Chronic and Transient Poverty in Indonesia: A Spatial Perspective with the 2008-2010 Susenas Panel Data

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Abstract

This study analyzes poverty dynamics by region for urban and rural areas based on the 2008-2010 panel Susenas. It also conducts a probit analysis to explore the determinants of poverty based on the 2008 consumption module Susenas. We found that while 11% of rural people and 7% of urban people are chronically poor, there are a large number of transiently poor people in Indonesia. These transiently poor people have a high risk of falling into poverty occasionally. There is also a large difference in the extent of chronic and transient poverty among regions. While the government should implement policies to alleviate chronic poverty, it should at the same time introduce policies that could keep transiently poor people above the poverty line. Since there is a large regional variation in the extent of poverty, spatially differentiated poverty alleviation programs should be introduced according to the extent and nature of poverty.

Keywords: chronic and transient poverty; poverty dynamics; spatial perspective; panel data; Indonesia

JEL classification: I30, O10

1. Introduction

In formulating poverty alleviation policies, it is often necessary to distinguish people who are poor occasionally (i.e., transiently poor) from those who are poor most of the time (i.e., chronically poor), as the types of policy measures that are relevant for dealing with chronic and transient poverty would likely be different (Haughton and Khandker, 2009). When poverty is essentially a transient phenomenon, policies should focus mainly on social safety nets that help people to alleviate their present deprivation, return to a non-poor category and reduce vulnerability (Hulme and Shepherd, 2003). By contrast, when poverty is predominantly chronic, it is necessary to introduce policies that could redistribute assets, direct investment toward basic physical infrastructure, reduce social exclusion and provide long-term social security (Hulme and Shepherd, 2003).

It is thus important to analyze poverty dynamics in order to formulate policies that could effectively reduce overall poverty. Information on poverty dynamics is imperative to trace the evolution of poverty over time; it would allow us to adjust the way how to alleviate chronic and transient poverty (Haughton and Khandker, 2009). Furthermore, in a culturally and ethnically diverse country like Indonesia with more than 17,500 islands where there are large differences in economic well-being and activities between urban and rural areas and among regions, it is also necessary to examine the extent and nature of chronic and transient poverty from a spatial perspective (Miranti and Resosudarmo, 2005). The main purpose of this study is to analyze poverty dynamics in Indonesia from a spatial perspective based on the 2008-2010 panel Susenas (National Socio-Economic Survey). The study estimates the incidence of chronic (persistent and non-persistent) and transient poverty for the period from 2008-2010. It also conducts a probit analysis to explore the determinants of poverty based on the 2008 consumption module Susenas.

A number of studies have been conducted to analyze poverty in Indonesia[1]; but, most studies focused on its static aspects and estimated the extent of poverty at a given point in

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[1] See, for example, Huppi and Ravallion (1991), Bidani and Ravallion (1993), Booth (1993, 2000), Asra (2000), Skoufias, Suryahadi and Sumarto (2000), Friedman and Levinsohn (2002), Alisjahbana and Yusuf (2003), Balisacan, Pernia and Asra (2003), Fields, Cichello, Freijec, Menéndezd, and Newhousee (2003a, 2003b), Suryahadi and Sumarto (2003), Suryahadi, Sumarto and Pritchett (2003), Miranti and Resosudarmo (2005), Sumarto, Suryahadi and Widyanti (2005), Ravallion and Lokshin (2007), Bird and Manning (2008), Widyanti, Suryahadi, Sumarto and Yumna (2009), Miranti (2010), Sumner (2012), Suryahadia, Hadiwidjaja and Sumarto (2012), Dartanto and Nurkholis (2013)

time. Among these studies, the following articles examined poverty dynamics using panel data sets: Alisjahbana and Yusuf (2003), Sumarto, Suryahadi and Widyanti (2005), Widyanti, Suryahadi, Sumarto, and Yumna (2009) and Dartanto and Nurkholis (2013). Based on consumption expenditure panel data from the Indonesian Family Life Survey (IFLS) in 1993 and 1997 conducted by the Rand Corporation[2], Alisjahbana and Yusuf (2003) explored factors of chronic and transient poverty in urban and rural areas by using the multinomial logit model. Sumarto, Suryahadi and Widyanti (2005) used panel data from the four rounds of the 100 Village Survey, conducted by the Central Bureau of Statistics in the post-crisis period between August 1998 and October 1999, to analyze the effects of various social safety net programs such as subsidized rice, employment creation, scholarships, free or subsidized medical services, and community empowerment, on poverty dynamics.

Widyanti, Suryahadi, Sumarto, and Yumna (2009) utilized panel data from the three rounds of IFLS in 1993, 1997 and 2000, to investigate the effect of changes in household composition on poverty dynamics. It also performed an ordered probit analysis to explore the determinants of chronic poverty and vulnerability.[3] Dartanto and Nurkholis (2013) appear to be the first study that used a Susenas panel data set compiled by the Central Bureau of Statistics. Based on the 2005-2007 panel Susenas, they analyzed poverty dynamics. After classifying households into four categories: chronically poor, transiently poor (-), transiently poor (+) and never poor, they conducted an ordered probit analysis to explore the determinants of poverty dynamics.[4]

Our study is considered to be a continuation of the study by Dartanto and Nurkholis (2013). Its main features are as follows. First, it uses the 2008-2010 panel Susenas, for the first time, to analyze poverty dynamics by urban and rural locations in each region (Sumatra, Java-Bali, Kalimantan, Sulawesi and Others). Second, it classifies the poor population into three categories in terms of the extent and nature of poverty: persistently poor (among the chronically poor); non-persistently poor (among the chronically poor);

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[2] About 6,700 households in the 1993 sample have been re-interviewed in the 1997 IFLS.
[3] Widyanti, Suryahadi, Sumarto, and Yumna (2009) used the term 'vulnerability' to refer to transient poverty.
[4] Dartanto and Nurkholis (2013) defined the transiently poor (-) as those households who were non-poor in 2005, but fell into poverty in 2007 and the transiently poor (+) as those who were poor in 2005, but escaped from poverty in 2007. On the other hand, the chronically poor are those households who were poor in both 2005 and 2007.

and transiently poor.[5] Third, unlike Alisjahbana and Yusuf (2003), Widyanti, Suryahadi, Sumarto, and Yumna (2009) and Dartanto and Nurkholis (2013) where the incidence of poverty is measured at the household level, our study estimates the extent of poverty at the individual level by using individual sample weights. Fourth, it conducts a sensitivity analysis to examine the effect of changes in the poverty line on the incidence of poverty. Fifth, it explores the determinants of poverty by urban and rural locations based on the 2008 consumption module Susenas, which has a much larger sample size than the 2008-2010 panel Susenas.

2. Data and Method

2.1. Data

This study uses the panel Susenas (National Socio-Economic Survey) for the period from 2008-2010 to analyze poverty dynamics (BPS, 2007). Panel Susenas was introduced in 2002 to examine poverty dynamics for three consecutive years. The first and second rounds of panel Susenas were conducted, respectively, for the period from 2002-2004 and from 2005-2007; these surveys were based on a sample of around 10,000 households selected, respectively, from the 2002 and 2005 consumption module Susenas. The 2008-2010 panel Susenas, conducted in March in each of 2008, 2009 and 2010, is thus the third round of panel Susenas. It is based on a sample of households chosen from the 2008 consumption module Susenas. Its sample size at 60,947 households is much larger than the sample sizes of the previous panel surveys; thus, we could analyze poverty dynamics at the provincial level.

Table 1 presents the geographical distribution of households in the sample, where 33 provinces are grouped into the following 5 regions: Sumatra; Java-Bali; Kalimantan; Sulawesi and Others.[6] It also shows the geographical distribution of people and mean per capita expenditure by region, which are estimated using sample weights. Urban households

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[5] These categories are defined in the next section. Persistently poor households (among the chronically poor) in our study are equivalent to chronically poor households in Dartanto and Nurkholis (2013). Most previous studies on poverty dynamics have classified non-persistently poor households (among the chronically poor) into the transiently poor category.

[6] The classification of provinces is as follows: Sumatra (Aceh, N. Sumatra, W. Sumatra, Riau, Jambi, S. Sumatra, Bengkulu, Lampung, Bangka Belitung, Kepulauan Riau); Java-Bali (Jakarta, W. Java, C. Java, Yogyakarta, E. Java, Banten, Bali); Kalimantan (W. Kalimantan, C. Kalimantan, S. Kalimantan, E. Kalimantan); Sulawesi (N. Sulawesi, C. Sulawesi, S. Sulawesi, S. E. Sulawesi, Gorontalo, W. Sulawesi); and Others (W. Nusa Tenggara, E. Nusa Tenggara, Maluku, Maluku Utara, W. Papua, Papua).

appear to be underrepresented in the sample with 39%, compared to an estimated 48% of people in Indonesia. Households in Java-Bali also seem to be underrepresented in the sample with 48% (23% + 25%), compared to an estimated 60% (34% + 26%) of people in Indonesia.

Table 1

Mean per capita expenditure is much higher in the urban than in the rural sector. The urban-rural ratio in mean per capita expenditure is 1.73 and 1.75 in 2008 and 2010, respectively. According to Hayashi, Kataoka and Akita (2012), the urban-rural disparity accounts for 16% of total expenditure inequality in 2008 and 2010 by the Theil L index. In both urban and rural sectors, Kalimantan has the highest mean per capita expenditure, which is followed by Sumatra and Java-Bali in 2008. But, Sulawesi's mean per capita expenditure rose sharply during the 2008-2010 period with the growth rates of 27% and 21% in the urban and rural sectors, respectively. In the urban sector, it exceeds Sumatra's and Java-Bali's mean per capita expenditure in 2010.

This study also uses the consumption module Susenas for 2008 to explore the determinants of poverty in the urban and rural sectors separately, since it has a much larger sample size than the 2008-2010 panel Susenas. Nationwide consumption module Susenas has been conducted every three years since the 1980s to collect data on consumption expenditures. There are two kinds of expenditure items in the consumption module Susenas: food and nonfood items. There are around 200 items in the food category and around 100 items in the nonfood category. The 2008 Susenas, which was conducted in June 2008, has a sample size of 282,387 households, of which 36% are in the urban sector. Like the 2008-2010 panel Susenas, urban households are underrepresented in the module Susenas. The sample size is much larger than the sample sizes of the previous consumption module Susenas, which are around 60,000 households. It should be noted that since this study relies extensively on household expenditure data from these Susenas, our results are subject to the reliability of the Susenas data.

To measure poverty, this study employs the provincial poverty lines for rural and urban areas, which have been constructed by the Central Bureau of Statistics (BPS, 2010). The cost of basic needs approach has been used to construct these poverty lines (BPS, 2009). Each poverty line is the sum of food and non-food poverty lines. A food poverty line is defined as the minimum expenditure necessary to consume a basket of food items

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which satisfies 2,100 kilocalories per person per day. 52 food items are included in the basket, including rice, fish, meat, vegetables, fruit, etc. On the other hand, a non-food poverty line is defined as the amount of expenditure required to obtain the minimum level of housing, clothing, education and health. 51 and 47 non-food items are included in the construction of the non-food poverty line in urban and rural areas, respectively. It should be noted that to analyze poverty dynamics for the 2008-2010 period, this study converts current price expenditures into expenditures at 2008 constant prices by using current price provincial urban and rural poverty lines in 2008, 2009 and 2010.

2.2. Method

2.2.1. Poverty Measures

To measure the level of poverty, this study employs the P_α class of poverty measures. Since it was introduced by Foster, Greer and Thorbecke (1984), it is known as the FGT indices. Suppose that all individuals in a sample are arranged in ascending order of per capita expenditure, where each individual in a household is assumed to have its per capita expenditure. Then, the FGT indices are defined by:

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z - y_i}{z}\right)^\alpha \tag{1}$$

where $n, q, z, \alpha,$ and y_i are, respectively, the total number of people, the total number of poor people, the poverty line, the parameter of poverty aversion and the per capita expenditure of individual i, and $y_i < z$ for $i = 1, 2, \cdots, q$.

The parameter of poverty aversion α measures the sensitivity to poverty. If $\alpha = 0, 1,$ and 2, equation (1) becomes, respectively,

$$P_0 = \frac{q}{n}, \quad P_1 = \frac{q}{n}\bar{I} \quad \text{and} \quad P_2 = \frac{q}{n}\left(\bar{I}^2 + (1-\bar{I})^2 C_p^2\right). \tag{2}$$

$\bar{y}_p = \frac{1}{q}\sum_{i=1}^{q} y_i$ is the average per capita expenditure of the poor and $\bar{I} = \frac{z - \bar{y}_p}{z}$ is the average (normalized) expenditure shortfall among the poor, whereas $C_p^2 = \frac{1}{\bar{y}_p^2}\frac{1}{q}\sum_{i=1}^{q}(y_i - \bar{y}_p)^2$ is the squared coefficient of variation, which measures inequality among the poor. These poverty measures are called, respectively, the poverty headcount

ratio, the poverty gap index, and the poverty severity index (or the squared poverty gap index). All of them satisfy the principles of anonymity and population homogeneity. Furthermore, the poverty gap index satisfies the principle of strong monotonicity, while the poverty severity index satisfies the principle of distributional sensitivity in addition to strong monotonicity.

2.2.2. Poverty Dynamics: Chronic (Persistent/Non-persistent) and Transient Poverty

With the Susenas panel data set for the period from 2008-2010, we are able to analyze poverty dynamics during the period. According to Haughton and Khandker (2009), the *chronically* poor are those whose average per capita expenditure over the period is at or below the poverty line, while the *transiently* poor are those whose average per capita expenditure is above the poverty line, though they are poor from time to time. Among the *chronically* poor, some are *persistently* poor. They are those whose per capita expenditure never exceeds the poverty line in the period. Finally, the *never* poor are those whose per capita expenditure never falls below the poverty line in the period. Individuals are thus classified into four mutually exclusive and collectively exhaustive groups: (1) the *chronically* and *persistently* poor; (2) the *chronically*, but not *persistently* poor; (3) the *transiently* poor; and (4) the *never* poor.[7]

Let y_{it}, $\bar{y}_i$, and z be, respectively, per capita expenditure of individual i in year t ($t = 1$, 2, …, T), average per capita expenditure of individual i, and the poverty line which is constant in the study period for each individual, where y_{it} is measured at the 2008 constant price and $\bar{y}_i = \dfrac{1}{T}\sum_{t=1}^{T} y_{it}$ (in this study, $T = 3$). Suppose that $p(y_{it}|z)$ measures the poverty of individual i in year t, where $p(y_{it}|z) = 0$ if $y_{it} \geq z$ and $p(y_{it}|z) > 0$ if $y_{it} < z$. Then individual i is *chronically* poor if $p(\bar{y}_i|z) > 0$, while it is *transiently* poor if $p(\bar{y}_i|z) = 0$, but $p(y_{it}|z) > 0$ for some t. Among the *chronically* poor, individual i is *persistently* poor if $p(y_{it}|z) > 0$ for all t, while it is not *persistently* poor if $p(y_{it}|z) = 0$

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[7] Hulme and Shepherd (2003) proposed a five-tier categorization: always poor; usually poor; churning poor; occasionally poor; and never poor. These categories are aggregated into the chronically poor (always poor and usually poor), the transiently poor (churning poor and occasionally poor) and the never poor. In our study, the chronically poor category includes the always poor, the usually poor and the churning poor, where the persistently poor category corresponds to the always poor, while the transiently poor category includes only the occasionally poor.

for some t. Finally individual i is *never* poor if $p(y_{it}|z) = 0$ for all t (thus, $p(\bar{y}_i|z) = 0$). In the case of the P_α class of poverty measures, $p(y_{it}|z) = \left(\dfrac{z - y_{it}}{z}\right)_+^\alpha$ where

$$\left(\frac{z - y_{it}}{z}\right)_+^\alpha = 0 \text{ if } y_{it} \geq z \text{ and } \left(\frac{z - y_{it}}{z}\right)_+^\alpha = \left(\frac{z - y_{it}}{z}\right)^\alpha \text{ if } y_{it} < z.$$

2.2.3. Determinants of Poverty: Probit Analysis

With the 2008 consumption module Susenas data set, this study explores the determinants of poverty in Indonesia using the probit model. Let us define a binary dependent variable as follows:

$$I = \begin{cases} 1 & \text{if } y \leq z \\ 0 & \text{if } y > z \end{cases} \tag{5}$$

where y and z are, respectively, per capita expenditure of a household and the poverty line. In other words, if a household is poor, then $I = 1$, while a household is not poor, then $I = 0$. A regression model is next formed by parameterizing the probability of $I = 1$ to depend on a vector of household characteristics x and a vector of parameters associated with household characteristics β. The binary outcome model can now be written as:

$$\Pr[I = 1 | x] = F(z - x'\beta) \tag{6}$$

If we assume that $F(\cdot)$ is the standard normal cumulative distribution function (cdf), then the binary model in equation (6) is the probit model, while if $F(\cdot)$ is the cdf of the logistic function, then the binary model is the logit model. With the 2008 Susenas data set, this study estimates the probit model by the maximum likelihood method.

3. Results

3.1. Extent of Poverty

Table 2 presents the extent of poverty in 2008 and 2010, as measured by the headcount ratio (P_0), the poverty gap index (P_1), and the poverty severity index (P_2).[8] It also reports the average expenditure shortfall ($\bar{I}$) and the coefficient of variation (as a measure of

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[8] The 95% confidence interval for the poverty index is estimated based on the bootstrap standard error.

expenditure inequality) among the poor. In the study period, the extent of poverty has been reduced significantly. The headcount ratio, i.e., the proportion of the population that is poor, has declined from 15.2% to 13.1%, meaning that the number of poor people has decreased from 32.4 million to 28.6 million people. It should be noted that both the average expenditure shortfall and the coefficient of variation among the poor have declined also, i.e., the extent of poverty has been less deep and severe in 2010. This is in contrast to an increasing trend of overall expenditure inequality among Indonesian people in the period (Hayashi, Kataoka and Akita, 2012). According to inequality decomposition by poor and non-poor households based on the Theil indices, this rising overall inequality is attributable to an increase in inequality among the non-poor. Disparity between poor and non-poor households has, in fact, declined slightly.

<p align="center">Table 2</p>

The extent of poverty varies substantially between urban and rural areas and among regions. The rural sector has a much larger extent of poverty than the urban sector; in 2008, 18.5% of rural people are poor, compared to 11.7% of urban people, implying that about 63% of the poor are in the rural sector (20.5 million in rural areas vs. 11.9 million in urban areas). Despite a significant decrease in the extent of overall poverty in the study period, the incidence of poverty is still high in the rural sector at 16.1% in 2010, accounting for 64% of the poor in Indonesia (18.3 million in rural areas vs. 10.3 million in urban areas). It is interesting to note that the urban and rural sectors have almost the same average expenditure shortfall and the coefficient of variation among the poor, indicating that they have a similar level of poverty depth and severity among the poor.

Tables 3 and 4 report the extent of poverty by region, respectively, in the urban and rural sectors. In urban areas, Others has the largest amount of poverty, which is followed by Sumatra and Java-Bali. Sulawesi and Kalimantan have almost the same, but much smaller extent of poverty than the other three regions. Since 70% of urban people are in Java-Bali, 69% of urban poor are in this region. Sumatra accounts for 20% of urban poor, which is compared to its urban population share of about 17%, meaning that almost 90% of urban poor are in these two regions. Due to its very large incidence of poverty, Others account for 6% of the urban poor. Over the study period, Sumatra, Java-Bali and Kalimantan have reduced their urban poverty significantly. Sulawesi and Others have also lowered their poverty incidence, but not significantly.

<p align="center">8</p>

<u>Tables 3 and 4</u>

It should be noted that Others has relatively large average expenditure shortfall and coefficient of variation among the poor, which remain constant over the study period. Its average per capita expenditure among the poor is almost 20% smaller than the poverty line, which is much larger than the values in the other 4 regions. Others' poverty is not only deep but also severe. On the other hand, Sulawesi has reduced its average expenditure shortfall and coefficient of variation significantly. In 2010, its average per capita expenditure among the poor is 14% smaller than the poverty line, which is the smallest among the 5 regions in urban areas.

In all regions, rural people have significantly higher poverty rates than urban people. In rural areas, Others again has the largest extent of poverty, which is followed by Java-Bali, Sulawesi, Sumatra and Kalimantan. Java-Bali accommodates more than half of the rural poor due to its large rural population share, while Sumatra accounts for around 21% of the rural poor. Due to its very large incidence of poverty, Others accommodates 12% of the rural poor. It is interesting to note that rural Sulawesi has a much higher poverty rate than urban Sulawesi; in 2008, more than 18% of rural people are under the poverty line in Sulawesi, which accounts for 10% of the rural poor. All but Kalimantan have lowered their amount of poverty significantly during the study period. However, in 2010 a quarter of rural people are still under the poverty line in Others, while more than 16% of rural people are poor in Java-Bali and Sulawesi.

Like in urban areas, Others has relatively large average expenditure shortfall and coefficient of variation among the poor, and these remain constant over the study period. Its average per capita expenditure among the poor is 20% smaller than the poverty line, while its coefficient of variation at 0.15 is much larger than the ones in the other 4 regions. This implies that like urban areas, rural poverty in Others is also very deep and severe. On the other hand, rural Kalimantan has relatively small average expenditure shortfall and coefficient of variation among the poor. It should be noted that rural Sulawesi has not only a high incidence of poverty but also relatively large average expenditure shortfall and coefficient of variation among the poor.

3.2. Chronic and Transient Poverty

Tables 5 and 6 present the extent of chronic and transient poverty in the urban and rural sectors. 6.9% of urban people, i.e., about 7.0 million people are chronically poor, of which

3.1 million are persistently poor. On the other hand, 10.8% of rural people, i.e., 11.9 million people are chronically poor, of which 5.1 million are persistently poor. There are, however, a large number of transiently poor people in both urban and rural areas. In the urban sector, 12.5%, i.e., 12.8 million people are transiently poor, while in the rural sector, 20.7%, i.e., 22.9 million people are transiently poor, indicating that a large number of people, particularly rural people, are vulnerable to poverty, i.e., have their per capita expenditures very close to the poverty line. According to Table 7, which presents a poverty transition matrix between 2008 and 2010, 5.5 million non-poor urban people and 10.1 million non-poor rural people in 2008 have become poor in 2010 (5.2% of urban total and 8.9% of rural total), whereas 6.6 million poor urban people and 11.4 million poor rural people have escaped from poverty in 2010 (6.3% of urban total and 10% of rural total).

<div align="center">Tables 5, 6 and 7</div>

In urban areas, Others has the largest incidence of chronic poverty at 13.9%, which is followed by Sumatra at 7.8%, and Java-Bali at 6.8% (Table 5). Among the chronically poor, 55% are persistently poor in Others, while in Sumatra and Java-Bali, the proportion is less than half. Others also has the largest incidence of transient poverty at 15.9% in urban areas, which is again followed by Sumatra at 14.6% and Java-Bali at 12.4%. Table 8 presents a poverty transition matrix by region in the urban and rural sectors. In urban Others, 0.28 million people, who were not poor in 2008, have become poor in 2010 (7.6% of urban total), whereas in Sumatra, 1.1 million non-poor people have become poor in 2010 (6.0% of urban total). In Others, about 30%, i.e., 1.1 million urban people are either chronically or transiently poor, while in Sumatra and Java-Bali, the incidence of total (i.e., chronic plus transient) poverty is, respectively, 22.4% and 19.3% in the urban sector.

<div align="center">Table 8</div>

In all regions, the rural sector has a much larger incidence of chronic and transient poverty than the urban sector. Others has the largest incidence of chronic poverty at 18.9%. In rural areas, however, it is followed by Java-Bali at 11.5% and Sulawesi at 10.9%. In Others, out of 1.65 million chronically poor people, 0.8 million, i.e., 9.1% of rural people are persistently poor, which is very high compared to other regions. According to Table 6, 9.7% of the persistently poor are located in rural Others, which is compared to Others' rural population share of 4.1%. Rural Java-Bali also has a high incidence of persistent poverty; it accounts for 34.0% of the persistently poor. It should be noted that rural

Sumatra has a relatively low incidence of persistent poverty at 3.3%. This is in contrast to urban Sumatra, which registers 3.7%.

In all regions but Kalimantan, the incidence of transient poverty exceeds 20% in rural areas. This indicates that a large number of rural people are vulnerable to poverty in most regions. Particularly, rural Others has a very high incidence of transient poverty at 25.4%. According to Table 8, in rural Others, 1.06 million people, who were not poor in 2008, have become poor in 2010 (11.9% of rural total), though 1.13 million people have moved out of poverty. In Others, almost 45%, i.e., 3.9 million rural people are either chronically or transiently poor, while in Java-Bali, Sulawesi and Sumatra, the incidence of total (i.e., chronic and transient) poverty is 32.4%, 31.7% and 28.6%, respectively, in the rural sector.

According to Table 9, which presents a sensitivity analysis, an increase in the poverty line would raise the incidence of poverty substantially. A 10% increase in the poverty line will raise the incidence of poverty in 2010 by 3.8 and 6.8 percentage points in the urban and rural sectors, respectively, while a 20% increase will raise the poverty incidence by 8.2 and 13.7 percentage points. If the poverty line were 20% higher than the current level, then 8.6 and 15.5 million more people would be poor in the urban and rural sectors, respectively (from 10.3 and 18.3 million). In Others, the incidence of poverty will results in 29% and 40% in the urban and rural sectors, respectively, while in rural Java-Bali and rural Sulawesi, it will be higher than 30%. This confirms the existence of a large number of transiently poor people, particularly in rural areas.

<div align="center">Table 9</div>

3.3. Factors of Poverty: Probit Analysis

To explore the factors of poverty in each of the urban and rural sectors, a probit analysis is conducted using expenditure data from the 2008 consumption module Susenas, in which the following independent variables are considered as household characteristics: (1) age of household head (*age*); (2) years of education of household head (*edyear*); (3) household size (*h_size*); (4) gender of household head (*d_gender* = 1 if male); (5) location (reference region = Kalimantan: *d_sum* = 1 if Sumatra; *d_jvb* = 1 if Java-Bali; *d_sul* = 1 if Sulawesi; *d_oth* = 1 if Others); (6) employment status of household head (*d_unemploy* = 1 if unemployed); and (6) occupation of household head (reference category = manufacturing/transportation: *d_agr* = 1 if agriculture; *d_mcn* = 1 if mining & construction; *d_egw* = 1 if electricity, gas & water; *d_tsc* = 1 if trade & services; *d_fnc* = 1

if finance).

Table 10 exhibits the poverty headcount ratio (the incidence of poverty) by age, education, household size and gender in the urban and rural sectors. There seems to be a cubic relationship between age and the incidence of poverty. Household heads less than 30 years old have the lowest incidence of poverty in both urban and rural areas, but the incidence of poverty increases as household heads get old and reaches a peak when they become 35-39 years old. After it decreases, it again increases when they become 65 years old in the urban sector and 55 years old in the rural sector. On the other hand, in both urban and rural areas, the incidence of poverty is negatively associated with education, i.e., it decreases as household heads attain more education. It should be noted that in the urban sector, households whose heads have no education have a very high incidence of poverty at 21%, which is compared to 20% in the rural sector. In other educational categories, the incidence of poverty is higher in the rural than in the urban sector. The incidence of poverty is positively associated with the size of household in both urban and rural areas, i.e., it rises as the size of household gets larger. Finally, female headed households have a slightly larger incidence of poverty than male headed households in both urban and rural areas.

Table 10

Table 11 presents the result of the probit analysis. Based on the observations from Table 10, quadratic and cubic terms are included in the probit model in the case of age, while in the case of the years of education, a quadratic term is included. Almost all the coefficients have the expected sign in both urban and rural sectors. In the urban sector, except the coefficients of the dummy variables for Sulawesi and unemployment, all the coefficients are significant at either 1% or 5 % significance level, while in the rural sector, except the coefficient of the dummy variable for the electricity, gas and water industry, all the coefficients are significant at either 1% or 5 % significance level.

Table 11

As expected, the probability of being poor is negatively associated with education and gender (female = 0; male = 1) in both urban and rural sectors, while it is positively associated with the size of household. According to the marginal effect at the mean, 1 year increase in the number of years of education would reduce the probability of being poor by 0.5 and 0.8 percentage points in the urban and rural sectors, respectively, with all other

things being equal. On the other hand, an increase in the size of household by 1 person would raise the probability of being poor by 1.8 and 4.0 percentage points in the urban and rural sectors, respectively. Female headed households have 3.2 percentage points higher probability of being poor in the rural sector.

It should be noted that in the urban sector, the coefficient of the dummy variable for unemployment is not statistically significant and does not have the expected sign. This indicates that there are two or more income earners in many urban households and thus whether household head is employed or not does not have much bearing on the probability of being poor. In the urban sector, households whose heads are engaged in agriculture tend to have a higher probability of being poor, while those whose heads are in the utilities sector and the trade, services and finance sectors tend to have a lower chance of being poor. In the urban sector, about 40% of households are engaged in either trade or services sectors, compared to 12% in agriculture.

Unlike the urban sector, the coefficient of the dummy variable for unemployment is statistically significant and has the expected sign in the rural sector. Rural households whose heads are unemployed have a higher chance of being poor, suggesting that household head is the main income earner in many rural households. Like the urban sector, rural households whose heads are engaged in agriculture tend to have a higher probability of being poor, while those whose heads are in the trade, service and finance sectors tend to have a lower chance of being poor. It should be noted that more than 55% of rural households are engaged in agriculture, compared to 17% in the trade and services sectors. To reduce poverty in rural areas, agricultural productivity needs to be raised, but at the same time labor-intensive services and manufacturing sectors should be promoted (Suryahadia, Hadiwidjaja and Sumarto, 2012).

4. Concluding Remarks

According to the 2008-2010 panel Susenas, the extent of poverty has decreased significantly in Indonesia. The poverty headcount ratio has declined from 15.2% to 13.1%. This has been accompanied by a fall in the average shortfall from the poverty line and the coefficient of variation among the poor; thus, poverty has been less deep and severe. However, the extent of poverty varies substantially between urban and rural areas and among regions. Despite a significant decrease in the extent of poverty, the poverty

incidence is still high in rural areas at 16% in 2010, which is compared to 10% in urban areas. The rural sector accounts for 64% of the poor. There is also a large variation in poverty rate among regions. While Kalimantan resisters a relatively low poverty rate in both urban and rural areas, about a quarter of rural people are still under the poverty line in Others (including less developed eastern provinces). In Java-Bali and Sulawesi, there is a large difference in the incidence of poverty between urban and rural areas.

Although the aggregate poverty rate has declined steadily, some people have become poor, while some other people have escaped from poverty, and a large number of people still live around the poverty line. Against this background, this study has attempted to analyze poverty dynamics (chronic and transient poverty) by region for urban and rural areas based on the 2008-2010 panel Susenas. We found that 11% of rural people, i.e., 11.9 million people are chronically poor, of which 5.1 million suffer from persistent poverty, while in urban areas, 7%, i.e., 7.0 million people are chronically poor, of which 3.1 million are persistently poor. A surprising fact is that 21% of rural people (22.9 million) and 13% of urban people (12.8 million) are transiently poor, indicating that a large number of people, particularly rural people, are vulnerable to poverty. Though their average expenditures over the three-year period exceed the poverty line, they live very close to the poverty line and thus have a high risk of falling into poverty occasionally. This observation is confirmed by a poverty transition matrix and a sensitivity analysis with respect to the poverty line. According to the sensitivity analysis, a 10% increase in the poverty line will raise the incidence of poverty by 4 and 7 percentage points in the urban and rural sectors, respectively, meaning that 4.0 and 7.6 million more people would become poor if the poverty line were 10% higher (from 10.3 and 18.3 million people in 2010). The extent of poverty is thus very sensitive to the change in the poverty line.

In all regions, the rural sector has a much larger incidence of chronic and transient poverty than the urban sector. In rural areas, Others has the largest incidence of chronic poverty at 19%, which is followed by Java-Bali, Sulawesi, Sumatra and Kalimantan. On the other hand, the incidence of transient poverty exceeds 20% in all regions except Kalimantan. In Others, almost 45% of rural people are either chronically or transiently poor, while in Java-Bali, Sulawesi and Sumatra, the incidence of total (i.e., chronic plus transient) poverty is around 30% in rural areas. Others also has the largest incidence of chronic poverty in urban areas, which is followed by Sumatra, Java-Bali, Sulawesi and

Kalimantan. In Others, around a half of the chronically poor are persistently poor, indicating that poverty in Others is very severe in both rural and urban areas. While Others has the highest incidence of transient poverty in urban areas, urban Sumatra and urban Java-Bali register a relatively high incidence of transient poverty. It should be noted that despite its small population size, Others accounts for 11% of the chronically poor. On the other hand, due to its large population size, about 60% of the chronically poor are located in Java-Bali.

To explore the determinants of poverty, this study has performed a probit analysis based on the 2008 consumption module Susenas for urban and rural areas. Age, education, and household size appear to be significant factors of poverty for both urban and rural areas. This conforms to the results by Dartanto and Nurkholis (2013), though our method is different from theirs (probit vs. ordered probit). According to the marginal effect at the mean, 1 year increase in the number of years of education would reduce the probability of being poor by 0.5 and 0.8 percentage points in the urban and rural sectors, respectively, while an increase in the size of household by 1 person would raise the probability of being poor by 1.8 and 4.0 percentage points. In both urban and rural areas, households whose heads are engaged in agriculture tend to have a higher probability of being poor, while those whose heads are in the trade, services and finance sectors tend to have a lower chance of being poor. It should be noted that rural households whose heads are unemployed have a higher chance of being poor, suggesting that household head is the main income earner in many rural households. But no such relationship exists for urban households.

According to the 2008-2010 panel Susenas, 9% of Indonesian people are chronically poor; but almost twice as many people are in the category of transient poverty. These transiently poor people are very vulnerable to poverty. Even a small negative shock could bring them back to poverty. While the government should implement policies that could redistribute assets, direct investment to basic public infrastructure and provide long-term social security in order to alleviate chronic and persistent poverty, it should at the same time introduce policies, such as social safety net programs, that could keep transiently poor people above the poverty line. Since there is a large variation in the extent of poverty between urban and rural areas and among regions, spatially differentiated poverty alleviation programs should be introduced according to the extent and nature of poverty.

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Table 1

Sample Size, Estimated Number of People and Mean Per Capita Expenditure

| | | Sample Size | | 2008 | | | 2010 | | | % Change in Mean PCE |
| | | | | Estimated No of People (in 1,000) | | Mean PCE | Estimated No of People (in 1,000) | | Mean PCE | |
	Region	Value	% Share	Value	% Share		Value	% Share		2008-2010
Urban	Sumatra	4,543	7.5	17,047	8.0	495.5	18,256	8.4	553.2	11.6
	Java-Bali	14,216	23.3	71,660	33.7	486.9	72,863	33.4	536.0	10.1
	Kalimantan	1,821	3.0	4,867	2.3	580.7	5,124	2.3	674.4	16.1
	Sulawesi	1,606	2.6	4,790	2.3	441.5	4,967	2.3	561.2	27.1
	Others	1,504	2.5	3,588	1.7	437.3	3,674	1.7	503.0	15.0
	Sub-total	23,690	38.9	101,951	48.0	488.9	104,884	48.0	545.8	11.6
Rural	Sumatra	9,654	15.8	27,299	12.8	330.8	28,379	13.0	350.6	6.0
	Java-Bali	15,200	24.9	56,230	26.5	263.4	57,202	26.2	290.0	10.1
	Kalimantan	3,561	5.8	7,446	3.5	343.1	7,899	3.6	371.3	8.2
	Sulawesi	4,635	7.6	10,871	5.1	256.5	11,173	5.1	309.4	20.6
	Others	4,207	6.9	8,771	4.1	246.5	8,914	4.1	290.0	17.7
	Sub-total	37,257	61.1	110,616	52.0	283.4	113,566	52.0	312.7	10.3
Total		60,947	100.0	212,568	100.0	382.0	218,451	100.0	424.6	11.2

(Note) PCE is per capita expenditure (in 1,000 Rupiah).
(Source) Authors' calculations based on *Susenas* data.

Table 2

Head Count Ratio (P0), Poverty Gap Index (P1), and Poverty Severity Index (P2)

| | | 2008 | | | | 2010 | | | |
		Estimate	95% Conf. Interval		No. of Poor People (in 1,000)	Estimate	95% Conf. Interval		No. of Poor People (in 1,000)
P0	Urban	11.7	11.2	12.2	11,902	9.8	9.3	10.3	10,302
	Rural	18.5	18.0	19.0	20,485	16.1	15.7	16.6	18,337
	Total	15.2	14.9	15.6	32,387	13.1	12.8	13.4	28,639
P1	Urban	2.0	1.9	2.2		1.5	1.4	1.6	
	Rural	3.3	3.2	3.4		2.7	2.6	2.8	
	Total	2.7	2.6	2.8		2.1	2.1	2.2	
P2	Urban	0.6	0.5	0.6		0.4	0.4	0.4	
	Rural	0.9	0.9	0.9		0.7	0.7	0.7	
	Total	0.7	0.7	0.8		0.6	0.5	0.6	
Average Shortfall	Urban	17.6				15.7			
	Rural	17.7				16.6			
	Total	17.6				16.3			
CV	Urban	0.130				0.124			
	Rural	0.133				0.128			
	Total	0.158				0.150			

(Note) P0, P1 and P2 are all in 100. Average Shortfall and CV are, respectively, the average expenditure shortfall among the poor (in %) and the coefficient of variation among the poor.
(Source) Authors' calculations based on *Susenas* data.

Table 3

Head Count Ratio (P0), Poverty Gap Index (P1), and Poverty Severity Index (P2) by Region in Urban Areas

| | | 2008 | | | | 2010 | | | |
		Estimate	95% Conf. Interval		No. of Poor People (in 1,000)	Estimate	95% Conf. Interval		No. of Poor People (in 1,000)
P0	Sumatra	13.8	12.6	15.1	2,359	11.4	10.2	12.6	2,082
	Java-Bali	11.4	10.8	12.1	8,173	9.7	9.1	10.3	7,049
	Kalimantan	6.7	5.3	8.0	325	4.2	3.1	5.3	216
	Sulawesi	7.0	5.4	8.5	334	6.1	4.7	7.5	302
	Others	19.8	17.4	22.2	710	17.8	15.5	20.0	653
	Total	11.7	11.2	12.2	11,902	9.8	9.3	10.3	10,302
P1	Sumatra	2.5	2.2	2.8		1.9	1.6	2.1	
	Java-Bali	2.0	1.8	2.1		1.5	1.4	1.6	
	Kalimantan	1.1	0.8	1.4		0.6	0.4	0.8	
	Sulawesi	1.2	0.9	1.6		0.9	0.6	1.1	
	Others	3.9	3.3	4.5		3.4	2.9	4.0	
	Total	2.0	1.9	2.2		1.5	1.4	1.6	
P2	Sumatra	0.7	0.6	0.8		0.5	0.4	0.6	
	Java-Bali	0.5	0.5	0.6		0.4	0.3	0.4	
	Kalimantan	0.3	0.2	0.4		0.1	0.1	0.2	
	Sulawesi	0.3	0.2	0.5		0.2	0.1	0.3	
	Others	1.1	0.9	1.3		1.0	0.8	1.2	
	Total	0.6	0.5	0.6		0.4	0.4	0.4	
Average Shortfall	Sumatra	18.2				16.3			
	Java-Bali	17.2				15.3			
	Kalimantan	16.5				14.7			
	Sulawesi	17.4				14.0			
	Others	19.5				19.3			
	Total	17.6				15.7			
CV	Sumatra	0.132				0.125			
	Java-Bali	0.128				0.123			
	Kalimantan	0.125				0.113			
	Sulawesi	0.136				0.119			
	Others	0.135				0.132			
	Total	0.130				0.124			

(Note) P0, P1 and P2 are all in 100. Average Shortfall and CV are, respectively, the average expenditure shortfall among the poor (in %) and the coefficient of variation among the poor.
(Source) Authors' calculations based on *Susenas* data.

Table 4

Head Count Ratio (P0), Poverty Gap Index (P1), and Poverty Severity Index (P2) by
Region in Rural Areas

		2008				2010			
		Estimate	95% Conf. Interval		No. of Poor People (in 1,000)	Estimate	95% Conf. Interval		No. of Poor People (in 1,000)
P0	Sumatra	15.7	14.8	16.6	4,291	14.2	13.4	15.0	4,030
	Java-Bali	19.6	18.8	20.3	11,014	16.7	16.0	17.4	9,542
	Kalimantan	9.9	8.8	11.1	739	8.9	7.8	10.1	706
	Sulawesi	18.4	17.0	19.8	2,000	16.5	15.2	17.8	1,844
	Others	27.8	26.3	29.4	2,441	24.9	23.4	26.3	2,215
	Total	18.5	18.0	19.0	20,485	16.1	15.7	16.6	18,337
P1	Sumatra	2.7	2.5	2.9		2.4	2.2	2.6	
	Java-Bali	3.4	3.2	3.6		2.6	2.5	2.8	
	Kalimantan	1.4	1.2	1.7		1.3	1.1	1.5	
	Sulawesi	3.3	3.0	3.6		2.7	2.5	3.0	
	Others	5.9	5.5	6.3		5.0	4.6	5.4	
	Total	3.3	3.2	3.4		2.7	2.6	2.8	
P2	Sumatra	0.7	0.6	0.8		0.6	0.6	0.7	
	Java-Bali	0.9	0.8	1.0		0.7	0.6	0.7	
	Kalimantan	0.3	0.3	0.4		0.3	0.2	0.4	
	Sulawesi	0.9	0.8	1.0		0.7	0.6	0.8	
	Others	1.9	1.7	2.0		1.5	1.4	1.7	
	Total	0.9	0.9	0.9		0.7	0.7	0.7	
Average Shortfall	Sumatra	17.1				16.7			
	Java-Bali	17.3				15.9			
	Kalimantan	14.5				14.2			
	Sulawesi	17.8				16.6			
	Others	21.3				20.1			
	Total	17.7				16.6			
CV	Sumatra	0.129				0.132			
	Java-Bali	0.131				0.122			
	Kalimantan	0.113				0.117			
	Sulawesi	0.130				0.126			
	Others	0.151				0.148			
	Total	0.133				0.128			

(Note) P0, P1 and P2 are all in 100. Average Shortfall and CV are, respectively, the average expenditure
shortfall among the poor (in %) and the coefficient of variation among the poor.
(Source) Authors' calculations based on *Susenas* data.

Table 5
Shares of Chronic and Transient Poverty in Each Region

	Chronic Poverty				Transient		Never		Total
	Persistent		Non-persistent						
	No.	% Share	No.	% Share	No.	% Share	No.	% Share	No.
Urban									
Sumatra	636	3.7	693	4.1	2,485	14.6	13,233	77.6	17,047
Java-Bali	2,102	2.9	2,820	3.9	8,875	12.4	57,863	80.7	71,660
Kalimantan	43	0.9	85	1.8	394	8.1	4,345	89.3	4,867
Sulawesi	84	1.8	64	1.3	437	9.1	4,204	87.8	4,790
Others	275	7.7	222	6.2	569	15.9	2,522	70.3	3,588
Sub-total	3,141	3.1	3,884	3.8	12,759	12.5	82,167	80.6	101,951
Rural									
Sumatra	894	3.3	1,460	5.3	5,456	20.0	19,488	71.4	27,299
Java-Bali	2,795	5.0	3,642	6.5	11,784	21.0	38,010	67.6	56,230
Kalimantan	87	1.2	206	2.8	1,162	15.6	5,990	80.4	7,446
Sulawesi	509	4.7	672	6.2	2,261	20.8	7,428	68.3	10,871
Others	797	9.1	857	9.8	2,231	25.4	4,886	55.7	8,771
Sub-total	5,082	4.6	6,837	6.2	22,894	20.7	75,803	68.5	110,616
Total	8,223	3.9	10,722	5.0	35,653	16.8	157,970	74.3	212,568

(Note) Number is the number of people (in 1,000).
(Source) Authors' calculations based on *Susenas* data.

Table 6
Share of Each Region (Urban and Rural) in Chronic and Transient Poverty (in %)

	Chronic Poverty		Transient	Never	Total
	Persistent	Non-persistent			
Urban					
Sumatra	7.7	6.5	7.0	8.4	8.0
Java-Bali	25.6	26.3	24.9	36.6	33.7
Kalimantan	0.5	0.8	1.1	2.8	2.3
Sulawesi	1.0	0.6	1.2	2.7	2.3
Others	3.3	2.1	1.6	1.6	1.7
Sub-total	38.2	36.2	35.8	52.0	48.0
Rural					
Sumatra	10.9	13.6	15.3	12.3	12.8
Java-Bali	34.0	34.0	33.1	24.1	26.5
Kalimantan	1.1	1.9	3.3	3.8	3.5
Sulawesi	6.2	6.3	6.3	4.7	5.1
Others	9.7	8.0	6.3	3.1	4.1
Sub-total	61.8	63.8	64.2	48.0	52.0
Total	100.0	100.0	100.0	100.0	100.0

(Source) Authors' calculations based on *Susenas* data.

Table 7
Poverty Transition Matrix
in Urban and Rural Sectors

		2010						
		Poor		Non-poor		Total		
		No.	% Share	No.	% Share	No.	% Share	
Urban								
	Poor	4,838	4.6	6,641	6.3	11,478	10.9	
2008	Non-poor	5,465	5.2	87,941	83.8	93,406	89.1	
	Total	10,303	9.8	94,582	90.2	104,884	100.0	
Rural								
	Poor	8,277	7.3	11,353	10.0	19,630	17.3	
2008	Non-poor	10,060	8.9	83,877	73.9	93,937	82.7	
	Total	18,337	16.1	95,230	83.9	113,566	100.0	

(Note) No. is the number of people in thousand.
(Source) Authors' calculations based on *Susenas* data.

Table 8
Poverty Transition Matrix by Region
in Urban and Rural Sectors

| | | 2010 | | | | | |
| | | Poor | | Non-poor | | Total | |
		No.	% Share	No.	% Share	No.	% Share
Sumatra							
Urban							
2008	Poor	990	5.4	1,387	7.6	2,377	13.0
	Non-poor	1,092	6.0	14,787	81.0	15,879	87.0
	Total	2,082	11.4	16,175	88.6	18,256	100.0
Rural							
2008	Poor	1,666	5.9	2,521	8.9	4,187	14.8
	Non-poor	2,364	8.3	21,828	76.9	24,192	85.2
	Total	4,030	14.2	24,349	85.8	28,379	100.0
Java-Bali							
Urban							
2008	Poor	3,256	4.5	4,524	6.2	7,780	10.7
	Non-poor	3,793	5.2	61,289	84.1	65,083	89.3
	Total	7,049	9.7	65,813	90.3	72,863	100.0
Rural							
2008	Poor	4,367	7.6	6,145	10.7	10,511	18.4
	Non-poor	5,175	9.0	41,516	72.6	46,691	81.6
	Total	9,542	16.7	47,660	83.3	57,202	100.0
Kalimantan							
Urban							
2008	Poor	97	1.9	215	4.2	313	6.1
	Non-poor	119	2.3	4,692	91.6	4,811	93.9
	Total	216	4.2	4,908	95.8	5,124	100.0
Rural							
2008	Poor	221	2.8	516	6.5	737	9.3
	Non-poor	486	6.1	6,676	84.5	7,162	90.7
	Total	706	8.9	7,193	91.1	7,899	100.0
Sulawesi							
Urban							
2008	Poor	120	2.4	191	3.9	311	6.3
	Non-poor	182	3.7	4,473	90.1	4,655	93.7
	Total	302	6.1	4,665	93.9	4,967	100.0
Rural							
2008	Poor	869	7.8	1,040	9.3	1,909	17.1
	Non-poor	975	8.7	8,289	74.2	9,264	82.9
	Total	1,844	16.5	9,329	83.5	11,173	100.0
Others							
Urban							
2008	Poor	374	10.2	323	8.8	697	19.0
	Non-poor	279	7.6	2,698	73.4	2,977	81.0
	Total	653	17.8	3,021	82.2	3,674	100.0
Rural							
2008	Poor	1,155	13.0	1,131	12.7	2,286	25.6
	Non-poor	1,060	11.9	5,568	62.5	6,628	74.4
	Total	2,215	24.9	6,698	75.1	8,914	100.0

(Note) No. is the number of people in thousand.
(Source) Authors' calculations based on *Susenas* data.

Table 9
Sensitivity Analysis
Headcount Ratio by Region
in 2010

Poverty Line	Region	Urban Sector				Rural Sector			
		Estimate	95% Conf. Interval		No. of Poor People (in 1,000)	Estimate	95% Conf. Interval		No. of Poor People (in 1,000)
1.0	Sumatra	11.4	10.2	12.6	2,082	14.2	13.4	15.0	4,030
	Java-Bali	9.7	9.1	10.3	7,049	16.7	16.0	17.4	9,542
	Kalimantan	4.2	3.1	5.3	216	8.9	7.8	10.1	706
	Sulawesi	6.1	4.7	7.5	302	16.5	15.2	17.8	1,844
	Others	17.8	15.5	20.0	653	24.9	23.4	26.3	2,215
	Total	9.8	9.3	10.3	10,303	16.1	15.7	16.6	18,337
1.1	Sumatra	15.8	14.5	17.1	2,882	20.1	19.2	21.1	5,718
	Java-Bali	13.5	12.8	14.2	9,820	23.6	22.8	24.4	13,487
	Kalimantan	6.3	5.0	7.6	322	15.2	13.8	16.7	1,204
	Sulawesi	9.0	7.3	10.7	448	23.4	21.9	24.8	2,612
	Others	22.5	20.1	25.0	828	33.0	31.4	34.5	2,938
	Total	13.6	13.1	14.2	14,299	22.9	22.3	23.4	25,958
1.2	Sumatra	21.1	19.6	22.5	3,845	26.8	25.8	27.9	7,612
	Java-Bali	17.8	17.0	18.5	12,945	30.7	29.8	31.5	17,554
	Kalimantan	8.3	6.9	9.8	427	21.1	19.5	22.6	1,664
	Sulawesi	11.6	9.7	13.5	576	31.0	29.4	32.6	3,465
	Others	29.0	26.4	31.6	1,064	40.1	38.5	41.8	3,577
	Total	18.0	17.4	18.6	18,858	29.8	29.3	30.4	33,871
1.3	Sumatra	26.5	24.9	28.0	4,835	33.0	31.9	34.1	9,368
	Java-Bali	22.3	21.5	23.1	16,237	37.1	36.2	37.9	21,199
	Kalimantan	11.6	9.9	13.2	594	26.7	25.0	28.4	2,107
	Sulawesi	14.7	12.7	16.7	731	37.2	35.5	38.8	4,153
	Others	32.7	30.0	35.4	1,200	44.7	43.1	46.3	3,984
	Total	22.5	21.9	23.1	23,598	35.9	35.4	36.5	40,812
1.4	Sumatra	31.4	29.8	33.1	5,741	38.5	37.4	39.6	10,925
	Java-Bali	27.3	26.4	28.2	19,890	42.8	41.9	43.7	24,488
	Kalimantan	16.0	14.1	17.9	818	31.7	30.0	33.5	2,507
	Sulawesi	19.1	16.8	21.3	948	40.7	39.0	42.3	4,543
	Others	36.3	33.6	39.1	1,336	49.4	47.8	51.1	4,407
	Total	27.4	26.7	28.1	28,732	41.3	40.7	41.9	46,869
1.5	Sumatra	36.0	34.4	37.7	6,581	43.5	42.4	44.7	12,351
	Java-Bali	31.9	31.0	32.8	23,219	47.9	47.0	48.8	27,403
	Kalimantan	19.6	17.6	21.7	1,005	36.4	34.6	38.2	2,875
	Sulawesi	22.5	20.1	24.9	1,119	44.9	43.2	46.6	5,014
	Others	40.0	37.2	42.8	1,468	53.8	52.2	55.5	4,799
	Total	31.8	31.1	32.5	33,392	46.2	45.6	46.8	52,443

(Note) Head Count Ratio (P0) is in %.
(Source) Authors' calculations based on *Susenas* data.

Table 10
Headcount Ratio (P0)
by Age, Education, Household Size and Gender
based on the 2008 Module *Susenas*

	Urban		Rural	
	P0 Estimate	Pop. Share	P0 Estimate	Pop. Share
Age				
-29	6.5	7.2	12.9	7.0
30-34	10.0	10.0	15.3	10.2
35-39	11.7	14.4	17.0	15.3
40-44	11.6	15.3	16.3	14.7
45-49	10.3	14.7	16.3	14.5
50-54	9.9	12.8	14.6	12.0
55-64	9.7	15.6	15.5	15.2
65-	13.2	10.1	17.6	11.0
Education				
No education	20.9	16.7	19.8	38.0
Elementary school	15.9	26.1	17.3	34.4
Junior high school	9.1	16.7	11.4	14.0
Senior high school	4.5	21.3	7.1	8.2
Vocational high school	4.7	8.5	6.2	2.9
One/two year college	1.0	0.8	2.7	0.6
Three year college	0.7	2.2	2.6	0.4
Undergraduate	0.5	6.9	1.5	1.4
Graduate	0.1	0.8	0.0	0.1
Household Size				
1	2.8	1.7	4.3	1.5
2	5.3	6.3	7.2	7.5
3	5.1	16.7	8.1	18.5
4	7.9	26.1	12.4	25.9
5	11.7	21.5	17.8	20.4
6	15.0	13.4	22.8	13.0
7	17.3	7.2	27.5	6.8
8	20.3	3.6	30.5	3.4
9	19.9	1.7	33.9	1.7
10-	22.0	1.8	36.9	1.4
Gender				
Male	10.5	89.5	15.8	91.0
Female	10.8	10.6	16.5	9.0

(Source) Authors' calculations based on *Susenas* data.

Table 11
Probit Analysis of Poverty
in the Urban and Rural Sectors

Variable	Probit Estimate		Marginal Effect at Mean		
	Coef.	Std. Err.	dy/dx	Std. Err.	Mean Value
Urban Sector					
age	0.0931 **	0.0106	0.0089 **	0.0010	45.8
age^2	-0.0025 **	0.0002	-0.0002 **	0.0000	
age^3	0.0000 **	0.0000	0.0000 **	0.0000	
edyear	-0.0552 **	0.0061	-0.0053 **	0.0006	9.0
edyear^2	-0.0028 **	0.0004	-0.0003 **	0.0000	
h_size	0.1841 **	0.0036	0.0177 **	0.0004	4.0
d_gender	-0.0642 **	0.0209	-0.0064 **	0.0022	0.854
d_sum	0.4662 **	0.0279	0.0545 **	0.0039	0.257
d_jvb	0.3789 **	0.0270	0.0372 **	0.0027	0.482
d_sul	0.0085	0.0356	0.0008	0.0035	0.097
d_oth	0.5303 **	0.0338	0.0740 **	0.0063	0.066
d_agr	0.3432 **	0.0206	0.0409 **	0.0030	0.121
d_mcn	0.0648 **	0.0245	0.0065 *	0.0026	0.087
d_egw	-0.2448 *	0.1020	-0.0191 **	0.0063	0.007
d_tsc	-0.1447 **	0.0182	-0.0136 **	0.0017	0.413
d_fnc	-0.4745 **	0.0693	-0.0311 **	0.0028	0.026
d_unemploy	-0.0043	0.0262	-0.0004	0.0025	0.148
constant	-2.7473 **	0.1714			
No. of observations = 101,240; LR Chi2(17) = 8,224.0; Pseudo R2 = 0.1534					
Rural Sector					
age	0.0153 **	0.0066	0.0027 *	0.0012	46.6
age^2	-0.0009 **	0.0001	-0.0002 **	0.0000	
age^3	0.0000 **	0.0000	0.0000 **	0.0000	
edyear	-0.0476 **	0.0036	-0.0085 **	0.0006	6.0
edyear^2	-0.0009 **	0.0003	-0.0002 **	0.0001	
h_size	0.2202 **	0.0024	0.0392 **	0.0004	4.1
d_gender	-0.1667 **	0.0136	-0.0321 **	0.0028	0.872
d_sum	0.2674 **	0.0156	0.0509 **	0.0032	0.305
d_jvb	0.5410 **	0.0159	0.1128 **	0.0038	0.264
d_sul	0.2433 **	0.0168	0.0478 **	0.0036	0.181
d_oth	0.6102 **	0.0168	0.1413 **	0.0047	0.131
d_agr	0.3092 **	0.0155	0.0527 **	0.0025	0.616
d_mcn	0.0439 *	0.0228	0.0080	0.0043	0.058
d_egw	-0.1847	0.1180	-0.0292	0.0164	0.002
d_tsc	-0.1248 **	0.0195	-0.0210 **	0.0031	0.153
d_fnc	-0.4141 **	0.0958	-0.0561 **	0.0093	0.004
d_unemploy	0.2831 **	0.0224	0.0584 **	0.0053	0.076
constant	-1.9079 **	0.1077			
No. of observations = 181,147; LR Chi2(17) = 16,327.6; Pseudo R2 = 0.1170					

(Note) 1. * significant at 5% level   ** significant at 1% level
2. Dummy variable for gender: d_gender =1 (if male). Dummy variables for regions: d_sum = 1 (if Sumatra); d_jvb = 1 (if Java-Bali); d_sul = 1 (if Sulawesi); d_oth= 1 (if Others). Dummy variables for sectors: d_agri =1 (if agriculture); d_mcn = 1 (if mining/construction); d_egw = 1 (if electricity/gas/water); d_tsc = 1 (if trade/service); d_fnc = 1 (if finance)
(Source) Authors' calculations based on *Susenas* data.