in 2000 by Changes in Household Composition (%)

Government Program	Change in Household Composition 1993–1997	Change in Household Composition 1997–2000	No Change in Household Composition	N
Purchased basic needs from cheap market during the last 12 months	21.93	44.21	33.86	2,608
Any assistance during the last 12 months (excluding basic needs)	22.09	43.80	34.11	258
Total panel households	21.33	44.73	33.94	6,403

Source: Authors' calculations using IFLS data

To examine more rigorously whether changes in household composition affect the probability of receiving assistance from government social protection programs, Table 12 shows the results of a probit analysis of receiving assistances with respect to household poverty status, change in household composition, and other household characteristics. The table shows that in general poverty status does not have any effect on the probability of receiving assistance from government social protection programs. The only exception is that the vulnerable group has a higher probability of receiving basic needs assistance. However, the chronic poor do not have a significantly higher probability of receiving assistance than the non-poor.

Table 12. Results of a Probit Analysis of Household Participation in Government Social Protection Programs in 2000 (%)

Independent Variable	Basic Needs Assistance		Other Assistance	
	Coefficient	Std. Error	Coefficient	Std. Error
Poverty status:				
Chronic poor	0.33698	0.22719	0.12199	0.42655
Vulnerable	0.29597 **	0.10773	-0.02686	0.20418
Poor in 1993	0.03295	0.10902	-0.13284	0.20336
Poor in 1997	-0.06977	0.10596	-0.08762	0.20563
Poor in 2000	0.12706	0.10269	-0.09073	0.19605
Change in household composition:				
Change in 1993–1997	0.07934	0.04978	0.07779	0.08664
Change in 1997–2000	0.01345	0.04076	-0.00663	0.07303
Household characteristics:				
Number of household members	-0.03518 **	0.01023	0.04295 **	0.01734
Dependency ratio	0.00044 *	0.00018	-0.00041	0.00031
Proportion of male household members	0.00040	0.00097	0.00113	0.00169
Proportion of adult household members	0.13321	0.12615	0.68597 **	0.21440
Proportion of working household members	0.01125	0.06222	0.05859	0.11216
Proportion of household members with secondary education or higher	-1.45382 **	0.11014	-0.45125 *	0.19883
Number of observations	6,403		6,403	

Note: The independent variables used in the estimation are based on 1993 data.
**Significant at 1%,
*Significant at 5%

Similarly, households that experienced a change in household composition do not have a significantly different probability of receiving assistance from those that did not experience any change in household composition. This confirms the finding from the descriptive analysis that household dynamics does not play a significant role in determining whether a household participates in government social protections programs.

This finding indicates that the targeting problem in government social protection programs not only relates to implementation, but also has some conceptual roots. Identification of poor and vulnerable households is far from straightforward.

X. CONCLUSION

The findings of this study indicate that change in household composition is not a major cause of the chronic poverty phenomenon in Indonesia. Furthermore, there is no evidence that certain types of household composition change increase the probability of households to be chronically poor. On the other hand, there is no evidence either that households change their composition to cope with negative shocks.

However, the results of the analysis suggest that the larger the number of household members, the higher the probability of household being chronically poor. Comparing different types of household compositions, households containing single females without children have the lowest probability of being either chronically poor or vulnerable, while households with single males/fathers with or without children have the highest probability of being vulnerable. Finally, having a higher proportion of household members who have attended senior secondary or higher education significantly reduces the probability of a household being chronically poor or vulnerable.

Due to frequent changes in household composition, the use of household as the unit of analysis for poverty may undermine, or at least complicate, the conceptualization and measurement of chronic poverty. This also has an implication for the targeting of social protection programs because it implies that the problem in targeting not only relates to implementation, but also has some conceptual roots.

LIST OF REFERENCES

Aliber, Michael (2001) 'An Overview of the Incidence and Nature of Chronic Poverty in South Africa', *Chronic Poverty Research Centre Background Paper No. 3*, May, University of Manchester.

BPS (2005) *Analisis dan Penghitungan Tingkat Kemiskinan Tahun 2005* [The Analysis and Calculation of Poverty Rate for 2005]. Jakarta: Badan Pusat Statistik.

Bourreau-Dubois, C., Bruno Jeandidier, and Frederic Berger (2003) 'Poverty Dynamics, Family Events, Labour Market Events in Europe: Are There Any Differences between Women and Men?' Paper presented at the 2003 Conference of European Panel Users Network, 3–5 July 2003, Colchester, UK.

De Herdt, Tom (2007) 'Hiding from Regress: Poverty and Changing Household Composition in Congo-Kinshasa.' Paper presented at HiCN (Households in Conflict Network) Second Annual Workshop, 19–20 January 2007, University of Antwerp, Belgium.

Duncan, Greg J. and Martha S. Hill (1985) 'Conceptions of Longitudinal Households: Fertile or Futile?' *Journal of Economic and Social Measurement* 13 (3 and 4), 361–375.

Edmonds, E., K. Mammen, and D. Miller (2001) 'Rearranging the Family? Household Composition Responses to Large Pension Receipts.' Mimeo, Hanover, NH: Dartmouth College.

Foster, J., J. Greer, and E. Thorbecke (1984) 'A Class of Decomposable Poverty Measures.' *Econometrica* 52 (3), 761–766.

Hulme, David, Karen Moore and Andrew Shepherd (2001) 'Chronic Poverty: Meanings and Analytical Frameworks.' *Chronic Poverty Research Centre Working Paper No. 2*, IDPM, University of Manchester.

Jalan, Jyotsna and Martin Ravallion (1998) 'Determinant of Transient and Chronic Poverty: Evidence from Rural China.' *Policy Research Working Paper 1936*, Washington D.C.: Research Development Group of the World Bank.

Jenkins, Stephen P. (2000) 'Modelling Household Income Dynamics', *Journal of Population Economics* 13 (4), 529–567.

McKay, Andrew and David Lawson (2002) 'Chronic Poverty: A Review of Current Quantitative Evidence.' *Chronic Poverty Research Centre Working Paper No. 15*, IDPM, University of Manchester.

Meenakshi, J. V. and Ranjan Ray (2002) 'Impact of Household Size and Family Composition on Poverty in Rural India.' *Journal of Policy Modeling* 24 (6), 539–559.

Muyanga, M (2008) 'Household Vulnerability to Transient and Chronic Poverty: Evidence from Rural Kenya.' Paper presented in Ninth Annual Conference of Global Development Network (GDN), 29–31 January 2008, Brisbane, Australia.

Pradhan, Menno, Asep Suryahadi, Sudarno Sumarto, Lant Pritchett (2003) 'Eating Like Which "Joneses?" An Iterative Solution to the Choice of a Poverty Line "Reference Group."' *Review of Income and Wealth* 47 (4), 473–487.

Strauss, John, Kathleen Beegle, Agus Dwiyanto, Yulia Herawati, Daan Pattinasarany, Elan Satriawan, Bondan Sikoki, Sukamdi, Firman Witoelar (2004) *Indonesian Living Standards Before and After the Financial Crisis: Evidence from the Indonesia Family Life Survey*, Santa Monica, CA: RAND Corporation.

Suryahadi, Asep, Sudarno Sumarto, and Lant Pritchett (2003) 'Evolution of Poverty During the Crisis in Indonesia.' *Asian Economic Journal* 17 (3), 221–241.

Wetterberg, Anna, Sudarno Sumarto, and Lant Pritchett (1999) 'A National Snapshot of the Social Impact of Indonesia's Crisis.' *Bulletin of Indonesian Economic Studies* 35 (3), 145–152.

Woolard, Ingrid and Stephan Klasen (2005) 'Determinants of Income Mobility and Household Poverty Dynamics in South Africa.' *The Journal of Development Studies* 41 (5), 865–897.

World Bank (2001) 'Hungary: Long-Term Poverty, Social Protection, and the Labour Market, Volume 1.' *Main Report of Poverty Reduction and Economic Management (ECSPE)*, Washington D.C.: World Bank Europe and Central Asia Region.

APPENDIX

Appendix 1. Regional Poverty Lines (Monthly Rupiah Per Capita)

Province	1993[b]		1997[b]		2000[a]	
	Urban	Rural	Urban	Rural	Urban	Rural
North Sumatra	24,849	24,071	39,496	38,260	83,662	81,043
West Sumatra	24,949	22,567	36,275	32,811	87,377	79,035
South Sumatra	24,587	23,083	40,381	37,911	84,141	78,994
Lampung	26,746	23,578	41,837	36,881	89,820	79,180
Jakarta	31,551	–	54,280	–	107,766	–
West Java	32,221	28,768	45,892	40,974	95,594	85,351
Central Java	28,473	25,208	42,165	37,329	85,111	75,351
Yogyakarta	30,453	25,495	46,839	39,213	92,086	77,094
East Java	28,210	26,965	41,571	39,737	84,480	80,752
Bali	33,601	31,291	46,962	43,734	102,020	95,007
West Nusa Tenggara	26,286	27,072	38,909	40,072	85,282	87,832
South Kalimantan	28,213	24,425	42,768	37,026	89,769	77,716
South Sulawesi	27,560	25,951	40,949	38,557	87,361	82,259

Source: [a]Strauss et al. (2004)
[b]Calculated using a method developed in Suryahadi et al. (2003)