

**The Impact of Migration Status on
Household Financial Resilience
During the Indonesian Crisis:
A Case Study**

Aris Ananta

**The Impact of Migration Status on
Household Financial Resilience
During the Indonesian Crisis:
A Case Study**

Aris Ananta
ISEAS Senior Research Fellow

THE IMPACT OF MIGRATION STATUS ON HOUSEHOLD FINANCIAL RESILIENCE DURING THE INDONESIAN CRISIS: A CASE STUDY¹

Abstract

Literature has shown that economic population mobility can be self-selected. Those who are more ambitious, more aggressive, more entrepreneurial, and more able are more likely to move. The migrants are therefore predicted to be financially better than the non-migrants, who are not necessarily as ambitious, aggressive, entrepreneurial, and able as the migrants. This paper examines whether the household financial resilience of migrants is different from the non-migrants. The non-migrants are further differentiated between the movers (who earn their living outside their residence) and stayers (who earn their living within their residence). The analysis is based on a small, rich data set collected in August 1998, one year after the crisis started, by the Indonesian Central Board of Statistics. It concludes that the difference in household financial resilience reflects geographical difference, irrespective of whether they are migrants, movers, or stayers.

1. Introduction

Population mobility can be a means to cope with a crisis. By moving to another geographical area, a person can find a better economic opportunity than what they have in their original area. The move to another area may take the form of permanent or long term stay, meaning that they change the place of residence. Or, they may simply move to another area but return on the same day; or they move to another area for one or two months and then return to the original area, and after a while move again.

Despite data limitation, a study by Hugo (2000) seems to support the thesis that population mobility had been an important coping mechanism during the crisis in Indonesia. He maintains that households in Indonesia had adopted a range of short-term or non-permanent population mobility and long-term or permanent population mobility.

Literature (Chiswick, 2000) has also shown that migration is often self-selected. Not every body will use migration as a means to cope with the crisis. Only

the best from the origin community will migrate. Usually, those who choose to migrate are those who are relatively more able, more entrepreneurial, more aggressive, more ambitious, and more persevering. These people then come to new regions and compete with residents of the new regions. It is natural, therefore, to anticipate that the migrant will perform better financially than the local. If the migrants have different culture, ethnicity, and religion, the financial gap between migrants and the local can be a source of serious social conflict.

A question then arises as to whether those who were mobile had different financial resilience than those who were not mobile, especially during the Indonesian crisis. This paper attempts to examine whether migrants (those who come to the regions), movers (those who often leave the regions for short time), and stayers (those who are neither migrants nor movers) are different in their household financial resilience.

To answer the questions a small, but rich, data set collected in August 1998, the worst year of the crisis is analyzed. The survey is not only the first Indonesian survey asking quantitative information on both migrants and movers in comparison to stayers, but it also covers information on household financial resilience.² The result may not reflect what happened at national or even regional level, but it may contribute to some understanding on the impact of migration status — whether they were migrants, movers, or stayers — on household financial resilience.

It uses stock of rice, saving status, and debts status as the measurement of household financial resilience. Another feature lies in its attempt to relate migration status to household financial resilience, especially during the Indonesian crisis.

The extent of the household financial resilience was measured with three indicators. The first is on the availability of rice during the time of the interview (August 1998). The second is the comparison of saving in December 1997 and saving in August 1998. The third is the comparison of debts in December 1997 and in August 1998. After measuring the household financial resilience by migration status, the impact of migration status on the household financial resilience was analyzed.

The following section provides a brief description on the extent of the severity of the Indonesian crisis, including some illustrations on how people coped with the

crisis and how financially resilient they were. Section 3 presents the data and method of analysis, and Section 4 discusses the empirical results. The paper concludes that migration status might not significantly affect the household financial resilience at the basic need level. Regional difference seemed to have captured the apparent significant impact of the migration status. On the other hand, migration status might have some significant impact on household financial resilience at higher need levels.

2. How Severe was the Crisis?

2.1 A Nightmare

Sukamdi and Setiadi (forthcoming) describe that there were two extreme perceptions on the condition of the crisis, especially at the start of the crisis. First is the “not that bad” view and the second is the doomsday view. People in the first view saw the condition as “business as usual”. People adjusted quickly to the new socio-political-economic situation. Economic activity still went on as usual. People still crowded both traditional and modern markets. Traffic was still as bad as before the crisis, indicating that people were still very busy.

People in the second view saw the situation as hopeless. The focus was on macroeconomic and financial conditions. It was catastrophic and devastating. The *rupiah* had dropped drastically and the price had risen dramatically. The banking system failed and a large number of workers lost their jobs. Real income declined rapidly.

Interestingly, in his observation among people in Srihardjo (Central Java) in 1998, Kutanegara (1998) finds that it was the middle class and higher-income people who discussed and complained a lot about the crisis. They talked about the increase in prices, decline in purchasing power, and lost of jobs. The lower-income class was much more quite though they might have suffered more in absolute terms.

Indeed, Ananta (forthcoming) describes the crisis as a sudden, dramatic crash following a booming and prosperous period. People who used to be in comfort during the boom and had high expectation for the future suddenly had to face drastically different realities. They did not fall into absolute poverty and could even maintain life styles much above the subsistence level. But, their relative welfare and expectations

dropped precipitously. And, they had never been prepared for such a crisis. It was like the feeling of riding a roller coaster but not being prepared to ride on it and not knowing when it would end. Some used to talk about poverty but they never experienced being poor. Then, they were forced to get the feeling of much deprivation. They included people in the middle and upper class: people in the universities, in the government, in the business, in politics, in mass media, in non-governmental organizations (NGOs) and other elites in Indonesia. They were so shocked and frustrated and they had the political power to voice their grievance.

The panic also brought up much concern on the social aspect of the crisis. Sukamdi and Setiadi show how the government had then tried to introduce some breakthrough programme to cope with the problem of poverty caused by the crisis, while Ananta and Siregar (1999) describe how the social programme had been one of the major sources of fiscal burden during the crisis. Mubyarto (1999) mentions that the social safety net was seemingly prepared with an assumption that without the programme the rural Indonesian would not survive and that hunger would prevail.

The panic among experts, policy makers, and people in international donor agencies and other elites in Indonesia might have shaped the ensuing policy recommendations during the crisis. Therefore, following the doomsday view, analysis at the beginning of the crisis had been very pessimistic. Sukamdi and Setiadi further mention that the International Labour Organization (ILO) had estimated that 50% of Indonesian lived under poverty line in 1998. This would have been a dramatic increase from 17.7% in 1996. Yet, estimates by the Central Board of Statistics reveals that only 39% lived under poverty line in the middle of 1998. A further publication by the Central Board of Statistics (Badan Pusat Statistik, 2000) shows that the figure was only 24% in December 1998. The percentage of people under poverty line had increased, but not as much as predicted earlier. It had even declined to 18.17% in August 1999, very close to that in 1996, before the crisis.

Hartono and Ehrman (forthcoming) also show how, at the beginning of 1998, policy makers had produced a nightmare scenario on education in Indonesia. The Ministry of National Education predicted that enrolment rates would drop from 72% in 1997/1998 to 57% in 2001/2 for junior secondary school and from 40% in 1997/1998

to 23% in 2001/2002 for senior secondary school. Yet, it turned out that there had not been any significant drop in enrolment rates.

In term of economic growth, the prediction in the early 1998 envisaged a very bad situation for Indonesia in that year, with a growth rate of at most negative 20%. Some even said it would be worse. In fact, the growth rate in 1998 had been better than anticipated. It was growing at only negative 13.0%. During 1999, even after the release of the better than expected growth in 1998, people still predicted a negative growth (about 2 or 3 %) in 1999. The fact is that the growth rate in 1999 was not negative. It was 0.3%. However, this better than expected situation had not convinced people of a better future. In the first half of 2000 people anticipated positive growth, but only around 2 or 3%. In the second half of 2000, people started revising the projection of growth for 2000. They arrived at 4.5%. Indeed, statistics show a 4.8% growth rate in 2000.³

Nevertheless, 1998 was the worst time for Indonesia during this crisis. The inflation rate rose from 11.05% in 1997 to 77.63% in 1998 and then it declined to 2.01% before it rose again to 5.87% in 2000. The rapid decline in income coupled with fast increase in prices may have made people suffer a lot in 1998.

The Indonesian economy started recovering in 1999. Panggabean (2001) mentions that in 2000 all sectors in the economy were growing. Even, the construction sector surprisingly was growing at 6.8%. Capital formation was also strong and private consumption spending continued to rise. Soesastro (2001) argues that the emergence of small business entrepreneurs might have been responsible for the recovery. These small scale activities is what Soesastro calls as the “healthy” economy of Indonesia in contrast to the “sick” economy of the big conglomerates, that depend so much on government facilities and the financial sector.

2.2 *Household Financial Resilience*

There have been many ways of coping with the crisis. Ananta, Kartowibowo, and Wiyono (forthcoming) mention some conversations they had with people in the rice field in rural Banyumas, Central Java, in early 2000. The people described that the most important commodity for them was rice. They had a lot of vegetables. They

simply asked for help from their neighbours if they did not have any rice. During the crisis they did not have any problem because rice had not been a problem for them.

However, for them, the hardest time was the *lebaran*, the end of the *ramadhan*, marked with a feast celebrating the end of one-month fasting. They used to buy new clothes during the *lebaran*, but they could not afford to buy new clothes in 1998 and 1999. The 2000 *lebaran* was better for them. They also mentioned that education was also expensive, but the social safety net programme on education had reduced their burden.

Ananta, Kartowibowo, and Wiyono also mention their finding from conversations with people in the forest area in 2000. For these people, rice was the most expensive commodity. The availability of rice had been very important for their survival. When the price rose dramatically, they suffered a lot. However, they were used to being poor and therefore, the crisis had not shocked them so much.

Similarly, urban people also regarded rice as the most important thing in their life. They were apprehensive of the increase in the price of rice. They always tried to make sure they could still buy rice even if the price rose. The rich could still buy the rice, but the poor suffered a lot.

Kutanegara (1998) finds that people in Srihardjo, a village in Yogyakarta, tried to reduce their expenditure, especially the non-food expenditure. As such, food expenditure became a dominant component of expenditure. They even tried to reduce the consumption of rice and substitute it with *gaplek/tiwul* or combine rice with *gaplek/tiwul*. They reduced the consumption of “*lauk-pauk*” (foods other than rice). They did not consume meat but limited their diet to vegetables, even without *tempe* or *tahu*. *Tempe* and *tahu* had also become luxurious food because of the imported soybean. They also cut back on frying food, to reduce the use of oil. They did not buy clothes. They suppressed the expenditure on health and education.⁴

It is also interesting to note the coping mechanism of the people in Jatinom (a village in Central Java). Thus far, because of the existence of social mechanism such as “*guyub*” (*gotong royong*) and “*kona’ah*” (Islamic values) and economic mechanism (such as the diversification of their business), they could cope with the crisis. Irwan Abdullah et al (1998) have not found any substitution of rice with other

goods such as *tiwul/gaplek*. They only find a decline in the consumption of luxurious food items.⁵

In small studies in several villages in Alor (East Nusa Tenggara), Bekasi (West Java), and Jakarta, conducted during December 1998 and January 1999, CIDA (2000) found some coping mechanism to maintain rice consumption. One was to buy lower quality of rice, rather than reducing the quantity of rice. Another was to shift to cassava, sweet potatoes, or bananas. The third way was to reduce the quantity of rice consumed and the fourth was to reduce spending on social activities such as wedding.

Kutanegara (1998) further discusses the perception of the people in Srihardjo during the crisis. The older generation saw a crisis as a form of hunger. This generation has experienced several bouts of hunger, during the great depression (1930s), Japanese occupation (1942-45), and even during the first five years of the independence (1945-49), as well as the period prior to and beginning of the New Order (1960-70). At that time most of them could not eat rice. They had to eat cassava. Therefore, for them, the prevailing situation was not a crisis. They could still eat rice. They acknowledged that prices had risen, but goods were still available.

However, the younger generation viewed it from a different perspective. They had not experienced hunger and hence they felt that the current crisis was really bad. For them, the crunch was a decline in their income and a downward trend in their consumption. Hence, for this group, availability of rice may not be a good indicator of their financial resilience.

The situation in urban area was a little different from that in rural area. Ananta, Panggabean, Brodjonegoro, and Mahi (1999), based on a small data set collected in August 1998, conclude that most of the urban households had been adjusting to the crisis very well. They changed their consumption pattern. They tried to maintain the consumption of basic commodities, such as rice, by sacrificing secondary goods, reducing their saving, or selling their assets.

Ananta et al (forthcoming) describes the condition of an office worker with a *sarjana* degree (equivalent to a bachelor degree) in Jakarta in the middle of 2000. The latter said that he used to buy *Kompas* (magazine) daily before the crisis. It cost only 500 rupiah. The price then rose rapidly to 1,500. He needed the information from

Kompas to keep him abreast with current developments in Indonesia. However, the price had increased by 200%. He also used to buy *TEMPO*, one of the leading weekly news magazines in Indonesia; but during the crisis he stopped buying both because the price rose from 5,000 to 10,000 — an increase of 100%. He used to spend only about 2,500 *rupiah* for his simple lunch (rice, vegetable, chicken or fish, and *tempe*), but during the crisis he had to spend about 4,500 *rupiah* for the same menu. Therefore he changed his “lunch pattern”, often bringing his own lunch from home.

Another office worker mentioned that he used to budget 5,0000 *rupiah* a month to buy books. With that money, he could buy two or three books. During the crisis, the same amount of money could suffice only for one book. He used to go for a “fitness” exercise costing 100,000 a month, but then he stopped the activity.

For such people, saving and debt could be more important indicators of their financial resilience than the availability of rice. For them, availability of rice might not be an issue.

2.3 *Population Mobility*

Summarising from several studies, Saefullah (1996) concludes that movers in Indonesia were more likely to be those between age 20 and 40. They were still idealistic and energetic, and played a role in the development of Indonesia. They had a strong frugal attitude and could save money. It was not surprising that movers often lived in better financial conditions than stayers. It was also possible that the movers belonged to the middle or upper class of society.

Saefullah maintains that movers were predominantly male. Socio-cultural condition might have reduced the opportunity of females to work outside the area of their residences. During difficult time, heads of household (male) would tend to earn money somewhere else. Consequently, movers were also more likely to be heads of households. Silvey (2000), in her study during the crisis in South Sulawesi, Indonesia, finds that a female migrant worker was often associated with the image of a sex worker or an immoral female (who had sex outside marriage). The crisis, and the resulting violence, led parents to be more concerned of their daughters than of their sons.

In the first quantitative comparison between behaviour of movers and migrants, Ananta, Anwar, and Miranti (2001) have shown that the probability of being a migrant was higher than that of being a mover at younger (usually below 20) or at older ages (mostly above 45). Between the age of 20 and 45, the probability of being a mover was higher than that of being a migrant. During their “middle age” people were more willing to earn outside their residence. When they became older, they preferred to stay in their residence. When they were younger, before entering “middle age”, they also preferred to stay, because they had not had much opportunity to earn outside the residence. This quantitative analysis does not reject the hypothesis that the male was more likely to move or migrate than the female.

Hugo (2000) concludes that migration and, in particular, moving had been a mechanism in Indonesia to cope with the crisis, resulting from loss of jobs in the urban formal sector, reduction in income in the urban informal sector, and reduction in remittance to the rural areas. During the crisis, first generation migrants in urban areas chose to circulate (to move non-permanently) rather than to migrate back to the rural areas. By doing this, they could get the best of both areas. It was a reversal of the pre-crisis phenomenon, whereby people lived in rural areas but earned their money in urban areas.

In addition, Chiswick (2000) shows that economic migration can be self-selected in the labour market. Migrants are more ambitious, more persevering, more entrepreneurial, and more able. They come to new regions and enter the local labour market and compete with those who are not necessarily the best. It is not surprising if the migrants can perform better financially. On the other hand, the inclination for self-selectivity is less among the non-economic migrants.

The entrance of migrants can result in undesired competition, especially in Indonesia, which consists of so many different ethnicities and cultures. Keban (1996) mentions that migrants often did not show respect to the local people. They did not make any attempt to understand local traditions. If people in the destination area also were highly ethnocentric, social conflict would easily erupt. Keban cites cases in Irian Jaya and East Timor as two examples of riots arising from conflicts between migrants and locals.

If the migrants did better financially and, at the same time, they had different tradition and life styles, social jealousy would arise and social conflict would be easily ignited. Tirtosudarmo (forthcoming) argues that the occurrence of social conflicts in Indonesia in the second half of the 1990s (before and during the crisis) and, even in 2001, had strong links with geographical population mobility. Transmigration, a national programme implemented since independence to move people mostly from Java and Bali to outer islands, had led to undesired results. With the rising power of the people outside Jakarta, since the fall of Soeharto in May 1998, the “local” has become increasingly a threat to the migrant.

3. Data and Modeling

3.1 The Survey

In August 1998, the worst year during the crisis, the Indonesian Central Board of Statistics, funded by the United Nations Development Program in Jakarta and the National Development Planning Board (Bappenas), collected data on the impact of the crisis on population mobility. In addition to its focus on household financial resilience, the advantage of the survey lies in its information content about “non-permanent” or “short-term” population mobility together with that on the usual migration (permanent or long term population mobility) data. It was the first quantitative survey on population mobility which included information on both “short term” and “long-term” population mobility. Other quantitative information was also elicited through population censuses and intercensal population surveys, but were limited to migration. Therefore, this survey enables a comparison not only between these two types of population mobility, but also between the mobile people and the local people.

The survey, which is called “*Study Dampak Krisis terhadap Ketahanan Ekonomi Rumah Tangga: Migrasi*” [Study on the Impact of the Crisis on Household Economic Resilience: Migration], is much smaller in scale compared to the intercensal surveys or even the population censuses. However, it enables much deeper analyses of the variables that were collected. In particular, it provides a rare opportunity to analyse the impact of migration status on household financial resilience.

The sample of the survey constitutes households where at least one of the members was a “migrant” or a “mover”. It was conducted in seven *kabupatens* (districts), with one *kabupaten* in a different province. The districts covered were: North Lampung district (Lampung province), Indramayu district (West Java province), Wonogiri district (Central Java province), Bangkalan district (East Java province), Central Lombok district (West Nusa Tenggara province), Banjar district (South Kalimantan province), and Bone district (South Sulawesi province). Based on the index of food security (in 1998) used by Sumarto, Wetterberg, and Pritchett (1999), the selected urban provinces were in the group of the worse half of the 27 provinces; where two of the selected rural provinces were in the group of the better half.

Local key persons, either provincial/ district local statistical officers or heads of villages, recommended the choice of three sub-districts from each district; two villages from each sub-district; and then two enumeration areas from each village. From the listing of households, 20 households were specifically selected in one enumeration area. An exception was in Banjar, where they had only 26 households in two selected villages. The recommendation was based on what the local key persons believed to be areas with a tradition of out-migration. In other words, the sample can be biased in favour of those areas where the respondents were likely to out-migrate.

Information was sought on all members of the households. The survey covered 7,738 individuals within 1,662 households in 42 villages, distributed almost equally in each of the seven provinces. However, information on household financial resilience was from the head of household and therefore the analysis in this paper uses the head of household as the unit of analysis. All other information are also related to the head of the households. The data used in this paper is essentially the same data set utilised by Ananta, Anwar, and Miranti (2001), except that the latter covers all individuals, rather than limiting to the heads of household.

There were 495 migrants (29.7%), 348 movers (20.9%), and 821 stayers (49.3%). Only 6.87% of the migrants was female, and only 4.31% of the movers was female. However, 15.10% of the stayers was female. It should be noted that the sample constituted heads of households and hence it was more likely to have been male than female. Yet, this sample may also indicate that the female was more likely to be a

stayer. The age composition shows that the respondents, especially among migrants and movers, were mostly at productive ages (25-49). It was found that 79.20% of the migrants and 81.03 % of the movers, but only 35.44 % among the stayers, were in the productive ages.

The migrants were relatively much more highly educated, with 33.54% of them having secondary school education or above. On the other hand, there was only 13.50% among movers and 10.61% among stayers. However, 48.23% of the stayers had never finished elementary school, compared to 30.75 % among movers, and 25.66% among migrants. If we incorporate junior high school into the highly educated sample, then almost half (48.89%) of the migrants would qualify, compared to only 29.02 % among movers, and even only 19.01% among stayers.

In short, movers and migrants were more likely to be male and at productive age than stayers. In addition, migrants tended to be more highly educated compared to movers and stayers.

3.2 *Model*

3.2.1 *Dependent variables*

There are three categorical dependent variables measuring the household financial resilience. Therefore, three separate multinomial regression analyses were conducted.

Rice has always been an important commodity for Indonesian. However, as discussed in Section 2, only those in the lower class may regard stock of rice as a determinant in their consideration of financial matters.

Thus, the first dependent variable is rice availability (R). The availability of rice (which is the main staple of Indonesians) in the household at the time of interview was estimated. R is equal to 1 if the stock of rice in the household lasts for at least one week, equal to 2 if it lasts less than a week or there is no stock at all but the respondent has savings to buy rice. R is equal to 3 if the stock is for less than a week or there is no stock at all and the respondent has no saving to buy the rice. R=3 is used as the reference.

Next, saving can become important once the subsistence level is passed, after rice stock is no longer relevant to the people. Related to saving is debt. Therefore,

they are the next dependent variables.

Saving status (S) is a scale comparing saving in December 1997 with saving in August 1998. S is equal to 1 if the saving increased; equal to 2, if the saving remained the same; equal to 3, if the saving decreased; equal to 4, if there was no more saving; equal to 5, if there was no saving in December 1997, but some saving in August 1998; equal to 6, if there were no savings in both December 1997 and August 1998, S=6 is used as the reference.

Debt status (D) also compares debts in December 1997 with debts in August 1998. D is set to be equal to 1 if the debt increased; equal to 2, if the debt remained the same; equal to 3, if the debt decreased; equal to 4, if there was no more debt; equal to 5, if there was no debt in December 1997, but some debt in August 1998; and equal to 6, if there were no debts in both instances. D=6 is used as the reference.

3.2.2 *Independent variables*

Our main independent variable is the migration status, i.e., whether they were migrants, movers, or stayers. Here, a migrant is someone who either:

- a. had moved into the current residence (*kecamatan* — sub-district) between August 17, 1997 and February 1998 (six months before the survey)
- or
- b. had moved into the current residence (*kecamatan* -sub-district) after February 1998 (6 months before the survey) but he/she intended to stay in the current residence.

Therefore, a migrant as defined here is a “very recent” migrant. Usually, in Indonesian studies on migration, recent migration has been defined as those whose province of residence five years earlier is different from that at the time of interview. In other words, the differences are in the unit of analysis (*kecamatan* instead of province) and the time reference (one year instead of five years).⁶ Furthermore, the migrant defined here is not similar to the concept of *merantau* (Naim, 1971), that refers to people leaving their residences for a long time before they earn enough money for remittance. The purpose of using the “very recent” migration in this paper is to capture phenomena occurring during the crisis. Therefore, the migrants are supposed to be economic migrants, rather than non-economic migrants such as refugees.

A mover is defined as someone who was not a migrant and who either:

- a. had always been staying in the current residence (sub-district), but often going outside the sub-district for at least one month.

or

- b. had moved in before August 17, 1997 (that is, more less, before the crisis began) and often gone outside the sub-district for at least one month.

This definition of mover does not include concepts mentioned by Mantra (1981) as *nglaju* (travelling to another place to work but returning home in the same day) and *nginep* (travelling to another place to work and not returning home for several days). The definition is neither the same with Mantra's *mondok* (leaving the regions for several months or years). The mover defined here is merely leaving the residence for at least one month and at most 6 months.

The remaining category, the stayer, was one who was neither a migrant nor a mover. In the data used here, it is impossible to be both a migrant and a mover simultaneously, though, in reality, it is possible that he/she was a migrant, who moved between 6 to 12 months earlier, and also a mover, who often went outside the sub-district.

It should be noted here that this definition of migration status should not be utilised to analyse potential social conflict arising from difference in household financial resilience among migrants, movers, and stayers. Like stayers, movers can be considered as locals because movers had stayed for relatively longer period than the migrants. Yet, the measurement of migrant covers only the recent (within one year) migrant and excludes those who had migrated more than one year earlier. Those who migrated more than one year earlier were considered as stayers and hence they could be treated as local. However, social conflict often arises against those who had migrated for relatively long period.

3.2.3 Steps in the Regression Analysis

A simple model for each of the three multinomial regressions with migration status as the only independent variable was tested. Next, the results were compared with those in which age, sex, and education of the heads of the households were controlled, to examine whether the impact of the migration status changes the results. Age is a continuous variable. Sex is a dummy variable with value equals to one for male and 0 for female. Education is a series of three dummy variables. Educ1 equals to 1 if the respondent finished elementary school, and 0 otherwise; educ2 equals to 1 if the respondent finished elementary school, and 0 otherwise; educ3 equals to 1 if the respondent finished lower secondary school, and 0 otherwise. The reference is upper secondary school and above.

After controlling age, sex, and education, to know whether the results will change if some economic variables are controlled, new variables are introduced, i.e., income of head of household and whether the head worked in the formal sector. The respondent is defined to work in the formal sector if he/she worked as a regular employee or an employer with regular employees. Otherwise, he/she worked in the informal sector. Therefore, formal sector is a series of two dummy variables. FS1 equals to 1 if the respondent was in the formal sector and 0 otherwise; FS2 equals to 1 if the respondent was in the informal sector and 0 otherwise. The reference is “not working”, either in the labour force or outside the labour force. Income is defined as the income from all jobs in July 1998 and it is a continuous variable. Thus, a complete model, using migration status, age, sex, education, formal sector and income as the independent variables as derived.

Finally, because population mobility may well be related to regions, we also include regional measurements, that is *kabupaten* (district) and urban residence. This led to a complete model with *kabupaten* and another one with both *kabupaten* and urban-rural residence. Because there are seven *kabupatens*, it entails a series of six dummy variables with Bone *kabupaten* (South Sulawesi) as the reference.

To facilitate interpretation of the statistical analysis, the estimated probabilities of each value of the household financial resilience according to the migration status was calculated, by fixing other variables at their mean values.

4. Statistical Results

4.1 *Determinants of Rice Stock*

In August 1998, (at the time of interview) there were 1097 (66.1%) households with stock of rice for at least one week. It is difficult to interpret this figure of “66.1%” because there was no information based on past experiences. However, 24.2% of Indonesian people lived under poverty line in December 1998 (Badan Pusat Statistik, 2000), rising from 17.7% in 1996 (before the crisis). If people who lived under poverty line synonymous with those who had inadequate stock of rice, then the percentage of those having no problem should be around 75.8% (100%-24.2%). Therefore, it may be that the problem (measured with stock of rice) was worse than that measured by the poverty.

290 (17.5%) households had stock of rice less than a week or no stock at all but had savings to buy rice. Because they had savings to buy rice, we may also add them to those with no problem. We then have a figure of 83.6% for those with no problem of rice stock. This is higher than the 75.8%, derived for those above the poverty line. Only 272 (16.4%) of the sample had stock of rice for less than a week or not stock at all and, at the same time, they had no savings to buy rice. In other words, with this indicator, the condition of the sampled population appeared to be better off than the whole of Indonesia, or that measurement with stock of rice indicates a better condition for the respondents.

Without controlling other variables, the migrant status had significant impact on the household financial resilience measured with the stock of rice. Migrants, compared to stayers, had significant impact on the ratio between the probability of having rice problem with savings and the probability of having rice problem without savings; yet, movers had significant impact of the ratio between the probability of having no rice problem and probability of having rice problem with no saving.

The simple model in Table 1.1 shows that stayers had the highest probability (70.34%) of having no problem with the stock of rice (having at least one week of stock of rice), followed by migrants (64.90%), and movers (54.05%). The table also shows that movers had the highest probability (22.97%) exhibiting rice problem but having savings to buy rice. The movers did not need to stock as much rice because

they were on the move and they could also use their savings. Yet, the movers were also those who had the highest probability of having problem and having no saving to buy rice.

The migration status still had significant impact on stock of rice, even after age, sex, and education are controlled. The impact remains even if formal sector and then income of the household are added as variables. The complete model (model no. 2) in Table 1.1 reveals that stayers still had the highest probability of having no problem with the stock of rice and movers still had the highest probability of having problem with the stock and having no savings to buy rice. On the other hand, migrants had the highest probability of having problem but having savings to buy rice. Relative to migrants and movers, stayers seemed to depend more on stock of rice; but, compared to stayers, migrants and movers depended more on their savings to fulfil the need of rice.

However, the impact disappears as soon as the *kabupaten* was used as a control. After controlling with *kabupaten*, migrant status showed no significant impact on the household financial resilience measured with the stock of rice. Therefore, the difference in financial resilience seemed to reflect geographic variation. As shown in model 3 in Table 1.1, the probability of having no rice problem, having rice problem but with savings, and having rice problem with no savings did not depend on the migration status of the respondent. The probabilities were, however, different for different *kabupatens*.

Regardless of migration status, the *kabupaten* in South Sulawesi and South Kalimantan had the highest percentage (93.63%) of those having no problem with stock of rice. The lowest percentage (40.29%) was found in West Java.

Similarly, model no. 4 in Table 1.1 describes that the relationship between migration status and stock of rice remains insignificant even after urban residence was used as a control. The probabilities did not vary by migration status, but they varied with urban residence. Rural respondents seemed to have better household financial resilience measured with stock of rice. Probability of having no rice problem was 84.13% in urban area and 89.40% in rural area, and probability of having rice problem with no saving was 12.41 % in urban area and 6.71 % in rural area.

This finding disproves the hypothesis that migration status significantly affects household financial resilience, measured with stock of rice. The significant relationship between migration status and stock of rice seemed to reflect difference in *kabupaten*, rather than in the migration status. Those with different migration status, but lived in the same *kabupaten*, had the same probability in their household financial resilience, measured with stock of rice.

Once the migrants came to the region, they seemed to have adopted the local characteristics. Their household financial resilience, measured with stock of rice, became the same as the locals — the stayers. With regard to stock of rice, the movers also had the same household financial resilience as those of the locals. If the stock of rice is a better indicator of household financial resilience among the poor, then the finding may also imply two possibilities. First, the household financial resilience among the poor did not depend on the migration status. Whenever they stayed in the same *kabupaten*, the migrants, movers, and stayers exhibited similar behaviour in their financial resilience. Their poverty might have forced them to be more integrated.

Second, the sampled population was already above the subsistence level, and they no longer regarded stock of rice as a big problem for them. Their stock of rice varied more according to the region they lived in than to their status as migrants, movers, or stayers. That 75.8% of the sample had no problem of rice stock or had problems but had savings to buy rice indicates that the second possibility is more plausible.

In addition to the regional effect, it is found that education and age also significantly affected household financial resilience. As shown in Table 1.2, the probability of having no problem with stock of rice rose with the increase in educational attainment up to lower secondary school and with the age of the respondent. In other words, the more educated and the older the respondent, the more likely did he/she have no problem with stock of rice.

4.2 *Determinants of Saving Status*

About half (49.5%) of the households had no savings in both December 1997 and August 1998. It is also found that 271 (16.3%) households were experiencing a

decline in their savings and 81 (4.9%) had saving in December 1997, but had no more saving in August 1998.

If it is considered that these three groups were precarious in their household financial resilience, then we have 70.7% of the sample living in such a condition. This percentage is much larger than 24.2 % measured by the poverty line. In other words, measured with saving status, the household financial resilience seemed to have been much worse than that derived from the percentage living under poverty line.

Unlike stock of rice, movers did not seem to have significant different impact from stayer, even before being controlled with other variables. Further, migrants only affected the ratio between the probability of declining saving and probability of no saving in both periods. Model no.1 in Table 2.1 describes how the probability of each saving category did not vary by migration status, except that the probability of declining savings and the probability of having no savings in both December 1997 and August 1998 among the migrants were different from those among movers or stayers. The differences in the probabilities of other saving status were very small, simply reflecting rounding errors. In general, however, about 50% of the respondents had no savings in both periods. After “having no savings in both periods”, the highest percentage was on “declining savings”, with 16% amongst movers and stayers, and even higher (21%) among migrants. Migrants seemed to suffer the worst because of the declining savings, but the percentage of migrants having no savings in both periods is lower than that of movers and stayers.

When controlled with age, sex, and education, the only impact of migrant on declining savings disappeared. Therefore, small difference in savings status among migrant status could be explained by differential in age, sex, and education. Several regressions were ran to find out which of the three variables eliminate the impact of migration status and it was found that Age had absorbed the impact of the migrant status on saving differential.

When formal sector was added, still there was no significant impact of migration status. Further adding the equation with income, yielded no significant impact. Model no. 2 in Table 2.1 shows that the probability of household financial resilience measured with saving still did not vary with the migration status. This

finding implies that the difference in saving status can be better explained through the age composition of the sample, rather than through difference in migration status. The highest probability, however, was still with those with no savings in both periods. The next highest was those with declining savings.

Interestingly, *kabupaten* was added to control the regression, there was a significant difference among migrant status, though the difference was only between mover and stayer. See model no 3 in Table 2.1. This finding implies that the migration status could not explain the variation in saving status when being controlled with age, sex, education, formal sector, and income; yet the migration status can significantly explain the variation in saving status within each *kabupaten*. As shown in model no 4 in Table 2.1, the significant impact remains even when it was controlled with urban-rural residence. In general the movers were better, because they had the highest percentage of increasing savings and the lowest percentage in no savings in both periods.

This finding implies that the migrants had adjusted to the local behaviour and hence their household financial resilience, measured with saving status, had become similar to that of the locals. However, the movers' household financial resilience was different from the stayers. The movers still went outside the region frequently and they might not identify themselves with the locals. The movers were unlike the migrants who had lived in the new region and spent all their time there. The frequent encounter with outsiders might have caused the behaviour of the movers to be different from the stayers. The movers were also relatively better in their household financial resilience, measured with saving status. In other words, for secondary needs such as savings, movers seemed to differentiate themselves from migrants and stayers.

Beside regional variables, sex and education also significantly affected household financial resilience. Table 2.2 shows that the higher the education, the higher was the probability of rising savings, the lower was the probability of no savings in both December 1997 and August 1998, and the lower was the probability of no more savings. The probability of declining savings was much higher among those who finished elementary school than those who had not finished elementary school, but the probability then declined with further higher education though the decline was not as

much as the increase. In general the difference in probability was much larger between those who had not finished elementary school and those who finished elementary school than difference between other educational attainments. The table also shows that male respondent was less likely to have rising saving, and more likely to have declining savings or no more savings.

4.3 *Determinants of Debt Status*

A total of 1106 (66.7%) households had no debt in both periods and 149 (9.0%) households had debt in December 1997, but no more debts in August 1998. If these two groups were put together, there were 75.7% of the households with no problem of debts. Or, 24.3% of the households had problem of debts. This is about the same value as the percentage of people under poverty line. Furthermore, this 24.3% (having problems) consisted of 10.6% with no change in the debts, 7.7% with decreasing debts, 5.4 % with rising debts, and 0.6 % with having debts in August 1998 and no debts in December 1997. In other words, there were only 6.0 % (5.4% + 0.6%) of households with worsening debt status.

Because there were only 0.6% respondents having debts in August 1998 and no debts in December 1997, these respondents were included in the group with rising debts. In other words, D=1 if the debts increased or there was no debts in December 1997 but there was debts in August 1998. Then, D=5 if there were no debts in both periods. D=5 is still used as the reference.

Table 3.1 shows that migrant status had significant impact on household financial resilience measured with the debt status, without being controlled with other variables. Compared to stayers, migrants had significant impact on the ratio between probability of increasing debts and probability of no debts in both periods and on the ratio between probability of declining debts and probability of no debts in both periods. Mover's significant impact was only on the ratio between the probability of no more debts and probability of no debts in both periods. Table 3.1 reveals that in the simple model (without being controlled with any other variable) migrants had the highest probability (72.63%) of having no debts in both periods, followed by stayers (67.07%),

and movers (59.86%). Migrants also had the lowest probability (3.78%) of having rising debts, compared to 6.34% among movers, and 7.10% among stayers.

However, if we put those with “no debts in both periods”, “declining debts”, and “no more debt” into one “fine” group, it is found that 84.30 % of the migrants was in this category, 83.84% among movers, and 81.89% among stayers. This comparison implies that the difference in the “fine” group among migration status did not seem to be very big.

The impact of the migration status on debt status was still significant after controlling with age, sex, and education. The only change was that the impact of migration status on the ratio between the probability of no more debts and probability of no debts in both periods was then insignificant. Experimenting with several regressions, it is found that the significant impact disappeared only after education was put into the equation. The above result, after being controlled with age, sex, and education, remained the same when formal sector and income of the head of household were added. See the complete model in Table 3.1.

When the “no debt in both periods”, “declining debts”, and “no more debts in August 1998” were put together into a “fine” group, it was found that 91.48 % of the migrants was in this “fine” group; 90.42 % of the movers; and 89.13 % of the stayers. Again, as in the simple mode, the differences of the percentage in the “fine” group were not big.

The impact becomes insignificant after *kabupaten* was put into the equation. The probability of household financial resilience, as measured by debt status, did not vary by migration status. Differences in *kabupaten* seem to have explained the differences in debt status. In other words, the significant impact of the migration status simply reflects the differences in the *kabupaten* where they lived.

Urban-rural residence was added to the equation, as shown in model no. 4. Again, the migration status still had insignificant impact on debt status. This finding disproves the hypothesis that migration status affects household financial resilience, measured with debt status.

In addition to *kabupaten* and urban residence, from the complete model with *kabupaten* and urban residence, it is found that education was the only non-regional

variable which significantly affected the household financial resilience. Table 3.2 shows that the probability of “declining debts” or “no more debts” or “no debts in both periods” was around 95% for those higher than “not finishing elementary school”. The probability was 96.74 % for those who had not finished elementary school. This finding implies that though education affected the household financial resilience significantly, the difference was mostly between those who had never finished elementary school and those who had finished elementary school and above. Further, the difference was not big. All probabilities were above 90%.

5. Conclusion

In comparison with the 24.2% of the people under poverty line in Indonesia, the measurement of household financial resilience reveals a better condition for the sample if the resilience is measured with stock of rice. However if measured with saving status, the condition was worse off and no difference is found if measured with debt status. Thus, if people consider rice as the most important commodity, the analysis shows that the sampled people were better off than the national figure. Saving is more of a secondary need and the relatively worse situation found in terms of savings status may reflect that of the middle income classes.

Similarly, the impact of migration status on household financial resilience seemed to depend on the indicator used. Measured with stock of rice, the impact was significant if the *kabupaten* is disregarded. However, within the *kabupaten*, the probabilities of household financial resilience did not vary with migration status. The impact reflected the difference in regions rather than that in migration status.

In other words, the financial resilience of respondents was affected more by the region they lived in, than whether they were stayers, movers, or migrants. Possibly, the insignificance of impact was because the sampled respondents had passed the subsistence level and no longer regarded stock of rice as an important issue in their financial matter.

In contrast, migration status did not have significant impact on household financial resilience when measured with saving status if the *kabupaten* is disregarded. Within each *kabupaten*, however, the probabilities among movers were different from

ones among stayers, but the probabilities among migrants were the same as for stayers. In term of savings, which may be regarded as a secondary need, the migrants might have adopted to local conditions. They had stayed in the new region and spent all their time in the new region. The movers, however, often went outside the region and hence their saving behaviour could be different from the stayers. The movers seemed to be better off in term of their saving status.

Next, when measured by debt status, household financial resilience was significantly affected by migration status provided it was being not controlled with *kabupaten* and urban-rural residence. However, similar to the case using stock of rice, the impact disappeared when subjected to control with *kabupaten*. The impact was still insignificant when urban-rural residence was factored into the equation.

In other words, differences in the migration status might not significantly affect the household financial resilience at the basic need level, but the result is mixed at the higher level. Measured with debt status, the migration status had no significant impact. Differences in *kabupaten* played a more important role in explaining the differences in household financial resilience, measured with stock of rice and debt status as well. Measured with saving status, movers stood apart from both stayers and migrants. Movers seemed to be better off in term of the saving status, after being controlled with regional variables.

The results can be that household financial resilience does not depend on whether the sampled respondents were migrant, movers, or stayers. The only difference found is between movers and others (migrants and stayers) when financial resilience is measured with saving status. In this case, movers are better off than both migrants and stayers. If movers are not seen as outsiders, their better performance may not produce social jealousy. Yet, this finding should be interpreted with caution. This research has not examined long term migrants, who came to the regions a long time ago, e.g. 10, 30 years, or even more than one generation. They may still be considered as migrants. The migrants discussed in this paper is still limited to those who came during the crisis. Further research should investigate the financial resilience among long term migrants and compare the resilience among non-migrants.

Finally, this paper has not analysed the possibility of potential social conflict arising from difference in household financial resilience. The migrant is here defined as recent (within one year) migrant. Analyses on potential social conflict should distinguish between local (who were born and living in the region) and non-local (including migrants who had stayed in the regions for a long time). Further research should also investigate this issue.

NOTES

1. The author appreciates the contribution of Riyana Miranti in the data preparation and variables construction. He is indebted to the critical comments from Evi Nurvidya Anwar on this paper. He also acknowledges the Badan Pusat Statistik, Indonesia, for allowing the use of the data.
2. Migrant is one who moves to another residence for a relatively long-term or permanent basis. A mover is one who moves to another residence for a relatively short-term or non-permanent basis. A stayer is one who is neither a migrant nor a mover.
3. The anticipated rates of growth are based on a conversation with Adrian Panggabean.
4. Unfortunately, Pande Made Kuntanegara does not mention when the survey was conducted. It was estimated, however, that the survey was conducted in 1998.
5. Irwan Abdullah et al do not mention when the survey was conducted. It might have been conducted in 1998.
6. For detailed explanation on definition of migrants used in Indonesian literature, see Muhidin (forthcoming).

REFERENCES

- Abdullah, Irawan et al. “*Dampak Krisis Ekonomi terhadap Kehidupan Masyarakat Kecamatan Jatinom (skala usaha dan rumah tangga)*” [Impact of Economic Crisis on Society Live in Jatinom District (business and household scale)], unpublished paper. Yogyakarta: Population Studies Center, University of Gadjah Mada, 1998.
- Ananta, Aris. “What Do We Learn from the Crisis: An Introductory Overview”, in *Human Development in Indonesia: 1997-1999 crisis*, edited by Aris Ananta (forthcoming).
- Ananta, Aris, Evi Nurvidya Anwar, and Riyana Miranti. “Age-Sex Pattern of Migrants and Movers: a Multilevel Analysis on an Indonesian Data Set”. Asian MetaCentre Research Paper Series No. 1. Singapore: Asian MetaCentre for Population and Sustainable Development Analysis, Centre for Advanced Studies, National University of Singapore, 2001.

- Ananta, Aris, Daksini Katowibowo, and Nurhadi Wiyono. "Change in Consumer Price Index: Urban Indonesia, 1997-1999", in *Human Development in Indonesia: 1997-1999 crisis*, edited by Aris Ananta (forthcoming).
- Ananta, Aris and Reza Y. Siregar. "Social Safety Net Policies in Indonesia: Objectives and Shortcomings". *ASEAN Economic Bulletin*, 16, no. 3, (1999): 344-59.
- Ananta, Aris, Martin Panggabean, Bambang Brodjonegoro, and Benedictus R. Mahi. "Coping with the Crisis. Analysis based on the data generated by the On-the-Ground Monitoring Survey". Jakarta: United Nations Development Programme (UNDP), Badan Pusat Statistik (BPS), Badan Perencanaan Pembangunan Nasional (Bappenas), unpublished report, 1999.
- Badan Pusat Statistik. *Laporan Perekonomian Indonesia 2000. Angkatan Kerja, Konsumsi, dan Kemiskinan Penduduk*. [Report on Indonesian Economy 2000. Labour Force, Consumption, and Poverty]. Jakarta: Badan Pusat Statistik, 2000.
- Chiswick, Barry R. "Are immigrants Favorably Self-Selected?" in *Migration Theory. Talking across Disciplines*, edited by Caroline B. Brettel and James F. Hollifield. New York: Routledge, 2000.
- CIDA. "Coping Strategies of Poor Households in Indonesia". Jakarta: Canadian International Development Agency, 2000.
- Hartono, Djoko and David Ehrmann. "The Indonesian Economic Crisis: Impacts on School Enrollment and Funding", in *Human Development in Indonesia: 1997-1999 crisis*, edited by Aris Ananta (forthcoming).
- Hugo, Graeme. "The Impact of the Crisis on Internal Population Mobility in Indonesia". *Bulletin of Indonesian Economic Studies*, 36, no. 2, (2000): 115-38.
- Keban, Yeremias T. "Mobilitas Penduduk dan Perubahan Sosial Budaya" [Population Mobility and Socio-cultural Changes] in *Mobilitas Penduduk di Indonesia* [Population Mobility in Indonesia], edited by Aris Ananta and Chotib. Jakarta: Lembaga Demografi Fakultas Ekonomi Universitas Indonesia and Kantor Menteri Negara Kependudukan/ BKKBN, 1996.
- Kutanegara, Pande Made. "Dinamika Kesejahteraan: Srihardjo dalam Masa Krisis" [Welfare Dynamics: Srihardjo during Crisis] paper presented at seminar on "Social Security and Social Policy". Yogyakarta, Population Studies Center, University of Gadjah Mada, 28-29 November, 1998.
- Mantra, I. B. *Population Movement in Wet Rice Communities*. Yogyakarta: Gadjah Mada University Press, 1981.
- Mubyarto. "Krisis ini Belum Seberapa.... (dua pertiga penduduk desa di Klaten tidak merasakan penurunan kesejahteraan)" [The Crisis had not been that bad(two third of the village population in Klaten did not experience declining financial welfare)]. Yogyakarta, unpublished paper, 1999.
- Muhidin, S. Salut. "Future Demography of Indonesian Population. Multiregional Population Projection using Various Data Sources". Ph.D dissertation, University of Groningen, forthcoming.
- Naim, M. "Merantau: Causes and Effects of Minangkabau Voluntary Migration". Occasional papers, no. 5. Singapore: Institute of Southeast Asian Studies, 1971.
- Panggabean, Adrian. "Robust 4Q00 Boosts Full-Year Growth", *News Flash*, Nomura, 20 February, 2000.
- Saefullah, H.A. Djadja. "Mobilitas Internal Nonpermanen" [Nonpermanent Internal Mobility] in *Mobilitas Penduduk di Indonesia* [Population Mobility in Indonesia], edited by Aris Ananta and Chotib. Jakarta: Lembaga Demografi Fakultas Ekonomi Universitas Indonesia and Kantor Menteri Negara Kependudukan/ BKKBN, 1996.
- Silvey, Rachel M. "Stigmatized Spaces: gender and mobility under crisis in South Sulawesi,

- Indonesia” *Gender, Place, and Culture*, 7, no.2, (2000): 143-61.
- Soesastro, Hadi. “Regional Economic Outlook 2001. Indonesia: Another Crisis?” paper presented at Regional Outlook Forum. Singapore: Institute of Southeast Asian Studies, 5 January 2001.
- Sukamdi and Setiadi. “How Vulnerable Are the Poor? Lessons from Some Micro Studies” in *Human Development in Indonesia: 1997-1999 crisis*, edited by Aris Ananta (forthcoming).
- Sumarto, Sudarmo, Anna Wetterberg, and Lant Pritchett. “The Social Impact of the Crisis in Indonesia: results from a Nationwide Kecamatan Survey” www.worldbank.org, 1999.
- Tirotosudarmo, Riwanto. “Population Mobility and Social Conflict: the Aftermath of Economic Crisis in Indonesia” in *Human Development in Indonesia: 1997-1999 crisis*, edited by Aris Ananta (forthcoming).

About the author:

Aris Ananta is a Senior Research Fellow at the Institute of Southeast Asian Studies, Singapore. He can be contacted at aananta@iseas.edu.sg or phone: 65-870-4523.

Table 1.1. Estimated Probability of Stock of Rice by Migration Status

No	Model	Status	No problem	Having problem but saving	Having problem but no saving			
1.	Simple Model	Migrant	0.6490	0.2141	0.1368			
		Mover	0.5405	0.2297	0.2297			
		Stayer	0.7034	0.1483	0.1483			
2.	Complete Model	Migrant	0.6730	0.1794	0.1476			
		Mover	0.6048	0.1655	0.2297			
		Stayer	0.7260	0.1147	0.1593			
3.	Complete Model (with <i>kabupaten</i>)	Lampung	Migrant	0.6678	0.0868	0.2454		
			Mover	0.6678	0.0868	0.2454		
			Stayer	0.6678	0.0868	0.2454		
		West Java	Migrant	0.4029	0.2986	0.2986		
			Mover	0.4029	0.2986	0.2986		
			Stayer	0.4029	0.2986	0.2986		
		Central Java	Migrant	0.8337	0.0832	0.0832		
			Mover	0.8337	0.0832	0.0832		
			Stayer	0.8337	0.0832	0.0832		
		East Java	Migrant	0.7390	0.1305	0.1305		
			Mover	0.7390	0.1305	0.1305		
			Stayer	0.7390	0.1305	0.1305		
		West Nusatenggara	Migrant	0.7954	0.0382	0.1664		
			Mover	0.7954	0.0382	0.1664		
			Stayer	0.7954	0.0382	0.1664		
		South Kalimantan	Migrant	0.9363	0.0319	0.0319		
			Mover	0.9363	0.0319	0.0319		
			Stayer	0.9363	0.0319	0.0319		
		South Sulawesi	Migrant	0.9363	0.0319	0.0319		
			Mover	0.9363	0.0319	0.0319		
			Stayer	0.9363	0.0319	0.0319		
		4.	Complete Model (with <i>kabupaten and urban</i>)	urban	Migrant	0.8413	0.0345	0.1241
					Mover	0.8413	0.0345	0.1241
					Stayer	0.8413	0.0345	0.1241
rural	Migrant			0.8940	0.0389	0.0671		
	Mover			0.8940	0.0389	0.0671		
	Stayer			0.8940	0.0389	0.0671		

Source : Calculated from Table A-1 by fixing other variables at their mean values

Table 1.2. Estimated Probability of Stock of Rice by Education and Age

	No problem	Having problem and saving	Having problem and no saving
Education			
not finishing elementary school	0.7220	0.0527	0.2253
elementary school	0.8286	0.0553	0.1161
junior secondary school	0.9287	0.0230	0.0483
senior secondary school and above	0.9287	0.0230	0.0483
Age			
15	0.7335	0.0711	0.1954
30	0.7919	0.0555	0.1525
45	0.8403	0.0426	0.1171
60	0.8792	0.0392	0.0886

Source: calculated from Table A-1, by fixing other variables at their mean values.

Table 2.1. Estimated Probability of Saving Status by Migration Status

No	Model	Status	Rising	Constant	Declining	No more saving in August 98	No saving in Dec 97, saving in August 98	No saving in both periods
1.	Simple Model	Migrant	0.0934	0.0623	0.2100	0.0404	0.1084	0.4855
		Mover	0.0991	0.0661	0.1616	0.0428	0.1151	0.5153
		Stayer	0.0991	0.0661	0.1616	0.0428	0.1151	0.5153
2.	Complete Model	Migrant	0.1214	0.0363	0.1821	0.0650	0.1255	0.4697
		Mover	0.1214	0.0363	0.1821	0.0650	0.1255	0.4697
		Stayer	0.1214	0.0363	0.1821	0.0650	0.1255	0.4697
3.	Complete Model (with kabupaten)	Lampung Migrant	0.0074	0.0167	0.0287	0.1157	0.4157	0.4157
		Lampung Mover	0.0129	0.0166	0.0286	0.1151	0.4134	0.4134
		Lampung Stayer	0.0074	0.0167	0.0287	0.1157	0.4157	0.4157
	West Java	Migrant	0.0151	0.0840	0.0895	0.1829	0.1473	0.4812
		Mover	0.0263	0.0831	0.0885	0.1808	0.1456	0.4757
		Stayer	0.0151	0.0840	0.0895	0.1829	0.1473	0.4812
	Central Java	Migrant	0.0209	0.0420	0.0864	0.3578	0.1350	0.3578
		Mover	0.0362	0.0414	0.0851	0.3522	0.1328	0.3522
		Stayer	0.0209	0.0420	0.0864	0.3578	0.1350	0.3578
	East Java	Migrant	0.0433	0.0965	0.1694	0.2302	0.2302	0.2302
		Mover	0.0739	0.0935	0.1640	0.2229	0.2229	0.2229
		Stayer	0.0433	0.0965	0.1694	0.2302	0.2302	0.2302
	West Nusa Tenggara	Migrant	0.0111	0.0152	0.0522	0.1744	0.2367	0.5104
		Mover	0.0194	0.0151	0.0518	0.1729	0.2347	0.5061
		Stayer	0.0111	0.0152	0.0522	0.1744	0.2367	0.5104
	South Kalimantan	Migrant	0.0516	0.0474	0.0792	0.2739	0.2739	0.2739
		Mover	0.0874	0.0456	0.0762	0.2636	0.2636	0.2636
		Stayer	0.0516	0.0474	0.0792	0.2739	0.2739	0.2739
	South Sulawesi	Migrant	0.0433	0.0965	0.1694	0.2302	0.2302	0.2302
		Mover	0.0739	0.0935	0.1640	0.2228	0.2228	0.2228

Stayer	0.0433	0.0965	0.1694	0.2302	0.2302	0.2302
--------	--------	--------	--------	--------	--------	--------

Table 2.1. (Continued)

No Model	Status	Rising	Constant	Declining	No more saving in August 98	No saving in Dec 97, saving in August 98	No saving in both periods
4. Complete Model (with kabupaten and urban)							
urban	Migrant	0.1260	0.1196	0.0503	0.0503	0.1060	0.5478
	Mover	0.1659	0.1574	0.0662	0.0662	0.1395	0.4049
	Stayer	0.1260	0.1196	0.0503	0.0503	0.1060	0.5478
rural	Migrant	0.0629	0.0629	0.0629	0.0629	0.0629	0.6854
	Mover	0.0899	0.0899	0.0899	0.0899	0.0899	0.5503
	Stayer	0.0629	0.0629	0.0629	0.0629	0.0629	0.6854

Source : Calculated from Table A-2 by fixing other variables at their mean values

Table 2.2. Estimated Probability of Saving Status by Education and Sex

	Rising	Constant	Declining	No more saving	No saving in 97 saving in 98	No saving in 97 and 98
Education						
Not finishing elementary school	0.0398	0.0125	0.0693	0.3148	0.1236	0.4400
Elementary school	0.0574	0.0489	0.1305	0.2735	0.1074	0.3823
Junior secondary school	0.0705	0.0482	0.1287	0.2697	0.1059	0.3770
Senior secondary school and above	0.1254	0.0453	0.1211	0.2538	0.0997	0.3547
Sex						
male	0.0557	0.0294	0.1035	0.2908	0.1142	0.4064
female	0.1116	0.0276	0.0974	0.2736	0.1076	0.3824

Source: calculated from Table A-2, by fixing other variables at their mean values.

Table 3.1. Estimated Probability of Debt Status by Migration Status

No	Model	Status	Rising	Constant	Declining	No more debt	No debt in both periods	
1	Simple Model	Migrant	0.0378	0.1193	0.0478	0.0689	0.7263	
		Mover	0.0634	0.0683	0.0754	0.1644	0.5986	
		Stayer	0.0710	0.1102	0.0845	0.0637	0.6707	
2	Complete Model	Migrant	0.0248	0.0604	0.0281	0.0838	0.8029	
		Mover	0.0439	0.0519	0.0241	0.1908	0.6893	
		Stayer	0.0498	0.0589	0.0273	0.0816	0.7824	
3	Complete Model (with kabupaten)							
	Lampung	Migrant	0.0757	0.0496	0.0224	0.0403	0.8120	
		Mover	0.0757	0.0496	0.0224	0.0403	0.8120	
		Stayer	0.0757	0.0496	0.0224	0.0403	0.8120	
	West Java	Migrant	0.1042	0.0453	0.0197	0.1166	0.7142	
		Mover	0.1042	0.0453	0.0197	0.1166	0.7142	
		Stayer	0.1042	0.0453	0.0197	0.1166	0.7142	
	Central Java	Migrant	0.0492	0.0100	0.0871	0.0392	0.8146	
		Mover	0.0492	0.0100	0.0871	0.0392	0.8146	
		Stayer	0.0492	0.0100	0.0871	0.0392	0.8146	
	East Java	Migrant	0.0054	0.0112	0.0253	0.0403	0.9178	
		Mover	0.0054	0.0112	0.0253	0.0403	0.9178	
		Stayer	0.0054	0.0112	0.0253	0.0403	0.9178	
	West Nusa Tenggara	Migrant	0.0988	0.0369	0.0505	0.2588	0.5549	
		Mover	0.0988	0.0369	0.0505	0.2588	0.5549	
		Stayer	0.0988	0.0369	0.0505	0.2588	0.5549	
	South Kalimantan	Migrant	0.0051	0.0421	0.0242	0.0520	0.8766	
		Mover	0.0051	0.0421	0.0242	0.0520	0.8766	
		Stayer	0.0051	0.0421	0.0242	0.0520	0.8766	
	South Sulawesi	Migrant	0.0056	0.0117	0.0263	0.0035	0.9529	
		Mover	0.0056	0.0117	0.0263	0.0035	0.9529	
		Stayer	0.0056	0.0117	0.0263	0.0035	0.9529	
	4	Complete Model (with kabupaten and urban)						
		urban	Migrant	0.0271	0.0371	0.0388	0.0463	0.8507
Mover			0.0271	0.0371	0.0388	0.0463	0.8507	
Stayer			0.0271	0.0371	0.0388	0.0463	0.8507	
rural		Migrant	0.0275	0.0223	0.0394	0.0470	0.8638	
		Mover	0.0275	0.0223	0.0394	0.0470	0.8638	
		Stayer	0.0275	0.0223	0.0394	0.0470	0.8638	

Source : Calculated from Table A-3 by fixing other variables at their mean values

Table 3.2 Estimated Probabilities of Debt Status by Education

	Rising	Constant	Declining	No more saving	No saving in 97 and 98
Education					
Not finishing elementary school	0.0263	0.0463	0.0378	0.0614	0.8282
Elementary school	0.0272	0.0192	0.0390	0.0597	0.8549
Junior secondary school	0.0282	0.0199	0.404	0.0249	0.8865
Senior secondary school and above	0.0282	0.0198	0.0404	0.0249	0.8865

Source: calculated from Table A-3, by fixing other variables at their mean values.

Table A-1. Determinant of Estimated Probability of Stock of Rice (R)

Variable	Simple Model		Complete Model		Complete Model (with kabupaten)		Complete Model (with kabupaten and urban)	
	1	2	1	2	1	2	1	2
Migrant	x	0.45	x	0.52	x	x	x	x
Mover	-0.7	x	-0.54	x	x	x	x	x
Age			0.0245	x	0.02	x	0.02	x
Sex			-0.5428	x	x	x	x	x
Educ1			-1.96	-0.87	-1.6	x	-1.79	x
Educ2			-1.24	x	-0.86	x	-0.99	x
Educ3			-0.7	x	x	x	x	x
Y			x	x	x	x	x	x
FS1			x	x	x	x	x	x
FS2			0.57	x	x	x	x	x
K1					-2.38	-1.04	-2.57	-1.25
K2					-3.08	x	-3.28	x
K3					-1.08	x	-1.48	x
K4					-1.65	x	-1.59	x
K5					-1.82	-1.47	-2.22	-1.91
K6					-0.85	x	x	x
Urban							-0.67	-0.73

Notes :

x = not significant at $\alpha=5\%$

1= $\log [p(R=1)/p(R=3)]$

2= $\log [p(R=2)/p(R=3)]$

R=1 for stock of rice lasting for at least one week

R=2 for stock of rice lasting for less than one week or no stock at all, but there were some saving to buy the rice

R=3 for stock of rice lasting for less than one week or no stock at all, but there was no saving to buy the rice

Table A-2. Determinant of Estimated Probability of Saving (S)

	Simple Model					Complete Model					Complete Model (with <i>kabupaten</i>)					Complete Model (with <i>kabupaten</i> and urban)					
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
Migrant	x	x	0.32	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Mover	x	x	x	x	x	x	x	x	x	x	0.57	x	x	x	x	0.58	x	x	x	x	x
Age						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sex						-0.95	x	x	x	x	-0.76	x	x	x	x	-1.75	x	x	x	x	x
Educ1						-1.9	-1.89	-0.86	x	-0.63	-0.16	-1.74	-0.81	x	x	-1.36	-1.51	-0.77	x	x	x
Educ2						-1.35	-0.94	-0.58	x	x	-0.96	-0.64	x	x	x	-0.85	x	x	x	x	x
Educ3						-1.07	x	x	x	x	-0.68	x	x	x	x	x	x	x	x	x	x
Y						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
FS1						x	x	-0.07	x	x	x	x	x	x	x	x	x	x	x	x	x
FS2						x	x	-0.57	x	x	x	x	-0.43	x	x	x	x	x	x	x	x
K1											-2.36	-2.35	-2.37	-1.28	x	-2.09	-2.08	-2.32	-1.28	x	
K2											-1.79	-0.88	-1.38	-0.97	-1.18	-1.57	x	-1.33	-0.96	-0.99	
K3											-1.17	-1.27	-1.11	x	-0.97	x	x	-1.03	x	x	
K4											x	x	x	x	x	-0.63	x	x	x	x	
K5											-2.16	-2.65	-1.97	-1.07	-0.76	-1.58	-2.1	-1.88	-1.106	x	
K6											-0.56	-0.89	-0.93	x	x	x	-0.88	-0.95	x	x	
Urban																0.91	0.87	x	x	0.74	

Notes : x = not significant at $\alpha=5\%$

1= $\log [p(S=1)/p(S=6)]$

2= $\log [p(S=2)/p(S=6)]$

3= $\log [p(S=3)/p(S=6)]$

4= $\log [p(S=4)/p(S=6)]$

5= $\log [p(S=5)/p(S=6)]$

S= 1 for rising saving

S= 2 for constant saving

S= 3 for declining saving

S= 4 for no more saving

S= 5 for no saving in December 97, but some saving in August 98

S= 6 for no saving in both periods

Table A-3. Determinant of Estimated Probability of Debt (D)

	Simple Model				Complete Model				Complete Model (with kabupaten)				Complete Model (with kabupaten and urban)			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Migrant	-0.71	x	-0.65	x	-0.72	x	x	x	x	x	x	x	x	x	x	x
Mover	x	x	x	1.06	x	x	x	0.98	x	x	x	x	x	x	x	x
Age					x	x	x	x	x	x	x	x	x	x	x	x
Sex					0.97	0.69	x	x	x	x	x	x	x	x	x	x
Educ1					x	0.84	0.95	1.86	x	0.78	x	0.96	x	0.91	x	0.97
Educ2					x	x	0.94	1.33	x	x	x	0.90	x	x	x	0.91
Educ3					x	x	x	x	x	x	x	x	x	x	x	x
Y					x	-0.00	x	x	x	0.00	x	x	x	0.00	x	x
FS1					x	0.64	x	x	x	x	x	x	x	x	x	x
FS2					x	x	x	x	x	x	x	x	x	x	x	x
K1									2.77	1.61	x	2.59	2.77	1.75	x	2.61
K2									3.22	1.64	x	3.78	3.21	1.79	x	3.80
K3									2.33	x	1.35	2.56	2.33	1.02	1.24	2.59
K4									x	x	x	2.47	x	x	x	2.47
K5									3.42	1.69	1.19	4.83	3.41	2.00	1.07	4.87
K6									x	1.37	x	2.77	x	1.33	x	2.77
Urban													x	0.52	x	x

Notes :

x = not significant at $\alpha=5\%$

1= $\log [p(D=1)/p(D=5)]$

2= $\log [p(D=2)/p(D=5)]$

3= $\log [p(D=3)/p(D=5)]$

4= $\log [p(D=4)/p(D=5)]$

D=1 for rising debts (including no debts in December 97, but some debts in August 98)

D=2 for constant debt

D=3 for declining debt

D=4 for no more debt

D=5 for no more debt in both periods

ISEAS WORKING PAPERS

I. *ISEAS Working Papers on Economics and Finance*

(ISSN 0218-8937)

1(96): Nick J. Freeman, *Portfolio Investment in Vietnam: Coping Without a Bourse*, February 1996.

2(96): Reza Y. Siregar, *Inflows of Portfolio Investment to Indonesia: Anticipating the Challenges Facing the Management of Macroeconomy*, March 1996.

3(96): Helen Hughes, *Perspectives for an Integrating World Economy: Implications for Reform and Development*, May 1996.

4(96): Carolyn L. Gates, *Enterprise Adjustment and Economic Transformation: Industrial Enterprise Behaviour and Performance in Vietnam during Stabilization and Liberalization*, June 1996.

5(96): Mya Than, *The Golden Quadrangle of Mainland Southeast Asia: A Myanmar Perspective*, July 1996.

1(99): Myat Thein, *Improving Resource Mobilization in Myanmar*, January 1999.

2(99): Anita G. Doraisami, *The Malaysian Currency Crisis: Causes, Policy Response and Future Implications*, February 1999.

3(99): George Abonyi, *Thailand: From Financial Crisis to Economic Renewal*, March 1999.

4(99): Carolyn L. Gates, *The East Asian Crisis and Global Integration: Mismanagement and Panic Revisited or a New Beast?*, March 1999.

5(99): Tin Maung Maung Than, *The Political Economy of Burma's (Myanmar's) Development Failure 1948-1988*, March 1999.

6(99): Kim Ong-Giger, *Southeast Asian Economies in Crisis: The Emergence of Pax Capitalia*, April 1999.

7(99): Carolyn L. Gates, *ASEAN's Foreign Economic Relations: An Evolutionary and Neo-Institutional Analysis*, May 1999.

8(99): Kim Ong-Giger, *Japanese IT Development: Implications for FDI in Southeast Asia*, September 1999.

9(99): Frank L. Bartels and Nick J. Freeman, *Multinational Firms and FDI in Southeast Asia: Post-Crisis Perception Changes in the Retail-Oriented Manufacturing Sector*, December 1999.

1(2000): Nick J. Freeman, *Constraints on Thailand's Equity Market as an Allocator of Foreign Investment Capital: Some Implications for Post-Crisis Southeast Asia*, January 2000.

2(2000): Nick J. Freeman, *Foreign Portfolio Investors' Approaches to Thailand's Equity Market: Survey Findings and Preliminary Analysis*, March 2000.

3(2000): Nick J. Freeman and Frank L. Bartels, *Portfolio Investment in Southeast Asia's Stock Markets: A Survey of Institutional Investors' Current Perceptions and Practices*, April 2000.

4(2000): Nick J. Freeman, *A Regional Platform for Trading Southeast Asian Equities: Viable Option or Lofty 'Red Herring'?*, July 2000.

5(2000): Sakulrat Montreevat, *Impact of Foreign Entry on the Thai Banking Sector: Initial Stage of Bank Restructuring*, August 2000.

6(2000): Ramkishen S. Rajan and Tracy Yang, *Devaluation of the Baht and Economic Contraction in Thailand*, December 2000.

7(2000): Tracy Yang and Paul Vandenberg, *Selected East Asian Stock Markets in the Context of Financial Liberalization: Prior to the Crisis*, December 2000.

1(2001): Tracy Yang and Reza Siregar, *An Empirical Examination of the Stock Market Returns in Selected Asia-Pacific Economies in the Pre- and Post-Financial Reform Period*, February 2001.

II. ISEAS Working Papers on International Politics and Security Issues (ISSN 0218-8953)

1(96): Derek da Cunha, *The Need for Weapons Upgrading in Southeast Asia: Present and Future*, March 1996.

1(97): Simon J. Hay, *ASEAN's Regional Security Dialogue Process: From Expectation to Reality?*, March 1997.

1(99): Sorpong Peou, *The ASEAN Regional Forum and Post-Cold War IR Theories: A Case for Constructive Realism?*, January 1999.

2(99): Sheng Li Jun, *China and the United States as Strategic Partners into the Next Century*, February 1999.

3(99): Jürgen Haacke, *'Flexible Engagement': On the Significance, Origins and Prospects of a Spurned Policy Proposal*, February 1999.

4(99): Derek da Cunha, *Southeast Asia's Security Dynamics: A Multiplicity of Approaches Amidst Changing Geopolitical Circumstances*, July 1999.

III. ISEAS Working Papers on Social and Cultural Issues (ISSN 0218-8961)

1(96): Federico V. Magdalena, *Ethnicity, Identity and Conflict: The Case of the Philippine Moros*, April 1996.

1(98): Patricia Lim, *Myth and Reality: Researching the Huang Genealogies*, June 1998.

2(98): M. Thien Do, *Charity and Charisma: The Dual Path of the Tinh Đô Cu Si, a Popular Buddhist Group in Southern Vietnam*, September 1998.

1(99): JoAnn Aviel, *Social and Environmental NGOs in ASEAN*, August 1999.

1(2000): Lee Hock Guan, *Ethnic Relations in Peninsular Malaysia: The Cultural and Economic Dimensions*, August 2000.

1(2001): Aris Ananta, *The Impact of Migration Status on Household Financial Resilience During the Indonesian Crisis: A Case Study*, May 2001.

IV. ISEAS Working Papers by Visiting Researchers (ISSN 0219-3582)

1(2000): Ramkishan S Rajan, *Examining the Case for Currency Basket Regimes for Southeast Asia*, January 2000.

2(2000): P Lim Pui Huen, *Continuity and Connectedness: The Ngee Heng Kongsi of Johor, 1844-1916*, January 2000.

3(2000): Ramkishan S Rajan, *Examining the Case for an Asian Monetary Fund*, February 2000.

4(2000): Thawatchai Jittrapanun, *The SIMEX Experience: Implications for Thailand's Futures Exchange*, February 2000.

5(2000): Le Minh Tam, *Reforming Vietnam's Banking System: Learning from Singapore's Model*, February 2000.

6(2000): Gao Haihong, *Liberalising China's Capital Account: Lessons Drawn From Thailand's Experience*, February 2000.

7(2000): Liliana Halim, *Reviving the Indonesian Banking Sector? Indonesia's Economic Crisis: Impact on Financial and Corporate Sectors 1997-1999*, February 2000.

8(2000): Ngiam Kee Jin, *Coping with the Asian Financial Crisis: The Singapore Experience*, March 2000.

9(2000): Ramkishen S. Rajan and Iman Sugema, *Capital Flows, Credit Transmission and the Currency Crisis in Southeast Asia*, March 2000.

10(2000): Wang Xiaomin, *Zhongguancun Science Park: A SWOT Analysis*, May 2000.

11(2000): Doan Phuong Lan, *The Asian Financial Crisis and its Implication for Vietnam's Financial System*, May 2000.

12(2000): Tracy Yang Su-Chin, *Regulatory Reforms in the Asia-Pacific Region: A Preliminary Study*, May 2000.

13(2000): Akhmad Bayhaqi, *Education and Macroeconomic Performance in Indonesia: A Comparison with Other ASEAN Economies*, May 2000.

14(2000): Ai-Gek Beh and George Abonyi, *Structure of the Asset Management Industry: Organizational Factors in Portfolio Investment Decisions*, June 2000.

15(2000): Paul Vandenberg, *The Evolution of SMI Policy in Malaysia*, December 2000.

1(2001): Anis Chowdhury and Iyanatul Islam, *The East Asian Crisis — A Political Economy Explanation*, March 2001.

2(2001): Irman G. Lanti, *Back to the (Slightly Different) Future: Continuity and Change in Indonesian Politics*, April 2001.

3(2001): Bruce Matthews, *Ethnic and Religious Diversity: Myanmar's Unfolding Nemesis*, May 2001.

Editor

Tin Maung Maung Than

Editorial Committee

Derek da Cunha
Nick J. Freeman
Lee Hock Guan
Sakulrat Montreevat
Anthony Smith
Tracy Yang

Papers in this series are preliminary in nature and are intended to stimulate discussion and critical comment. The Editorial Committee accepts no responsibility for facts presented and views expressed, which rests exclusively with the individual author. No part of this publication may be produced in any form without permission.
Comments are welcomed and may be sent to the author.

