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The Composition and Distribution of Household Wealth in Indonesia

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Abstract

As a developing country, Indonesia still suffers from inequality among classes. This inequality is reflected in the unequal distribution of wealth owned by households. Thus, the descriptive information related to household wealth is an initial attempt to examine the composition and distribution of household wealth in Indonesia. This is descriptive research, employing information from the Indonesian Family Life Survey (IFLS) wave 5. The focus in this research is the mean, median, and distribution of wealth components seen from age groups and quantiles perspectives. The results of this research are: (1) household wealth in Indonesia is unequally distributed. Even though the mean total wealth is 147 million rupiah, but the middle household (median) receive 56.8 million rupiah. (2) The 10^{th} decile is the wealthiest social class, with wealth more than 500 times bigger than the 1^{st} decile. (3) From an age group perspective, the 30-44 years old age group is the wealthiest. (4) There is the existence of negative net wealth. The negative net wealth required further action that cannot easily be approached by the descriptive method.

Keywords: household wealth, wealth distribution, negative wealth,
JEL Classification: D31, E01, E21, R20, D10

INTRODUCTION

Inequality problems exist in many developing countries including Indonesia. This problem is reflected in the unequal distribution of national welfare. Many attempts tried to explain inequality. Mostly they use the income approach as a tool of analysis, like Soseco (2010) and Soseco, et.al (2017). Very little attention is aimed at the wealth approach. There are at least two reasons behind this. Firstly, people usually look only at the changes or differences in the result (i.e. income) rather than the accumulation of the results (i.e. wealth) (Taleb, 2008). Secondly, people usually hide their wealth to avoid public disclosure, especially if they obtain their wealth through personal connections and corrupt practices (World Bank, 2016). Hiding wealth also benefits them from security issues especially in developing countries such as Indonesia.

Household wealth is an accumulation of income and the value of the asset. Income earned by households will be used to purchase a selection of assets that give two functions, i.e. to store value and to provide a return. For example,

households who buy land outside the farm expect they can store money value in that land (by converting cash to the land) and gain a return if they sell the land in the future.

To gain information regarding household wealth, respondents are asked about their assets and appraise them at a current market price. Therefore, there is a possibility that the respondents overvalue or undervalue their assets. The main reason is they do not aware of the current market price, especially for assets that will not sell in near future. Another reason is the tendency for someone to hide his/her wealth. The contrary but rarely exist condition is the tendency for someone to blow up his/her wealth.

Several attempts try to understand the components of household wealth. Olliver & Shapiro (1990) stated that the assets consist of a house, real estate (other than own home), vehicle, business equity, stocks, mutual fund shares, bonds, etc. Piketty (2014) mentioned that household wealth, called also domestic capital, can be broken down into three categories: farmland, housing (including the value of the land on which buildings stand), and other domestic capital (covers capital owned by firms and government organization). Those components form national capital altogether with foreign capital.

In a mathematical equation, wealth (W) is expressed as the sum of housing value (HW), financial wealth (FW), and non-financial wealth (NFW), thus:

$$\sum_i W = HW_i + FW_i + NFW_i \quad (1)$$

where *i*=households. Net wealth is wealth deducted by debts. In mathematical equations, calculating net wealth as follow:

$$\sum_i NW = W_i - D_i \quad (2)$$

where *NW*=net wealth, *W*= wealth, *D*=debt, and *i*=households. Then, combining equation (2.1) and (2.2):

$$\sum_i NW = (HW_i + FW_i + NFW_i) - D_i \quad (3)$$

The relationship between income and wealth is unique. A household with a high income will have higher freedom to select from a bunch of wealth instruments, enable them to purchase high-quality instruments that provide the highest return. Therefore, high-income-households usually have high wealth. Olliver & Shapiro (1990) stated that higher-income usually drives to higher wealth, but this connection cannot be reversed. Other scholars mentioned the possibility for people to own high wealth but low in income, i.e. retirees who succeed to accumulate assets in their productive ages (Gibson, 2017).

Many studies mention the benefit of wealth as an indicator of status in society. Olliver & Shapiro (1990) stated that income is a transitory measure where past income does not necessarily indicate current wealth. Wealth, on the other hand, is a more stable indicator of status in society and represents stored-up purchasing power. O'Dwyer (2001) mentioned that high wealth accumulation benefits families, as inherited wealth is likely to flow to persons who already have substantial wealth. Similar findings were found by Scholz (2003) and Shennan (2011). Bowles & Gintis (2002) stated that parental economic status, indicated by wealth, will positively contribute to the economic status of the next generation. Similar findings found by McKenzie (2005) and Marks, et.al. (2005)

It is important to explore the composition and distribution of household wealth in Indonesia. As a developing country, it is a possibility that households do not aware of selecting assets that able to provide stability in value and high return,

such as properties, land, and instruments in the financial market. By observing the characteristics of wealth owned by the wealthiest social class providing us reasonable documentation of selecting wealth instruments.

METHODOLOGY

Information related to household wealth was obtained from the Indonesian Family Life Survey (IFLS). Until now, this is the most reliable source of information regarding the household's characteristics in Indonesia. IFLS published by RAND Corporation. The sample is representative of about 83% of the Indonesian population and contains over 30,000 individuals living in 13 of the 34 provinces in the country. The first wave of IFLS was conducted in 1993/1994. Then, the second, third, and fourth waves of IFLS were conducted in 1997, 2000, and 2007/2008. Then, the fifth wave of IFLS fielded in 2014/2015.

Strauss, et.al. (2016) described the superiority of IFLS data as follows:

1. Relatively few large-scale population-based longitudinal surveys are available for developing countries and very few are available for an extended period. IFLS is the only large-scale longitudinal survey available for Indonesia. Because data are available for the same individuals from multiple points in time, IFLS allows understanding the dynamics of behavior, at the individual, household, and family and community levels.
2. The multipurpose nature of IFLS instruments means that the data support analyses of interrelated issues not possible with single-purpose surveys. For example, the availability of data on household consumption together with detailed individual data on labor market outcomes, health outcomes, and on health program availability and quality at the community level means that one can examine the impact of income on health outcomes, but also whether health, in turn, affects incomes.
3. IFLS collected both current and retrospective information on most topics. With data from multiple points of time on the current status and an extensive array of retrospective information about the lives of respondents, analysts can relate dynamics to events that occurred in the past. For example, labor outcomes of young adults can be related to their conditions 21 years earlier as very young children, or in infancy.
4. IFLS collected extensive measures of health status, including self-reported measures of general health status, symptoms, pain, doctor-diagnosed chronic conditions, time spent on different physical activities, and biomarker measurements (height, weight, leg length, blood pressure, pulse, waist and hip circumference, hemoglobin level, grip strength, lung capacity, and time required to repeatedly rise from a sitting position). These data provide a much richer picture of health status than is typically available in household surveys. For example, the data can be used to explore relationships between socioeconomic status and an array of health outcomes.
5. In all waves of the survey, detailed data were collected about respondents' communities and public and private facilities available

for their health care and schooling. The facility data can be combined with household and individual data to examine the relationship between, for example, access to health services (or changes in access) and various aspects of health care use and health status. Although the facility data are not designed to be a panel they are for many facilities.

6. Because the waves of IFLS span the period from several years before the 1998 financial crisis hit Indonesia, to just before it hit, to one year, three years, ten years, and now 17 years after, extensive research can be carried out regarding the living conditions of Indonesian households during this very tumultuous period and its long-run aftermath.
7. The breadth and depth of the longitudinal information over 21 years on individuals, households, communities, and facilities make IFLS data a unique resource for scholars and policymakers interested in the processes of economic development.

This research will use the IFLS wave 5 since I will screenshot the wealth situation among households in Indonesia. Another reason stated by Stubhaug (2017) who mentioned that time perspective is less likely to influence household wealth comparing to current socioeconomic aspects.

To describe the data, the main statistics used are the mean and the median. Bloxham & Betts (2009) suggested that the median is the value for the middle household in the distribution and is often more representative of the "typical" household than the mean, or simple average. However, while medians have the advantage of being more representative of the typical household, they have the disadvantage that they are non-additive. For example, while the mean value of financial and non-financial assets adds to the mean value of total assets, the median value of these types of assets does not.

Data collected from IFLS are wealth components consist of:

1. Housing Wealth (HW), indicated by the value of house occupied, land outside the farm, and properties other than house occupied (e.g. rented house, real estate, retreat/ holiday house).
2. Financial Wealth (FW), includes savings. The financial wealth should also include wealth from the stock exchange or financial market. However, due to high volatility among them makes them hard to measure compared to savings.
3. Non-financial Wealth (NFW), covers appliances, furniture, livestock, hard stem plant, vehicle, poultry, and jewelry.

RESULTS AND DISCUSSION

1. Mean and Median of Wealth

Table 1. shows the descriptive statistics for components of households' wealth in Indonesia in 2014. Table 1 shows that the wealth of the average household in Indonesia is 147 million rupiah. The housing wealth aspect has the highest average value compared to the other two aspects. The value of housing occupied is the highest component for household wealth, valued on average 160 million rupiah. Then, the value of land outside the farm and other land or buildings is 101 million rupiah and 21,7 million rupiah.

Table 1. Descriptive Statistics for Households' Wealth Components in Indonesia, 2014 (Rupiah)

No.	Variable	Mean	Std. Dev.	Min	Max
1.	Total Wealth	147,000,000	248,000,000	1,000	3,110,000,000
2.	Net Wealth	137,000,000	254,000,000	-994,000,000	3,110,000,000
	Housing Wealth				
3.	Housing occupied	160,000,000	203,000,000	50	1,000,000,000
4.	Land outside farm	101,000,000	179,000,000	15,000	1,000,000,000
5.	Other house/building	21,700,000	50,500,000	6,000	1,000,000,000
	Financial Wealth				
6.	Savings	17,000,000	57,000,000	3,500	1,000,000,000
	Non-Financial Wealth				
7.	Appliances	4,419,039	8,611,076	3,500	310,000,000
8.	Furniture	4,547,120	15,000,000	1,000	1,000,000,000
9.	Livestock	972,542	7,536,204	4,000	300,000,000
10.	Hard stem plants	4,896,508	38,300,000	200	1,000,000,000
11.	Vehicle	6,162,177	16,400,000	1,000	200,000,000
12.	Poultry	6,162,177	16,400,000	1,000	200,000,000
13.	Jewelry	6,957,322	34,100,000	3,000	1,000,000,000
	Debts				
14.	Debts	10,400,000	53,300,000	0	1,000,000,000

Source: Author calculation from RAND (2014)

From table 1, there is a raising issue about the importance of the housing sector. Among the three housing wealth components, house value is the highest comparing land outside the farm and properties other than house occupied.

Table 2. Median for Households' Wealth Components in Indonesia, 2014 (Rupiah)

No.	Variable	Median	[95% Conf. Interval]	
1.	Total Wealth	56,800,000	55,000,000	58,500,000
2.	Net Wealth	52,300,000	51,700,000	54,000,000
	Housing Wealth			
3.	Housing occupied	100,000,000	90,000,000	100,000,000
4.	Land outside farm	40,000,000	35,000,000	45,000,000
5.	Other house/building	8,030,000	8,000,000	8,700,000
	Financial Wealth			
6.	Savings	3,000,000	3,000,000	4,000,000
	Non-Financial Wealth			
7.	Appliances	2,162,500	2,050,000	2,300,000
8.	Furniture	2,000,000	2,000,000	2,000,000
9.	Livestock	200,000	200,000	200,000
10.	Hard stem plants	210,000	200,000	300,000
11.	Vehicle	1,500,000	1,000,000	2,000,000
12.	Poultry	1,500,000	1,000,000	2,000,000
13.	Jewelry	2,000,000	2,000,000	2,250,000
	Debts			
14.	Debts	0	0	0

Source: Author calculation from RAND (2014)

This finding is similar to Di (2001) and Tilly (2006) that stated housing is the major component of household wealth. Besides its high value, the house has

function value, i.e. a place for shelter for households. That high value of a house also supports the idea of the benefit of owning a house for the household rather than rent. For the financial wealth aspect, the value of savings owned by households is 17 million rupiah. While the value of non-financial wealth components is less than 10 million rupiah individually. Vehicle and poultry are the two highest mean wealth among non-financial wealth, each valued at 6.1 million rupiah. At the same time, the average debts owed by households are 10.4 million rupiah. A different situation exists while examining medians (Table 2). Table 2 presents that median usually lower than the mean in table 1. It implies an uneven distribution of wealth across households. For example, average household wealth (mean) is 147 million rupiah but the value of wealth owned by household in the middle position of population distribution (median) is only 56.8 million rupiah.

2. Total Wealth, Debts, and Net Wealth

On average, the household's net total wealth in Indonesia is 137 million rupiah. This is obtained from total wealth (i.e. the sum of housing wealth, financial wealth, and non-financial wealth) deducted by debts. However, not every single household in Indonesia owns a similar proportion of total wealth. Figure 1 shows that the majority of Indonesian households (almost 50% of the population) own less than 100 million rupiah and very few households own very high wealth. This interpretation in figure 1 supports the finding why the median of total wealth (in table 2) is lower than the mean of total wealth (in table 1).

Figure 2 and figure 3 show the distribution of debts and net wealth respectively. From figure 2, the majority of households (about 90%) owe relatively low debts (approximately 20 million rupiah). While figure 3 presents the net wealth, i.e. total wealth deducted by debts. In this figure, almost 50% of households in Indonesia own less than 100 million rupiah in net wealth. Then, about 15% of households own 100 million to 200 million rupiah and lesser households hold higher net wealth. Interestingly, about 18% of households who have negative net wealth ranged up to 100 million rupiah. It indicates that their debts exceed total wealth.

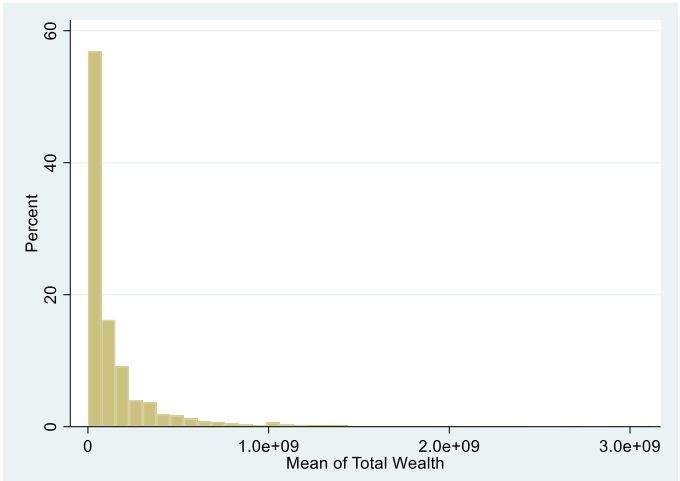

Figure 1. Distribution of Total Wealth by Households
Source: Author Calculation from RAND (2014)

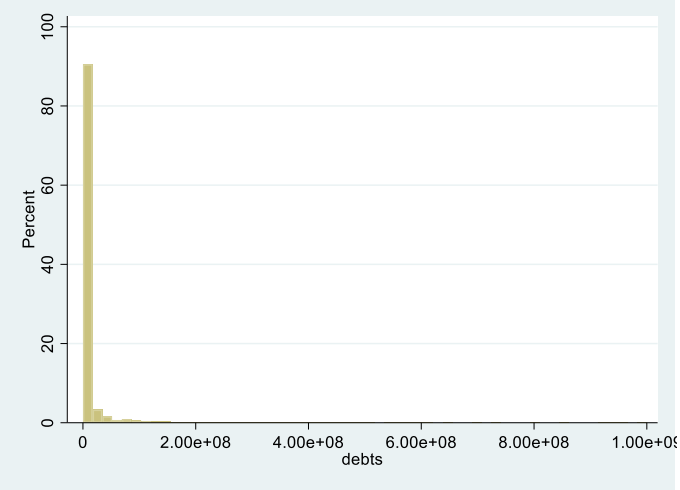

Figure 2. Distribution of Debts by Households
Source: Author Calculation from RAND (2014)

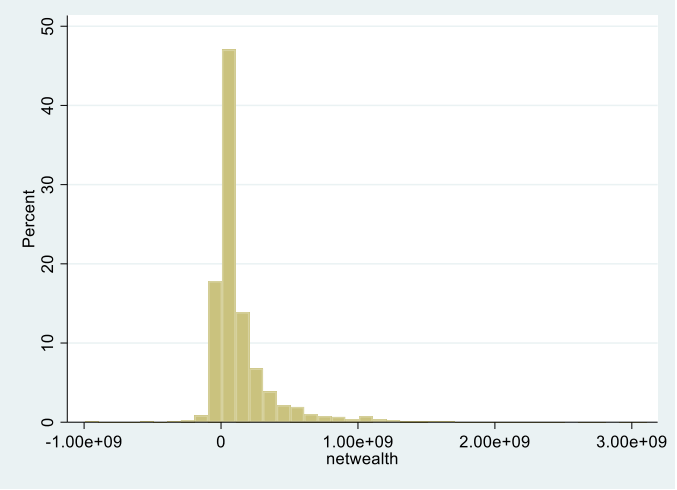

Figure 3. Distribution of Net Wealth by Households
Source: Author Calculation from RAND (2014)

The distribution of wealth can be observed from the quantiles aspect. Figures 4, 5, and 6 present the distribution of total wealth, debts, and net wealth by quantiles. From figure 5, the highest wealth is accumulated in the 10th decile of wealth. On average, households in the 10th decile of wealth own 1.2 billion rupiah. This is far above wealth owned by the lowest class of society (the 1st decile) who claimed only on average 4.1 million rupiah. Moreover, the average wealth owned by the 10th decile is also higher than the other nine deciles; the group of 1st until 9th deciles do not have a significant difference in wealth.

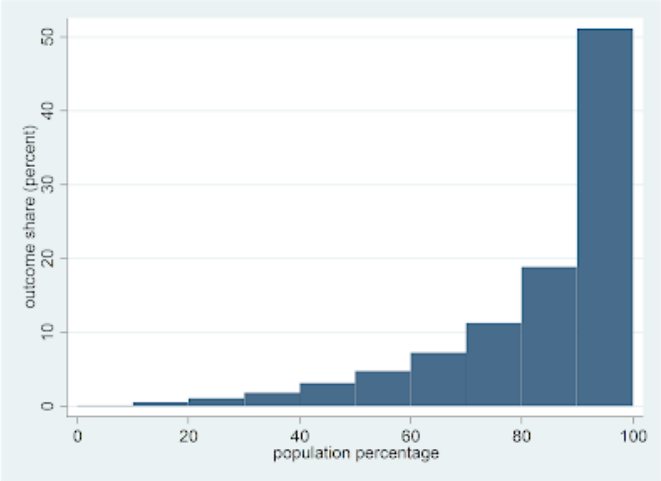

Figure 4. Total Wealth Distribution
Source: Author Calculation from RAND (2014)

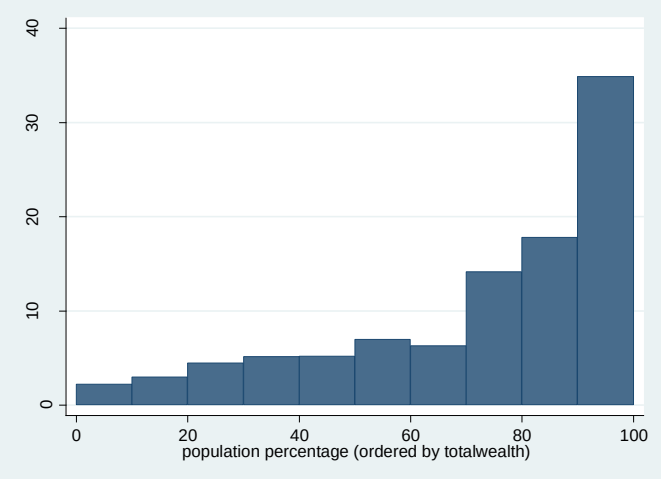

Figure 5. Debts Distribution
Source: Author Calculation from RAND (2014)

From figure 5, the debts are unequally distributed across different wealth groups. The lowest 20th wealth group owns the lowest percentage of total debts of 2.2%. On contrary, the highest 90th wealth group holds the highest proportion of 34.86%. Figure 6 shows the distribution of the household's net wealth by quantiles. This figure indicates that the highest average of net wealth is positioned in the highest class of society. On average the wealthiest households own 1.2 billion rupiah while the lowest class of society own a negative net wealth of Rp.950,000. The occurrence of negative net wealth can be seen in the cumulative distribution of households in Figure 7.

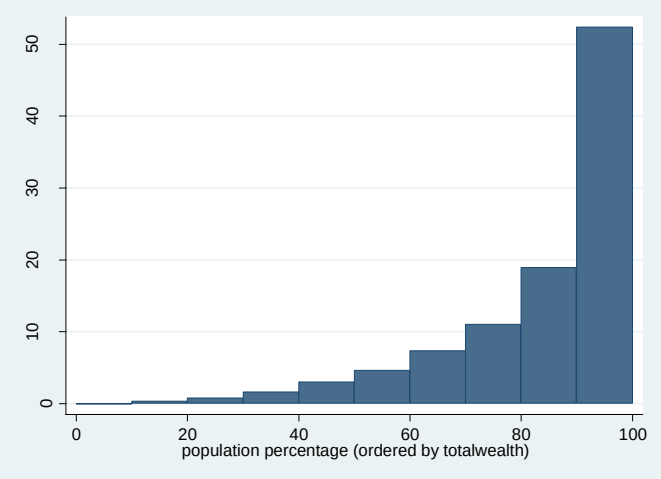

Figure 6. Net Wealth Distribution
Source: Author Calculation from RAND (2014)

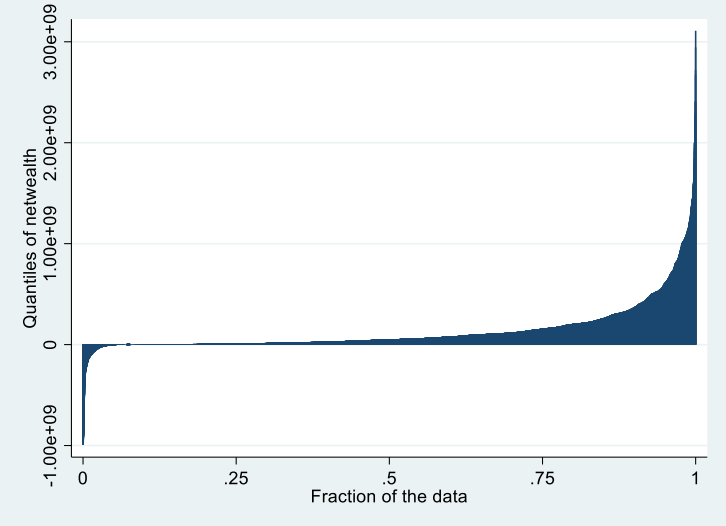

Figure 7. The Distribution of Net Wealth by Distribution of Households
Source: Author Calculation from RAND (2014)

3. The Components of Household Wealth: Which age group is the richest?

The age group that is considered as the richest is the 30-44 years old age group (Figure 9). This age group, which comprises 38.65% of the society, owns almost 40 percent of the national average total wealth. The smallest age groups that hold housing wealth is, not surprisingly, those who are in the school-age period (0-14 and 15-19), each of them comprise 0.40% and 2.19% of the total population, respectively.

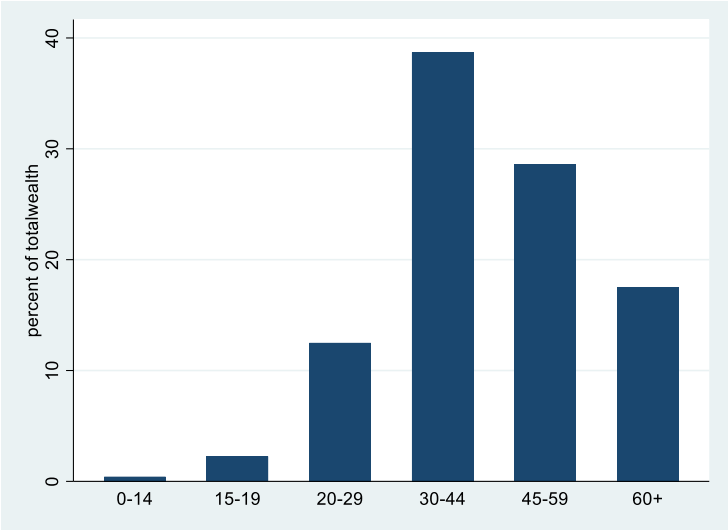

Figure 9. The Percentage of Total Wealth Owned by Age Groups
Source: Author Calculation from RAND (2014)

Households who enter the workforce and ready to accumulate wealth, indicated by higher wealth in the 20-29 age group (about 12.38% of the total population) own approximately 12% of the wealth. While the 45-59 age group (28.58%) and 60+ (17.80%) have 29% and 18% of total wealth. This low number potentially because a result of the slower increase in their income (e.g. employee is already settled in one workplace or their investment profile becomes risk avoider) and big expenditures that significantly reduce their wealth (e.g. arrange a marriage for their children or give financial support to their children to move to the new place).

Figure 10 shows the distribution of housing wealth across age groups. While Figures 11 and 12 present the distribution of financial wealth and non-financial wealth across groups. From figure 10, families in the 30-44 years old age group hold the highest housing wealth in the community. On average, they hold 35% for each component of housing wealth, i.e. housing, land outside the farm, and houses other than occupied. Young families that purchase a house, either, through cash or mortgage will feel beneficial as they can enjoy the higher value of homes 10 or 15 years later when they enter the 30-44 age group. This is the peak of housing wealth in the community. Besides, families will get a higher benefit if they already purchase other houses/properties for investment. They will give the highest contribution to households' housing wealth.

The financial wealth reaches the highest proportion among the 30-44 years old age group, approximately 43% of the total financial wealth (Figure 11). This is not surprising since at this age they able to get income from work and their financial instruments. Moreover, their aggressive investment profiles able to provide them with a significant amount of money to save. I do not include investment portfolios in either stocks or the financial market as they have higher volatility in value comparing to savings. Therefore, the measurement other than savings is hardly accurate.

For non-financial wealth, households aged 30-44 have the highest proportion (figure 12). Their two highest non-financial wealth components are appliances and livestock. While the two lowest non-financial wealth components

for them are vehicle and poultry. In general, the contribution of non-financial wealth is getting lower for 45-59 and 60+ age groups. Surprisingly, in the 45-59 age group, the value of hard stem plants has the highest position. This is strongly related to the nature of having stem plants such as palm oil, coffee, rubber tree, and clove that have 20 years or more in productivity period.

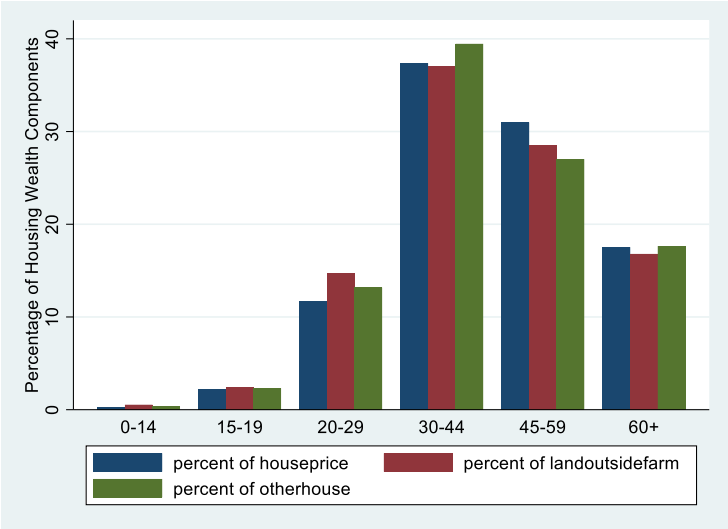

Figure 10. The Percentage of Housing Wealth Owned by Age Groups
Source: Author Calculation from RAND (2014)

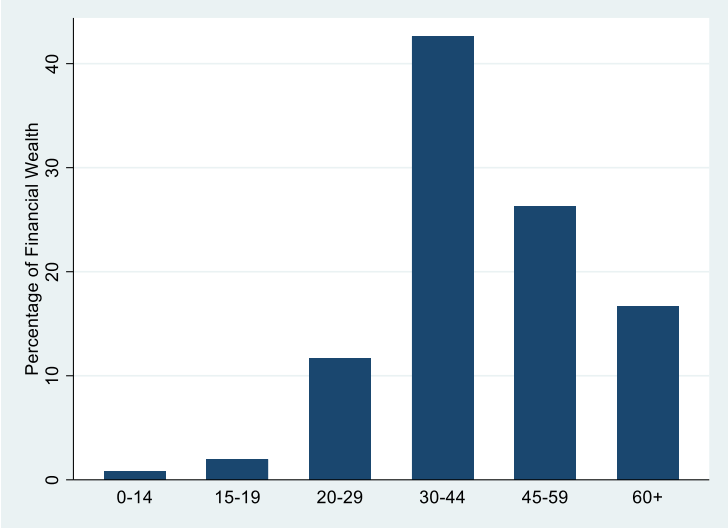

Figure 11. The Percentage of Financial Wealth Owned by Age Groups
Source: Author Calculation from RAND (2014)

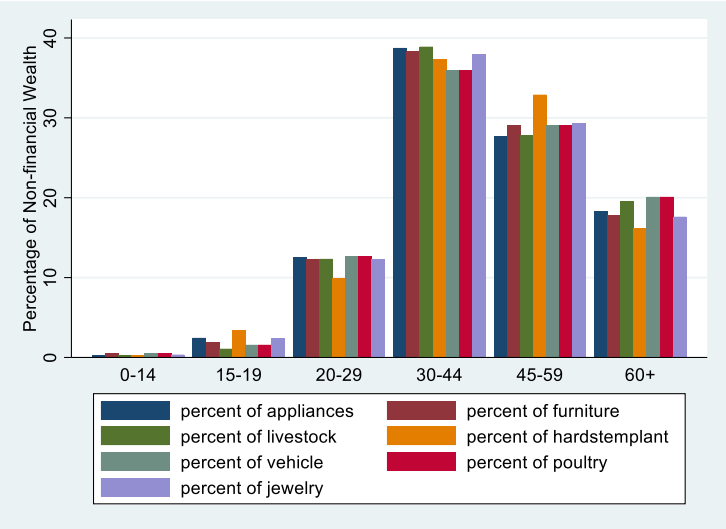

Figure 12. The Percentage of Non-Financial Wealth Owned by Age Groups
Source: Author Calculation from RAND (2014)

4. The Average Value of Components of Household Wealth for Age Groups

Table 3 shows the components of wealth for each age group. For each age group, the house is the biggest wealth component. The highest mean of the house price is found in the 0-14 age group. This high value is potentially caused by the household's decision to record their property on behalf of their children. Therefore, in administration terms, children are the owner of the property. But if we exclude this terminology, the 45-59 age group will have the highest average house price. The reason is the time dimension, i.e. those who can purchase a house at a young age can enjoy high value positively with time duration.

Table 3. Mean of Wealth Components by Age Groups (Rp.)

Wealth Components	Age Groups					
	0-14	15-19	20-29	30-44	45-59	60+
House price	275,000,000	93,900,000	163,000,000	160,000,000	171,000,000	153,000,000
Land outside farm	37,500,000	16,000,000	69,200,000	101,000,000	72,400,000	53,900,000
Other house	31,000,000	16,000,000	17,500,000	23,600,000	23,500,000	22,000,000
Savings	48,800,000	32,500,000	23,200,000	18,400,000	20,900,000	25,000,000
Appliances	3,422,727	4,850,170	5,170,869	5,015,121	5,117,377	5,519,893
Furniture	4,775,000	4,360,000	4,150,301	4,701,255	4,810,603	5,435,596
Livestock	2,600,000	265,714	541,203	1,243,980	627,416	1,374,448
Hardstem plant	3,000,000	147,692	916,579	4,314,056	4,534,841	1,306,048
Vehicle	50,000	10,500,000	3,227,500	5,673,368	12,400,000	3,006,842
Poultry	50,000	10,500,000	3,227,500	5,673,368	12,400,000	3,006,842
Jewelry	4,800,000	3,516,765	8,034,738	6,875,113	6,143,582	10,600,000

Source: Author Calculation from RAND (2014)

The highest mean of land outside the farm and other house found in the 30-44 age group. On the other hand, this age group owns the lowest savings comparing to other age groups. While the 0-14 age group has the highest average savings and livestock. Again, this is simply caused by the household's decision.

This practice is also reflected by the low value of the vehicle. Nearly useless for parents to record their vehicle under their children's name.

The value of appliances and furniture is relatively similar for all age groups, indicates that there is no excessive buying for appliances and furniture. The highest average value for hard stem plant is in the 45-59 age group, caused by the attributes in the hard stem plant that best planted for the long term.

5. The Distribution of Household Wealth by Quantiles

Table 4 presents the national distribution of wealth based on quantiles. For each age group, the highest wealth accumulated in the 10th deciles, with a huge gap between them to the 1st decile. For example, for the 0-14 age group, the lowest class owns 6.2 million rupiah while the highest class owns more than 150 times (i.e. 960 million rupiah). This gap is wider for other age groups, for example, the 15-19 age group (500 times) and 20-29 (400 times).

Table 4. The Distribution of Average Wealth by Quantiles (Rp)

Deciles	Age Groups					
	0-14	15-19	20-29	30-44	45-59	60+
1st	6,200,000	2,400,000	2,700,000	3,700,000	5,000,000	3,700,000
2nd	11,000,000	6,000,000	7,600,000	9,600,000	11,000,000	10,000,000
3rd	19,000,000	8,300,000	14,000,000	19,000,000	18,000,000	18,000,000
4th	21,000,000	15,000,000	24,000,000	30,000,000	31,000,000	31,000,000
5th	22,000,000	26,000,000	38,000,000	50,000,000	52,000,000	54,000,000
6th	23,000,000	34,000,000	62,000,000	78,000,000	77,000,000	82,000,000
7th	58,000,000	67,000,000	99,000,000	110,000,000	110,000,000	120,000,000
8th	160,000,000	150,000,000	150,000,000	200,000,000	180,000,000	210,000,000
9th	790,000,000	240,000,000	310,000,000	380,000,000	380,000,000	410,000,000
10th	960,000,000	1,200,000,000	1,100,000,000	1,100,000,000	1,200,000,000	1,200,000,000

Source: Author Calculation from RAND (2014)

Table 5. The Distribution of Wealth Components by Quantiles (%)

Deciles	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Housing occupied	0.49	1.45	2.54	3.28	4.78	6.27	8.35	11.96	18.8	42.1
Land outside farm	0.31	0.99	1.65	2.22	3.23	4.67	6.01	9.41	16.76	54.74
Other house/ building	0.23	1.22	2.08	2.71	3.49	4.43	5.62	7.48	11.54	61.21
Savings	0.08	0.24	0.48	0.83	1.45	2.62	3.94	6.91	13.99	69.47
Appliances	0.45	1.21	2.11	3.14	4.44	6.13	8.15	11.41	17.92	45.05
Furniture	0.44	1.15	2.03	2.78	4.17	5.51	7.49	10.65	16.59	49.19
Live-stock	0.31	0.62	1.03	1.32	1.98	2.41	3.39	5.07	8.79	75.08
Hard stem plants	0.04	0.1	0.2	0.26	0.41	0.63	1.06	2.15	6.34	88.81
Vehicle	0.05	0.14	0.35	0.74	1.61	3.17	5.73	10.2	17.93	60.07
Poultry	0.05	0.14	0.35	0.74	1.61	3.17	5.73	10.2	17.93	60.07
Jewelry	0.26	0.64	1.23	1.74	2.8	3.91	6	7.93	13.98	61.52

Source: Author Calculation from RAND (2014)

Table 5 presents the distribution of wealth components by quantiles. For each component, the 10th decile owns the largest proportion. That decile significantly possesses properties other than house occupied, savings, livestock, and hard stem plant. Those components are the main indicators to indicate families' wealth.

CONCLUSIONS

The average total wealth in Indonesia is 147 million rupiah. However, this wealth is unequally distributed. One indication is the median of total wealth that reached only 56.8 million rupiah, which implies that the middle households own health far below the mean. Another way to observe the distribution of wealth ownership in Indonesia is through quantiles and age groups. The 10th decile is the wealthiest class group, with wealth more than 500 times comparing to the 1st decile. At the same time, households who are in the 30-44 age group are considered the wealthiest among other age groups. The lowest deciles also suffer from negative net wealth, i.e. when debts exceed total wealth. Unfortunately, the wealth gap is not sufficient just observed in this descriptive method. Therefore, it is required to conduct further statistical/ econometrics approach to produce a single number and enable us to make a comparison over time.

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