Economic Mobility in Urban Southeast Asia: The Case of the Philippines and Indonesia[1]

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Recognizing that urban areas play a key role in addressing poverty and inequality in line with the Sustainable Development Goals (SDGs) 1 and 10, respectively, it is necessary to understand the dynamics of economic well-being of people living in urban areas to be able to formulate appropriate and effective strategies. Using economic mobility as a metric of well-being, this study aims to examine whether population size of urban areas has an impact on people's mobility prospects. We investigate this issue using longitudinal expenditure data from Indonesia and the Philippines. Our results show that city size has mixed effect on directional mobility in Indonesia and the Philippines; it has a negative but significant impact on the probability of Indonesians to experience upward mobility, but its effect on the probability of Filipinos to experience upward mobility is positive. On the other hand, in both countries, people living in megacities and micro urban areas experience more non-directional mobility with respect to several economic mobility measures.

Keywords: Economic mobility, Urbanization, Urban Poverty, Inequality, City Size, Panel Data, and Multinomial Logistic Regression

1. Introduction

Compared to rural areas, urban areas are more likely to be hubs of industries, services, and infrastructures. Hence, people in urban areas tend to have higher income and better living standards (World Bank (WB), 2013); (United Nations Department of Economic and Social Affairs (UN DESA) Population Division,

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2015). However, urban areas are not all the same. As labor productivity is associated with increasing city size, mega and large cities are characterized by higher paying jobs and higher access to basic services and facilities (Asian Development Bank (ADB), 2008). However, these cities are also densely populated, have shrinking living spaces and highly vulnerable to calamities and disasters (ADB, 2008); (Leggett, 2015). On the other hand, existing data suggest that small and medium-sized cities offer low-cost of doing business, lower wages but at the same time lower living costs and more affordable housing. Smaller cities also face challenges in terms of infrastructures, wherein it is not enough to provide wide coverage of basic needs in health care, education, technology, and transportation (Leggett, 2015). As more people converge in urban areas, an important question is whether there is an optimal population size for an urban area to grow.

This is an especially important issue in Southeast Asia which has one of the fastest urbanization rates in Asia, with an annual average of 1.4% in 2010-2015 (UN DESA Population Division 2014). In terms of population size, cities in Southeast Asia are diverse, ranging from micro urban areas with less than 100,000 inhabitants to large cities with over 5 million inhabitants (UN-HABITAT and ESCAP, 2015). It is projected that 18% of the Association of Southeast Asian Nations (ASEAN) population in 2025 will be located in cities with more than 1 million population. This accounts for about one-third of the projected total urban population in the region, specifically, 14.2% are cities of 1-5 million people and 18.7% are cities over 5 million (Leggett, 2015). As reported by Woetzel et al. (2014), large cities with over 5 million inhabitants have an estimated annual GDP growth rate of 5.2% in 2013 to 2030 and will continue to generate 42% of the region's GDP. The region has registered 2 cities with over 10 million inhabitants namely Jakarta and Metro Manila with 12.8 and 10.2 million residents, respectively. The ASEAN megacities and large cities, which are mostly capital cities, are the centers of political, economic, social and cultural activities of its country in which it largely contributes to national developments.

Despite the fact that ASEAN's large cities will significantly grow in the coming years, over two-thirds of the population will still be living in cities with less than 1 million dwellers- 4.5% in cities with 0.5 to 1 million population and 62.6% in less than 500,000 thousand population. Furthermore, compared to larger cities, smaller cities (i.e., 200,000-750,000 population) are expected to experience faster economic growth with annual compounded growth rate of 6.5% in 2013-2030 (Woetzel et al., 2014).

The main objective of this study is to examine how population size affects the economic well-being of people living in urban areas. We believe that this is an important addition to the literature on economic mobility in developing countries in order to better understand the dynamic trends in poverty eventually reducing poverty and promoting shared prosperity among urban areas.

We take the case of Indonesia and the Philippines. Using longitudinal expenditure data, we compare economic mobility of individuals living in cities of varying population sizes. More specifically, we examine poverty dynamics and other measures of economic mobility focusing on the differences that exist among urban areas of different population sizes. We provide in-depth analyses on economic mobility as movement, origin independence and equalizer of inequality. We also describe the patterns of mobility across income classes subsequently showing poverty persistence over time. Using multinomial logistic regression, we explore the impact of city size on positive/upward mobility considering several factors such as individual, household, and community factors.

The rest of the paper is structured as follows. The next section describes the data that we utilize in this study, followed by the presentation of the methods used in the analysis in Section 3. Section 4 discusses the empirical findings, and lastly, Section 5 provides conclusions and some policy recommendations.

2. Longitudinal Expenditure Data for Estimating Economic Mobility

Longitudinal data, gathered from the same individual/household for different time periods, allow measurement of economic mobility by estimating the number of individuals/households who moved from different welfare status or remained the same over time. Income and consumption are often used as an indicator of households' well-being in monetary terms. Although Haughton and Khandker (2009) cited some benefits and drawbacks in using one over the other, household consumption expenditure is used more often in developing countries as a comprehensive measure of welfare (Deaton, 1997). In this study, household consumption expenditure is mainly used to indicate welfare status and any reference to income describes household consumption expenditure. For this study, the Philippine Family Income and Expenditure Survey (FIES) and Indonesia Family Life Survey (IFLS) are the primary data sources of household consumption expenditure as well as information on household and individual characteristics.

The FIES is conducted every three years and is a major source of data on income and expenditure in the Philippines. In 2003, modifications on the use of master sample for the conduct of FIES in the Philippines allowed for the same sample households used in previous waves to be included again in the subsequent waves (Ericta and Fabian, 2009). This method, therefore, provides an opportunity to track the same sample households over time. The main data collection instrument for this survey obtains detailed data on consumption, income, and several household characteristics. From the full sample of about 44,000 households surveyed all over the Philippines for years 2003, 2006, and 2009, a panel household dataset is constructed. The panel dataset which consists of 6,159 sample households observed in all survey years is used in all analyses in this study. Attrition-adjusted weights are used in all computations throughout

the paper. The cross-sectional household weights for 2009 are multiplied by the household size.

On the other hand, the Indonesian Family Life Survey is an ongoing longitudinal panel survey first conducted in 1993 by RAND Corporation in collaboration with several stakeholders. It is based on a sample of households from 13 provinces representing about 83% of the country's population in 1993. The survey uses two data collection instruments that gather detailed data about the household and its members including expenditure and income as well as community-level information. Between 1993 and 2007, four waves of the survey were conducted in 1993, 1997, 2000, and 2007. From the 33,081 identified individuals in wave one, 21,971 constitute the panel individuals or individuals who were surveyed in all four years. In this paper, all analyses for Indonesia are based on the constructed panel individuals, but with emphasis on reference years 2000 to 2007 only. Cross-sectional and longitudinal weights with adjustment for attrition are also incorporated in all computations.

To facilitate comparison over time, all estimates for both countries are expressed in annual per capita household expenditure in constant 2011 US$ purchasing power parity (PPP). To account for regional price differences in the Philippines, regional deflators derived from the spatial price indices estimated by Sta. Ana and Varona (2012) are employed using National Capital Region as the benchmark. For Indonesia, provincial deflators using 2007 provincial poverty lines and Jakarta as the base are also incorporated to account for provincial price differences.

3. Methods

To investigate how population size shapes a person's economic mobility prospects, we classify cities and all municipalities with more than half of its population living in urban villages into one of the following categories:

- Micro Urban: $N \leq 100{,}000$
- Small Urban: $100{,}000 < N \leq 500{,}000$
- Medium City: $500{,}000 < N \leq 1{,}000{,}000$
- Metropolitan: $1{,}000{,}000 < N \leq 5{,}000{,}0000$
- Megacity: $N > 5{,}000{,}000$

On the other hand, following the approach adopted by Martinez et al. (2014), we use various measures of economic mobility to provide a comprehensive perspective of people's economic well-being. In particular, we measure the mobility of income as movement, origin independence and equalizer of long-term income levels. To describe mobility as a movement, we determine both relative and absolute mobility. For analysis of relative mobility, we order the individual incomes for each wave from lowest to highest. We then divide it into 20 equally-sized groups called vingtile, subsequently determining the changes in individual's

income ranking relative to others. To describe economic mobility as origin independence, we measure the correlation between the first and final period income ranks for each wave. For absolute mobility analysis, we determine the change in the amount of income between the observation periods as well as percent change in income relative to first observation period. We then supplement the analysis with mobility curves which show the proportion of people experiencing upward or downward mobility at various points of the income distribution.

We further examine mobility by constructing transition matrices based on six defined income classes and then identify movements among these classes. Individuals living on less than or equal to $1.9 PPP a day are considered extremely poor and those living between $1.90 and $3.10 a day are moderately poor. Individuals with daily per capita expenditure higher than $3.10 to $5.5 are categorized as vulnerable, those with more than $5.5 to $15 are economically secure, and those with higher than $15 to $50 belong to middle class. Individuals living on more than $50 a day are considered rich. Based on the transition matrices, we measure origin dependence through income class persistence in which individuals remain in the same income class for both the initial and final period.

We also determine the degree to which mobility works to even out long-term incomes using the stability index suggested by Shorrocks (1978) and described in Martinez et al. (2014). For each inequality measure namely Gini coefficient, Theil Index and mean log deviation, the index provides an estimate of how much economic mobility reduces the cross-sectional inequality using the average income of the observation periods.

Lastly, we employ multinomial logistic regression to investigate how city size affects economic mobility based on three general scenarios of mobility. Between observation periods, individuals may experience an upward change in income class (climbers), downward change (sliders) or remain in the same class (stayers). We also explore factors that influence mobility including location, individual and family characteristics, education, employment, owned assets, and community characteristics.

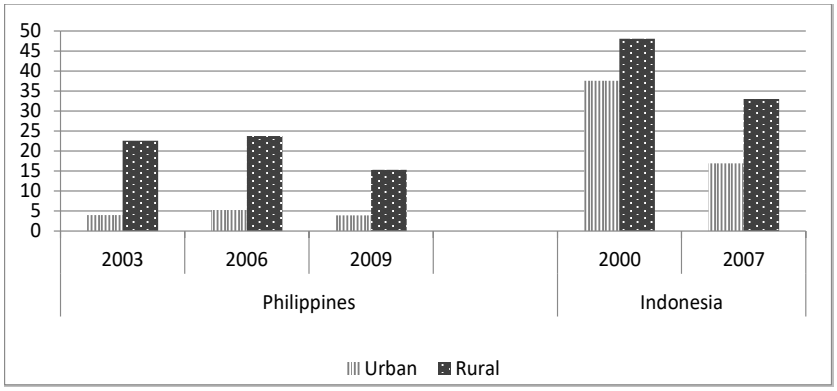
4. Empirical Findings

4.1 Overview of economic mobility in urban and rural areas

Results based on the panel data reveal that the proportion of extremely poor individuals (i.e., individuals living below $1.90 a day) declined during the period 2003-2009 and 2000-2007 in the Philippines and Indonesia, respectively, with the latter having a higher reduction. Still, rural areas in both countries had substantially higher extreme poverty rate than urban areas, but more pronounced in the Philippines. In addition, the extreme poverty rate in Indonesia is declining

faster in urban areas, while in the Philippines extreme poverty rate is declining faster in rural areas (Figure 1).

Figure 1. Percentage of Extreme Poor Population, Philippines and Indonesia, Urban and Rural Areas



Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009). and Indonesian Family Life Survey (1993), (1997), (2000) and (2007).

However, income as a measure of well-being changes over time in which some individuals move up, and some move down the income distribution. Therefore, it is more telling to examine economic mobility, the changes in individual's income over time, in different perspectives to capture the real individual changes in well-being.

Findings on different measures of mobility between urban and rural areas in both countries indicate varying trends. Relative mobility is higher in Indonesia than in the Philippines and particularly higher in rural areas in both countries. In general, at least 9 in 10 individuals moved to another vingtile, but relatively higher proportion of individuals in rural areas moved to another vingtile compared in urban areas. Furthermore, we find that rank correlation for the Philippines is greater than in Indonesia, with urban areas having higher correlation estimates for both countries. This suggests that final period income rank of Filipino individuals, particularly those living in urban areas, strongly depends on their initial period income rank. Results, however, suggest a different trend for absolute mobility. The Philippines is more mobile than Indonesia in absolute terms, with individuals in rural areas having higher absolute mobility than their urban counterpart. In contrast to this, individuals in urban areas in Indonesia have higher absolute mobility than in rural areas. Extreme poverty in Indonesia is higher and more persistent in rural areas, whereas in the Philippines, it is equally persistent in both areas. Inter-class mobility in the Philippines is higher among the poor in urban areas, and among the most affluent in rural areas, while in Indonesia, the

middle class is the most mobile regardless of where they are located. Economic mobility in Indonesia has resulted in greater reduction in inequality than in the Philippines, with Indonesians in urban areas benefiting more than those in rural areas. Although the reduction in inequality is lower in the Philippines, but urban and rural population are able to benefit from it almost equally. In general, these findings indicate that despite having relatively low poverty rate, incomes of individuals in urban areas are less mobile compared to its rural counterpart across several measures of mobility.

However, in reality, people live in different types of settlements from rural areas to megacities. With the rapid urbanization experienced by both countries, heterogeneity among urban areas becomes evident (WB, 2013). Hence, differentials in income and poverty among urban individuals may be driven by the differences in the size of the city defined in terms of population size.

We then compute the poverty incidence for each type of urban using the 2012 small area poverty estimates for the Philippines and 2010 small-area poverty estimates for Indonesia. A total of 202 cities and municipalities in the Philippines and 127 in Indonesia are included in the analysis.

About 94% of the cities/municipalities in the Philippines are small-sized (i.e., small and micro urban) with only one megacity, 2 metropolitans, and 9 medium cities. In Indonesia, more than half are small-sized cities/municipalities but mostly are classified as small urban (48%). More than a quarter is identified as metropolitan; around 14% are medium cities and 3 are megacities.

Variations in poverty incidence across city sizes are particularly notable in the Philippines. Excluding medium cities, poverty rate increases as the population size of urban areas decreases. As shown in Table 1, megacities have the lowest poverty incidence at 2% and micro urban areas have the highest incidence at 21.1%. Although for Indonesia megacities have the lowest incidence (5.3%), still poverty rates do not significantly differ across types of urban areas. Specifically, poverty rates do not vary much from 8% to 10%.

Table 1. Poverty Incidence by Type of Urban Area using Small Area Estimates, Philippines (2012) and Indonesia (2010)

Type of Urban Area	Poverty Rate	
	Philippines	Indonesia
Micro-urban	21.1	8.2
Small Urban	12.4	9.8
Medium Cities	6.6	9.1
Metropolitan	11.0	10.0
Megacities	2.0	5.3

Source: Authors' computations using Philippines (2012) and Indonesia (2010) small-area poverty estimates

4.2. Economic mobility in urban areas of different sizes

To better understand the variations in mobility among different city sizes, we restrict our analysis to panel individuals residing in different types of urban settlement. For each type of urban area, we employ the same measures of economic mobility discussed in section 4.1.

4.2.1. Relative mobility

We first look into economic mobility as a change in individual's income relative to the income of other members of the population. The results in Table 2 for the Philippines reveal that non-directional relative mobility is higher in micro urban areas as well as upward relative mobility. The average number of non-directional vingtiles moved slightly decreases with population size, with micro urban areas being the highest and megacities being the lowest. Considering the direction of the movements across vingtiles, individuals in micro urban areas generally shifted to higher vingtiles and even higher deciles, while the rest experienced downward mobility (e.g., megacity, metropolitan, and small urban) or no directional mobility at all (e.g., medium city). Among the types of urban

Table 2. Summary of Relative Economic Mobility Measures by Type of Urban Area, Philippines, 2003-2009

Economic mobility indicator	2003-2009				
	Megacity	Metropolitan	Medium City	Small Urban	Micro Urban
Average number of vingtiles moved (non-directional)	2.26	2.47	2.56	2.75	2.76
Average number of vingtiles moved (directional)	-0.53	-0.56	0.00	-0.51	0.11
Proportion of population remaining in leading diagonals	0.23	0.16	0.11	0.17	0.12
Proportion of population moving one vingtile up	0.12	0.13	0.14	0.11	0.11
Proportion of population moving one vingtile down	0.12	0.12	0.15	0.13	0.15
Proportion of population moving two vingtiles up	0.07	0.08	0.06	0.06	0.07
Proportion of population moving two vingtiles down	0.10	0.13	0.13	0.10	0.09
Proportion of population moving at least three vingtiles up	0.14	0.16	0.21	0.18	0.25
Proportion of population moving at least three vingtiles down	0.23	0.22	0.21	0.25	0.20
Correlation of income ranks	0.69	0.82	0.76	0.79	0.81

Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009).

areas, megacities have the highest number of the population who remained in the same vingtile, and the highest proportion of the population who remained in the same decile between observation periods. Although both micro-urban and medium cities have relatively more individuals who moved to different vingtiles, micro-urban areas experienced a more upward shift, whereas, in medium cities, the amount of upward shift in vingtiles was canceled out by the downward shift.

Among the types of urban areas, rank correlation is higher among individuals in metropolitan and micro-urban areas and lowest among individuals in megacities. This implies that final year income rank of individuals in metropolitan and micro urban areas is determined by its income rank in the initial year. This further indicates that across types of urban, megacities have high mobility in terms of origin independence.

In Indonesia (Table 3), higher relative mobility is experienced by megacities and metropolitan areas, either in directional or non-directional context. The average number of vingtiles moved (non-directional) is highest in metropolitan areas, but the negative average directional vingtiles for this area indicates downward relative mobility, in general. This is mostly due to one-third of the individuals in

Table 3. Summary of Relative Economic Mobility Measures by Type of Urban Area, Indonesia, 2000-2007

Economic mobility indicator	2000-2007				
	Megacity	Metropolitan	Medium City	Small Urban	Micro Urban
Average number of vingtiles moved (non-directional)	3.51	4.62	4.29	4.19	4.48
Average number of vingtiles moved (directional)	1.32	-0.13	0.26	1.02	0.86
Proportion of population remaining in leading diagonals	0.14	0.08	0.11	0.12	0.09
Proportion of population moving one vingtile up	0.14	0.07	0.09	0.09	0.08
Proportion of population moving one vingtile down	0.07	0.09	0.07	0.07	0.05
Proportion of population moving two vingtiles up	0.05	0.06	0.10	0.07	0.05
Proportion of population moving two vingtiles down	0.04	0.07	0.06	0.05	0.13
Proportion of population moving at least three vingtiles up	0.41	0.30	0.29	0.36	0.37
Proportion of population moving at least three vingtiles down	0.16	0.33	0.27	0.24	0.23
Correlation of income ranks	0.62	0.46	0.57	0.58	0.22

Source: Authors' computations using the Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

2000 moving to a lower decile in 2007. On the contrary, the rest of urban types experienced upward movement. Even if average non-directional vingtiles moved is lowest in megacities, but it has experienced the greatest movement towards higher decile. Across all types of urban areas, at least 9 in every 10 individuals in megacities moved among vingtiles, but at least 4 of these still remained on the same decile during the observation periods.

Among types of urban areas, megacities have a strong rank correlation at 0.62, while micro urban areas' rank correlation is relatively weak at 0.22. In this case, initial income ranks of individuals in megacities are more likely to determine their final income ranks compared to micro urban areas. In contrast to relative mobility results, mobility is highest in micro urban areas than in megacities when the origin independence approach is used.

4.2.2. Absolute economic mobility

As relative mobility determines mobility based on changes in income ranking, no relative mobility will be measured if the income of all members of the population increased by a constant proportional amount. In this case, the individual amount of income in absolute terms has changed, in fact, it increased, but the income ranking remains the same. Hence, to provide a complete picture of economic mobility, we determine absolute mobility by measuring the change in income with respect to initial income. Tables 4 and 5 summarize the indicators of absolute economic mobility for the Philippines and Indonesia, respectively. In the case of the Philippines, megacities had the highest average absolute change while micro urban areas had the lowest absolute change between 2003 and 2009. Almost all types of urban areas experienced a change in income of about 40% compared to

Table 4. Summary of Economic Mobility Measures in 2011 PPP US$ by Type of Urban Area, Philippines, 2003-2009

Economic Mobility Indicator	Estimate*				
	Megacity	Metropolitan	Medium City	Small Urban	Micro Urban
Average absolute change |Income2009 − Income2003|	1502.82	918.09	1076.49	959.44	811.13
Average absolute percentage change |Income2009 − Income2003|/ Income2003	0.40	0.36	0.03	0.40	0.41
Average income change (Income2009 − Income2003)	30.88	-16.51	103.38	101.65	186.68
Average percentage change (Income2009 − Income2003) /Income2003	0.11	0.10	0.04	0.13	0.20

**Estimates are expressed in annual per capita household expenditure*
Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009)

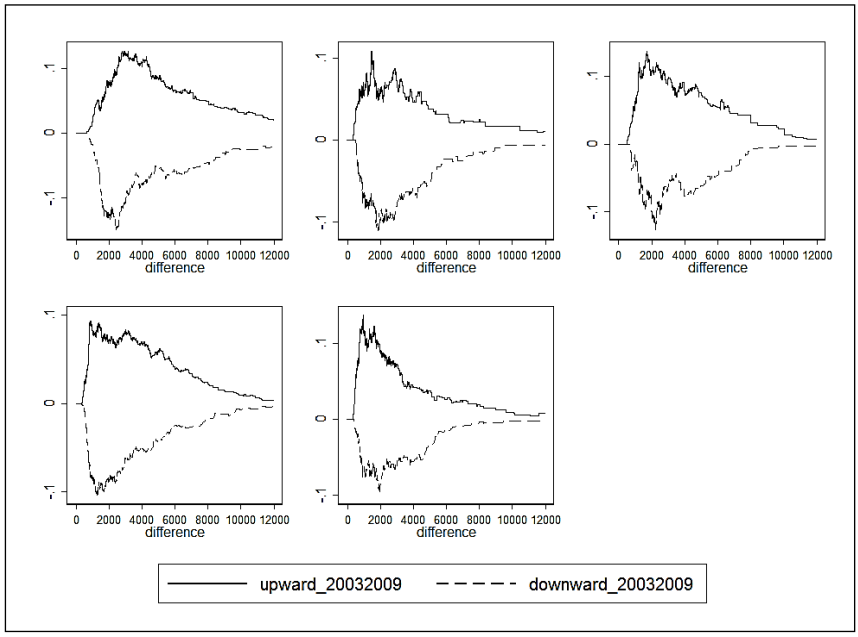
Table 5. Summary of Economic Mobility Measures in 2011 PPP US$, by Type of Urban Area, Indonesia, 2000-2007

Economic Mobility Indicator	Estimate*				
	Megacity	Metropolitan	Medium City	Small Urban	Micro Urban
Average absolute change ($Income_{2007} - Income_{2000}$)	1188.89	639.28	756.51	809.50	769.56
Average absolute percentage change ($Income_{2007} - Income_{2000}$/ $Income_{2000}$)	1.09	0.81	0.92	0.94	0.98
Average income change ($Income_{2007} - Income_{2000}$)	919.00	352.07	420.51	564.24	553.17
Average percentage change ($Income_{2007} - Income_{2000}$)/ $Income_{2000}$	1.00	0.64	0.77	0.81	0.86

**Estimates are expressed in annual per capita household expenditure*
Source: Authors' computations using the Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

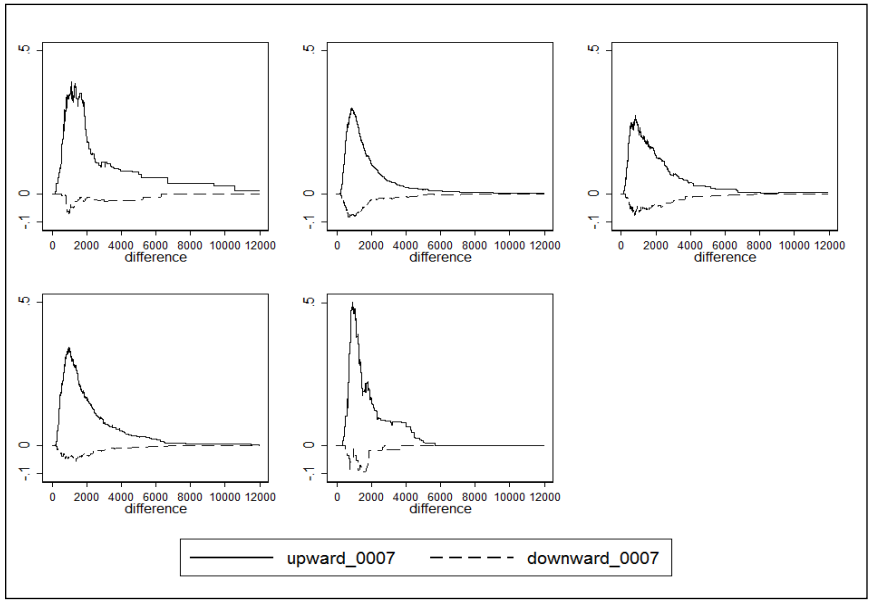
the initial year, with the exception of medium cities in which change is negligible at less than 1%. While the rest of the urban types experienced an increase in income, metropolitan areas experienced lower income in 2009 compared to 2003 in which income decreased by 10%, on average. Micro-urban, on the other hand, had the highest increase in income from 2003 to 2009 by about 20%.

Similar to the trend in the Philippines, megacities in Indonesia have higher average absolute change among the types of urban, but metropolitan areas have relatively lower absolute change. From 2000 to 2007 income significantly increased in all types of urban in Indonesia as shown in Table 5. In fact, average income in megacities doubled after seven years. Even though metropolitan areas experienced a 64 percentage-point increase in average income with respect to income in 2000, still it recorded the lowest change in income between 2000 and 2007 among the types of urban in Indonesia. To visualize absolute mobility, we use mobility curve and show the proportion of people (y-axis) whose incomes increased or decreased across income cut-off points (x-axis). Mobility curves for the urban areas in the Philippines (Figure 2) reflect a nearly symmetric pattern of positive and negative mobility which implies that for every individual experiencing an increase in income, there is another individual experiencing a decrease in income of the same amount. Among the types of urban, total absolute mobility is highest in megacities and lowest in micro urban areas. In the case of Indonesia, the mobility curves for urban areas as shown in Figure 3 are asymmetric with more individuals experiencing upward mobility, and few individuals experiencing downward mobility.



Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009).

Figure 2. Mobility Curves, by Type of Urban Area, Philippines, 2003-2009



Source: Authors' computations using Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

Figure 3. Mobility Curves, by Type of Urban Area, Indonesia, 2000-2007

4.2.3. Mobility across income classes

Classifying the individual incomes into vingtile does not necessarily provide information in changes in their poverty status. Hence, to measure mobility in the context of income poverty, we group the individual incomes into classes based on global poverty lines as described in Methods section.

In both megacities and medium cities, at least half of the population is in the higher income classes such as economically secure, middle class and rich. On the other hand, a majority of the individuals in metropolitan, micro-urban and small urban areas, belong to extremely poor, moderately poor and vulnerable classes. Notably, these trends are consistent across the observation periods. In Indonesia, at least 9 in every 10 individuals belonged to lower income classes across urban types in 2000. Seven years after, megacities, micro-urban and small urban areas experienced a large drop in the number of extremely poor people, but still, a large chunk of the population was in moderate poor and vulnerable classes. On the other hand, metropolitan and medium cities still have a majority of its population as extremely poor, moderately poor and vulnerable. The transition matrices (Tables 6-10) constructed for each type of urban area in the Philippines show that extreme poor individuals are the most mobile income class for all urban types, with the exception of metropolitan areas. Extreme poor people living in megacities and medium cities experience greater upward mobility than those living in metropolitan and small and micro urban areas. On the other hand, at least 4 in every 10 extreme poor people in 2003 residing in metropolitan and small and micro urban areas continued to be extremely poor in 2009. Across all types of urban areas, individuals who belong to vulnerable and economically secure classes are the least mobile wherein majority of them remained in the same income class between 2003 and 2009. Furthermore, the middle class in metropolitan areas is the most mobile as compared with the same class in other urban areas, with only one-third of the middle class in 2003 remained in the same class in 2009. Rich people in small and micro urban areas are more likely to remain rich than those living in megacities.

In general, individuals residing in megacities experienced greater upward mobility than those in other types of urban area. From 2000 to 2007, extreme poor individuals who reside in megacities and micro urban areas experienced more upward mobility than those residing in metropolitan, medium cities and small urban. Notably, extreme poverty persistence was high in medium cities wherein half of the extreme poor in 2003 remained the same in 2007. In most urban types, economically secure people are the least mobile wherein at least half remained in the same class after 7 years. The middle class, on the other hand, is consistently the most mobile across urban types. In fact, in megacities and medium cities, all individuals classified in the middle class in 2000 shifted to another income class after 7 years.

Table 6. (Absolute) Transition Matrix based on per Capita Income, Megacities, Philippines, 2003–2009

2003	2009					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0	0	1	0	0	0
Moderate poor	0	0.175	0.513	0.312	0	0
Vulnerable	0	0.132	0.589	0.279	0	0
Economically secure	0	0.006	0.222	0.645	0.126	0.002
Middle class	0	0	0.011	0.398	0.574	0.017
Rich	0	0	0	0	0.777	0.223

Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009).

Table 7. (Absolute) Transition Matrix based on per Capita Income, Metropolitan, Philippines, 2003–2009

2003	2009					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0.3569	0.4544	0.1887	0	0	0
Moderate poor	0.16	0.4759	0.3404	0.0236	0	0
Vulnerable	0.0513	0.1463	0.6259	0.1672	0.0094	0
Economically secure	0	0.0312	0.2165	0.6771	0.0698	0.0054
Middle class	0	0	0	0.6412	0.3444	0.0145
Rich	0	0	0	0	0	0

Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009).

Table 8. (Absolute) Transition Matrix based on per Capita Income, Medium Cities, Philippines, 2003–2009

2003	2009					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0	0.6281	0.3719	0	0	0
Moderate poor	0.0262	0.4523	0.3829	0.1386	0	0
Vulnerable	0	0.1228	0.5868	0.2793	0.0111	0
Economically secure	0	0.0026	0.2247	0.6507	0.1202	0.0018
Middle class	0	0	0	0.5363	0.4376	0.0262
Rich	0	0	0	0	0	0

Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009).

Table 9. (Absolute) Transition Matrix based on per Capita Income, Small Urban, Philippines, 2003–2009

2003	2009					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0.4418	0.3806	0.1735	0.0041	0	0
Moderate poor	0.1682	0.4935	0.2868	0.0515	0	0
Vulnerable	0.0422	0.2412	0.5061	0.2001	0.0104	0
Economically secure	0	0.0309	0.2027	0.6391	0.126	0.0013
Middle class	0	0	0.0062	0.5078	0.4723	0.0136
Rich	0	0	0	0	0	1

Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009).

Table 10. (Absolute) Transition Matrix based on per Capita Income, Micro Urban, Philippines, 2003–2009

2003	2009					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0.4479	0.4251	0.1269	0	0	0
Moderate poor	0.0722	0.5683	0.3118	0.0468	1.00E-03	0
Vulnerable	0.0338	0.1556	0.5442	0.2579	0.0085	0
Economically secure	0	0.042	0.2329	0.6327	0.0903	0.0021
Middle class	0	0	0.0288	0.4641	0.4782	0.0289
Rich	0	0	0	0	0	1

Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006), and (2009).

Table 11. (Absolute) Transition Matrix based on per Capita Income, Megacities, Indonesia, 2000–2007

2000	2007					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0.1283	0.5935	0.2441	0.0341	0	0
Moderate poor	0.0158	0.3122	0.5002	0.1718	0	0
Vulnerable	0.0152	0.1291	0.453	0.3534	0.0493	0
Economically secure	0	0.1018	0.0276	0.3187	0.5519	0
Middle class	0	0.1673	0	0.8327	0	0
Rich	0	0	0	0	0	0

Source: Authors' computations using Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

Table 12. (Absolute) Transition Matrix based on per Capita Income, Metropolitan, Indonesia, 2000–2007

2000	2007					
	Extreme poor	**Moderate poor**	**Vulnerable**	**Economically secure**	**Middle class**	**Rich**
Extreme poor	0.4172	0.3457	0.1888	0.0461	0.0022	0
Moderate poor	0.1835	0.3696	0.3284	0.1114	0.0071	0
Vulnerable	0.1127	0.3058	0.3198	0.2472	0.0145	0
Economically secure	0.0014	0.1609	0.2461	0.4938	0.0801	0.0177
Middle class	0	0.0126	0.1983	0.5429	0.2461	0
Rich	0	0	0	0	0	0

Source: Authors' computations using Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

Table 13. (Absolute) Transition Matrix based on per Capita Income, Medium Cities, Indonesia, 2000–2007

2000	2007					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0.5022	0.3667	0.0858	0.0425	0.0028	0
Moderate poor	0.1485	0.3461	0.3544	0.1388	0.0122	0
Vulnerable	0.0117	0.2573	0.2717	0.4479	0.0114	0
Economically secure	0.1539	0.0784	0.1983	0.4543	0.1152	0
Middle class	0	0.0106	0.5518	0.1492	0	0.2884
Rich	0	0	0	0		0

Source: Authors' computations using Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

Table 14. (Absolute) Transition Matrix based on per Capita Income, Small Urban, Indonesia, 2000–2007

2000	2007					
	Extreme poor	**Moderate poor**	**Vulnerable**	**Economically secure**	**Middle class**	**Rich**
Extreme poor	0.2941	0.4796	0.1945	0.0319	0	0
Moderate poor	0.0556	0.3493	0.3809	0.2028	0.0113	0
Vulnerable	0.0351	0.1287	0.4155	0.3547	0.066	0
Economically secure	0.0381	0.0476	0.2711	0.5053	0.1379	0
Middle class	0	0	0.3391	0.6268	0.0341	0
Rich	0	0	0	0	0	0

Source: Authors' computations using Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

Table 15. (Absolute) Transition matrix based on per capita income, Micro Urban, Indonesia, 2000–2007

2000	2007					
	Extreme poor	Moderate poor	Vulnerable	Economically secure	Middle class	Rich
Extreme poor	0.1175	0.3177	0.4167	0.148	0	0
Moderate poor	0.0841	0.2647	0.5406	0.1106	0	0
Vulnerable	0	0.0992	0.6505	0.2231	0.0272	0
Economically secure	0	0.2252	0.1111	0.6637	0	0
Middle class	0	0	0	0	0	0
Rich	0	0	0	0	0	0

Source: Authors' computations using Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

4.2.4. Economic mobility as equalizer of long-run incomes

So far, we find that the more changes in the shape (relative mobility) of income distribution as well as in the mean (absolute mobility), the more mobile the population is. In a different perspective, a more mobile population is when inequality using the average long-run income is less than the inequality at any particular observation period. Using this approach, we investigate on mobility as an equalizer of long-run incomes.

Across all measures, inequality using both single year and average income is lowest in medium cities and highest in micro urban areas in the Philippines (Table 16). While in Indonesia, the opposite trend is observed wherein inequality is highest in micro urban areas and lowest in medium cities. Regarding the equalizing effect of mobility, reduction in inequality across different types of urban areas in the Philippines does not vary significantly as compared with Indonesia. For instance, reduction in inequality ranges from 4% to 13% across all types of urban areas in the Philippines. In Indonesia, it is between 7% and 30%, wherein differences in percent reduction are stark between megacities and micro urban areas. In particular, economic mobility in micro urban areas has reduced inequality by 14% to 30%, almost double than the reduction observed in megacities.

Overall, trends in relative mobility among types of urban are different between countries. Non-directional and directional relative mobility is higher in micro urban areas in the Philippines, while megacities and metropolitan areas in Indonesia have high non-directional and directional mobility, respectively. On the other hand, absolute mobility in both countries is high among megacities. With regard to mobility as origin independence, results are also contrasting between countries, but in both countries, differences are striking between large-sized cities and small-sized cities. Megacities and micro-urban areas in the Philippines have the highest and lowest mobility, respectively in the context of origin independence,

Table 16. Inequality-reducing Effect of Economic mobility, by Type of Urban Area

	Philippines (2003-2009)				Indonesia (2000-2007)			
	GE(0)	GE(1)	Gini	GE(2)	GE(0)	GE(1)	Gini	GE(2)
Megacity								
Single-year income	0.255	0.286	0.395	0.441	0.247	0.292	0.384	0.461
Average income	0.237	0.252	0.380		0.217	0.251	0.366	
Shorrocks R	0.118	0.124	0.055		0.150	0.179	0.065	
Metropolitan								
Single-year income	0.253	0.272	0.391	0.386	0.209	0.244	0.356	0.387
Average income	0.227	0.236	0.373		0.168	0.193	0.322	
Shorrocks R	0.099	0.132	0.043		0.208	0.220	0.103	
Medium City								
Single-year income	0.228	0.242	0.374	0.322	0.292	0.334	0.421	0.549
Average income	0.198	0.205	0.351		0.241	0.274	0.385	
Shorrocks R	0.113	0.131	0.054		0.175	0.184	0.085	
Small Urban								
Single-year income	0.295	0.311	0.419	0.468	0.231	0.254	0.375	0.365
Average income	0.265	0.275	0.400		0.191	0.207	0.345	
Shorrocks R	0.092	0.105	0.042		0.178	0.190	0.083	
Micro Urban								
Single-year income	0.299	0.338	0.425	0.589	0.141	0.153	0.296	0.188
Average income	0.270	0.305	0.406		0.100	0.109	0.253	
Shorrocks R	0.084	0.086	0.038		0.296	0.298	0.148	

Source: Authors' computations using Family Income and Expenditure Survey (2003), (2006) and (2009) and Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

while in Indonesia, the opposite trend holds. Micro-urban areas in Indonesia benefitted the most from the equalizing effect of economic mobility, while in the Philippines; reduction in inequality is almost the same across types of urban areas.

4.3. Statistical Models

To investigate the impact of city size on upward mobility, we employ multinomial logistic regression considering several factors such as location, individual and family characteristics, education, employment, owned assets, and community characteristics. We first describe the profile of individuals in different income movement scenarios—sliders, stayers, and climbers based on several factors. Then, we present the results of the multinomial regression.

4.3.1. Profile of sliders, stayers, and climbers

In the case of Philippines, individual, household and community characteristics vary among sliders, stayers, and climbers. Those who experienced upward mobility or climbers have older heads of the family, who are usually

male, married and have attained at least primary education. Climbers also have a higher proportion of young members aged 15 and below and are living with non-related individuals or with extended family hence they have bigger family size. In contrast, sliders have family heads that are relatively young; single, widowed or separated. They also belong to single families which typically have a smaller number of members. They have a higher proportion of employed members, although the proportion of members with the permanent job or formal job does not differ significantly with the rest of the group. Sliders and stayers have almost the same characteristics but stayers have attained higher education mostly tertiary level and have a higher proportion of household members working abroad compared to stayers.

Ownership of assets (e.g., refrigerator, phone, washing machine, and vehicle for transportation) does not differ significantly among the groups, but ownership of assets is higher among stayers compared with climbers. On the other hand, access to electricity and access to water and sanitation facilities are higher among stayers except for access to house/land which is higher among climbers. Community characteristics do not vary significantly among groups but climbers are notably residing in agri-villages and with access to educational facilities. On the other hand, sliders have more access to health, economic and social facilities such as a hospital, town hall, and markets.

Furthermore, the distribution of sliders, stayers, and climbers varies across population size. Climbers are mostly concentrated in medium cities and micro urban areas, while sliders are located in megacities and small urban areas. On the other hand, stayers are mostly in metropolitan areas. Consistent with this, the proportion of climbers is relatively higher in Visayas and Mindanao areas where small-sized cities are located, while a majority of sliders and stayers are in Luzon area where large cities are located in the National Capital Region.

The profile of climbers in Indonesia is notably different from climbers in the Philippines. In fact, climbers in Indonesia are younger, single and with at least secondary or tertiary level of education. Climbers have larger households similar to stayers but they belong to a single family with a lower proportion of young household members. On the contrary, sliders and stayers are older, married, separated or widowed and have reached at least primary education. The proportion of working household members is almost the same among groups but the majority of climbers are initially unemployed, while sliders are mostly self-employed. Access to facilities does not differ greatly among groups but climbers have relatively higher access to water and sanitation facilities. Differences in community characteristics among groups are apparent in terms of proximity to educational and health facilities and water and information-related infrastructures. In particular, climbers are mostly residing in villages with a hospital, public telephone, and waterworks system, while sliders are residing in villages with educational facilities.

Climbers are mostly located in both large and small cities such as megacities, and small and micro urban areas which are usually found outside Java Island like Sulawesi, Kalimantan, and Sumatra. On the other hand, sliders commonly reside in metropolitan areas and in the Lesser Sunda Islands, while most of the stayers are living in medium cities.

4.3.2. Factors associated with economic mobility in urban areas

In general, city size, family size, educational attainment, employment, location, information and communication-related assets, as well as access to education, health, and water facilities are factors associated with mobility across countries, either downward or upward mobility. However, results of multinomial regression for each country for some indicators suggest contrasting and counter-intuitive findings as shown in Tables 17 and 18.

City size has mixed effect on mobility among individuals between countries. For instance, city size has a negative but significant impact on the probability of Indonesians to experience upward mobility, but its effect on the probability of Filipinos to experience upward mobility is positive. Although not significant, individuals residing in micro and medium-sized cities in the Philippines have a higher probability of experiencing upward mobility compared to megacities. In the case of Indonesia, the probability of individuals of experiencing upward mobility is almost the same across city size, but the probability of individuals experiencing downward mobility decreases as the population size of the city decreases.

Although some findings are counter-intuitive, household characteristics have a significant effect on upward mobility. For both countries, an additional family/household member increases the probability of being a climber. Controlling for other factors, an increase in the proportion of young members in Indonesian household/family increases the probability of experiencing upward mobility by 11%. On the other hand, extended families in Indonesia have a lower probability of moving upwards.

Education plays a significant role in promoting upward mobility in both countries. In the Philippines, the probability of families with heads who have at least tertiary level of education is 8% higher than those who reached a primary level only. Residing in villages with close proximity to school facilities promotes upward mobility as well. Individuals in Indonesia who have at least secondary education have a higher probability of moving upwards than those who have at least primary education.

Employment negatively affects upward mobility in both countries. The increase in the proportion of working members in the Philippines and Indonesia lowers the chance of resulting in upward mobility. Ownership of assets such as TV and information gadgets increases the probability of upward mobility. However, community characteristics resulted in contrasting findings on mobility. The presence of water and health facilities in the villages significantly increases

the probability of Indonesians in experiencing upward mobility, whereas in the Philippines; the presence of water- and communication-related infrastructures in the villages lowers the probability of individuals to move upwards.

Table 17. Regression Coefficients of Multinomial Logistic Model, Philippines, 2003-2009 (N=2455)

Variable	Sliders	Climbers
Type of Urban Area (base=Megacity)		
1 if person lives in an urban area that is classified as metropolitan	0.0034	-0.2279
1 if person lives in an urban area that is classified as a medium city	-0.1842	0.2480
1 if person lives in an urban area that is classified as small urban	0.1137	0.0268
1 if person lives in an urban area that is classified as micro-urban	-0.1200	0.2367
Main Island (base=Luzon)		
1 if person lives in Visayas	-0.0778	0.0114
1 if person lives in Mindanao	0.2461	0.2097
1 if person lives in a male-headed household	-0.1786	0.0158
age (in yrs)	-0.0199	0.0312
Age squared	0.0001	-0.0002
Marital Status (base=Single)		
1 if person is married	-0.2380	-0.4737
1 if person is widowed/separated	-0.3614	-0.4331
Highest Level of School Attended (base=Primary education)		
1 if person reached secondary education	-0.0350	0.0997
1 if person reached tertiary education	-.5436**	0.3112
Household type (base=single family)		
1 if person lives in a household with an extended family	0.0816	0.0600
1 if person lives in a household with two or more non-related individuals	-0.4517	0.2107
Proportion of HH members who are young	-0.0803	-0.2872
Family size	-.1289***	.1413***
1 if person lives in an agricultural household	-.33*	0.1033
1 if person lives in a household where at least one member is working abroad	-0.1340	0.0554
Proportion of employed household members	0.3579	-.4513**
Proportion of employed members with permanent job	-0.1597	0.0847
Proportion of employed members with formal job	0.1185	-0.1746
Owns land/house	-0.1296	0.1386
Type of toilet facility (base=water-sealed)		
1 if person lives in a household with a closed pit toilet facility	0.0879	0.0757
1 if person lives in a household with an open pit/others toilet	0.0746	0.2036
1 if person lives in a household that has access to electricity	-0.0880	-0.2418
1 if person lives in a household that has access to water faucet	-0.0790	0.1563
1 if a person lives in a household that owns a refrigerator	-.2603*	-.2403*

1 if a person lives in a household that owns information gadget	0.1814	.432**
1 if a person lives in a household that owns phone	-0.1543	-.4227***
1 if a person lives in a household that owns washing machine	0.1876	-.3798**
1 if a person lives in a household that owns transportation vehicle	0.1462	0.0324
1 if a person lives in a village that is classified as agricultural	-.2959*	0.0283
1 if a person lives in a village with street pattern	-0.2920	0.0198
1 if a person lives in a village that is situated near national highway	-0.0339	0.3794
1 if a person lives in a village that has a town hall	0.1476	-.8308***
1 if a person lives in a village that has public markets	0.1711	-0.0591
1 if a person lives in a village that has elementary or secondary school	-0.1691	.3286*
1 if a person lives in a village that has a hospital	-0.0095	0.1413
1 if a person lives in a village that has cellphone signal	0.0873	-.5019*
1 if a person lives in a village that has waterworks system	.3757**	-.6115***
Intercept	0.7102	-1.695**

** p<.1; ** p<.05; *** p<.01*

Source: Family Income and Expenditure Survey (2003), (2006), and (2009).

Table 18. Regression Coefficients of Multinomial Logistic Model, Indonesia, 2003-2009 (N=8070)

Variable	Sliders	Climbers
Type of urban area (base=Megacity)		
1 if a person lives in an urban area that is classified as metropolitan	0.1610	-.4939***
1 if a person lives in an urban area that is classified as a medium city	-0.1662	-.613***
1 if a person lives in an urban area that is classified as small urban	0.1112	-.477***
1 if a person lives in an urban area that is classified as micro-urban	0.5409	-0.2160
Main island (base=Java)		
1 if a person lives in Sulawesi	.5808**	.8543***
1 if a person lives in Kalimantan	0.3596	-0.0467
1 if a person lives in Sumatra	-.2236*	.3237***
1 if a person lives in Lesser Sunda Islands	-0.1328	-.2775***
1 if a person is male	0.1124	0.0444
Age (in yrs)	0.0061	-0.0066
Age squared	-0.0001	0.0000
Marital status (base=Single)		
1 if a person is married	0.0490	-0.1322
1 if a person is widowed/separated	0.2743	0.0249
Highest level of school attended (base=Primary education)		
1 if a person reached secondary education	0.1183	0.0776
1 if a person reached tertiary education	.4217**	-0.0439
Household type (base=Single family)		
1 if a person lives in a household that has extended family	-0.0186	-0.0204

1 if a person lives in a household with two or more non-related individuals	-10.9500	0.3216
Proportion of HH members who are young	0.0067	-0.2360
Household size	-.08142***	-0.0107
Work status (base=Unemployed)		
1 if a person is self-employed	0.1654	-0.0201
1 if a person is a government or private employee	-0.0366	0.0144
1 if a person is a family worker or any unpaid worker	0.2399	0.1559
Proportion of working household members	-0.3658	-0.0352
1 if a person owns land/house	.2798**	0.0373
1 if a person lives in a household that has access to electricity	.7963***	0.1693
1 if a person lives in a household that has access to toilet facility	.3044***	.2489***
1 if a person lives in a household that has access to piped water	0.0751	0.0651
1 if a person lives in a household that owns refrigerator	.5752***	.3087***
1 if a person lives in a household that owns TV	-.2678***	0.0767
1 if a person lives in a village that has public markets	0.0867	.2597***
1 if a person lives in a village that has public telephone	0.0180	0.0446
1 if a person lives in a village that has piped water system	0.0815	.33***
1 if a person lives in a village that has elementary or secondary school	0.0284	-.2169***
1 if a person lives in a village has hospital	-0.1812	-0.0456
1 if a person lives in an agricultural village	0.0632	.2062***
Intercept	-2.135***	.5842**
1 if a person lives in a village that has public markets	0.1711	-0.0591
1 if a person lives in a village that has elementary or secondary school	-0.1691	.3286*
1 if a person lives in a village that has a hospital	-0.0095	0.1413
1 if a person lives in a village that has cellphone signal	0.0873	-.5019*
1 if a person lives in a village that has waterworks system	.3757**	-.6115***
Intercept	0.7102	-1.695**

** p<.1; ** p<.05; *** p<.01*

Source: Authors' computations using Indonesian Family Life Survey (1993), (1997), (2000), and (2007).

5. Summary

Concomitant with the steady rise in urbanization is the increase in urban poverty and urban inequality in which it challenges the achievements of the SDG 1- No poverty and SDG 10 - Reducing inequality. Recognizing that urban poverty and urban inequality are dynamic processes, this study contributes to the understanding of economic mobility patterns of individuals residing in urban areas of different sizes. It also provides an understanding of the role of city size, among other factors, in the mobility of the urban population. Using longitudinal data of the Philippines and Indonesia during the period 2003-2009 and 2000-2007, respectively, the study presents evidence of heterogeneity within urban areas in the context of economic mobility. Although results are contrasting between

countries, large-sized and small-sized urban areas either experienced the highest or the lowest mobility depending on the measure of mobility. Across different types of urban areas, the poor has gained much in terms of income, and the middle class and the rich experienced income losses. Moreover, the findings of the study highlight how economic mobility of Filipinos and Indonesians vary across urban areas of different sizes. The probability of individuals in Indonesia experiencing significant downward mobility increases as population size of urban increases. In the Philippines, micro-urban and medium cities are more likely to experience upward mobility. Moreover, improvements in education are one of the significant ways to improve the income of individuals in urban areas.

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