Unmasking the middle-class: profile and determinants

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Long-term aspirations of Filipinos have been articulated in *Ambisyon 2040*, which envisages a predominantly "middle class" society where no one is poor. However, there is no international standard for defining the middle income class that can be used as a tool to monitor progress towards this long-term aspiration. This paper defines the middle-income class as those whose per capita incomes are within two and twelve- times the (official) poverty line. Descriptive analyses based on analysis of secondary data from the Family Income and Expenditure Survey over 1991-2015, show a growing middle class in the country. Recent data show that middle income households are largely found in urban areas (especially Metro Manila and neighboring regions) and own their dwellings. Most members of middle-class families who are economically active have attained more than secondary education and are typically engaged in non-vulnerable salaried employment. The determinants of middle-income status are identified using a multinomial logistic model. Results of the empirical estimation are generally consistent with the findings of the descriptive analyses. Further, they suggest that the middle class has accumulated various assets, such as televisions, cell phones, refrigerators, washing machines, radios, desktops/laptops, motorbike, stereo, aircon, oven, and cars. The study also performs a simulation exercise to assess whether the long-term goal of a predominantly "middle class" society can be achieved using the thresholds for defining the middle-income class. The paper also provides policy implications on the growth of the middle-class (and its expenditure patterns), the importance of gaining behavioral insights on their likely consumption behavior, and on the need for policy action to address vulnerabilities, especially of those in the lower part of the middle class.

Keywords: middle-class; income distribution, economic development, poverty, human capital, median voter

1. Introduction: how to define the middle-class

In the past 20 years, the Philippines has experienced a decline in poverty, and consequently an increase in the non-poor who have much better purchasing power than the poor. In this paper, we break-down the income distribution into the lower-, middle- and upper- income classes. The increasing consumption of the middle-class is likely to have socio-environmental consequences, particularly in shaping natural resource and space availability, air pollution and carbon emissions. In the wake of sustained growth prospects, Filipino middle-class consumer behavior is an interesting case for study.

The middle-class drives economic growth across societies, albeit with mixed evidence. The strongest evidence for a connection between economic growth and middle-class growth exists for consumption (Murphy *et al*. 1989; Chun *et al*. 2017) and human capital factors (Banerjee & Duflo 2008). More consumption by growing middle-classes, especially demand for products and services of higher quality, boosts investments in production, government service quality and supports economies of scale (Huntington 1991; Kharas 2017; Chun *et al*. 2017). Conditioned on ethnic similarity, countries with a large middle-class tend to grow faster (Easterly 2001). However, the historical role of the middle-classes in 19th century Europe as the backbone of society and of a thriving economy, based on shared values (e.g., Weber 1985; Landes 1998), does not easily apply to today's economies anymore (Knauss 2019).

While the middle-class plays a crucial role in a country's development, there is hitherto no internationally accepted practice for defining the middle-class, just as there is no universally accepted definition of poverty though poverty tends to be seen and measured from a monetary lens (Joliffe and Prydz 2016). Economists tend to define the middle-class either through absolute thresholds for income or consumption at purchasing power parity (PPP) prices (Banerjee and Duflo 2008; Ravallion 2010; ADB 2010; Kharas 2017; Chun *et al*. 2017;), or relative thresholds based on the average or median income (Easterly 2001; Foster and Wolfson 2009; Birdsall 2010). Definitions of the middle-class involving non-monetary metrics also vary widely across sociology (McEwan *et al*. 2015; Southall 2016; Neubert and Stoll 2018) and other social sciences (Spronk 2012; Melber 2013). In the Philippines, Virola *et al*. (2013) use cluster analysis on (per capita) income distribution to estimate the size of the middle-class, while market researchers group households into five socio economic classifications based on a scoring system of the quality of consumers (i.e., employment and educational characteristics of the household), household assets, amenities, and facilities (Bersales *et al*. 2013).

This essay, modifying slightly the work of Albert *et al*. (2015), makes use of an *absolute, income-based middle-class definition* that results from dividing the (per capita) income distribution into seven income clusters, and consequently three income-based classes (see Table 1). The starting points for the clusters are the official poverty lines, which account for meeting basic food and non-food needs such as clothing, rent, paying for utilities, *etc*., and vary across provincial urban/rural areas; The seven (per capita) income clusters consist of:

(1) the poor (whose per capita incomes fall below the poverty line);
(2) the low-income but not poor (with per capita incomes between the poverty line and twice the poverty line);

(3) the lower-middle cluster (with per capita incomes between twice and four times the poverty line);
(4) the middle-middle cluster (with per capita incomes between four times and seven times the poverty line);
(5) the upper-middle cluster (with per capita incomes between seven times and twelve times the poverty line);
(6) the upper income but not rich (with per capita incomes between twelve times and twenty times the poverty threshold); and,
(7) the rich (with per capita incomes higher than twenty times the poverty line).

The three income classes are defined by grouping the clusters as follows: the low-income class to consist of the two lowest clusters; the upper income class to comprise the two highest income clusters; and the middle-income class, which we henceforth refer to as middle-class, to include the three middle-income clusters.

Table 1 lists the definition of the three income classes used in this paper, together with indicative range of monthly family incomes for a household size of five based on average poverty lines in the country for 2015. Using such a definition, an indicative range of monthly family income thresholds for a middle-income class family of five are PHP 18,000 and PHP 110,000 in 2015 (or around PHP 20,000 and PHP 120,000, respectively in 2018 prices). Table 1 also provides estimates of the sizes of the income classes, both in terms of population and households, sourced from the 2015 Family and Income Expenditure Survey (FIES), conducted by the Philippine Statistics Authority (PSA).

Table 1. **Income Clusters in the Income Distribution, Indicative Monthly Family Income Range for a Family of Five, and Estimated Sizes of Income Classes in 2015**

Income Cluster	Definition: Per capita income is	Indicative Range of Monthly Family Incomes (for a Family Size of 5 members)	Estimated Size of Classes	
			Number of Households in Thousands (Percent of Total Households)	Number of Persons in Thousands (Percent of Total Population)
1. Low income	less than twice the official poverty line	less than PHP 18,200	11,575 (50.9%)	60,939 (58.1%)
2. Middle (income) class	between twice the poverty line and twelve- times the poverty line	Between PHP 18,200 to PHP 109,200	10,633 (46.8%)	42,524 (40.5%)
3. Upper income	at least equal to twelve-times the poverty line	At least PHP 109,200	521 (2.3%)	1,513 (1.4%)

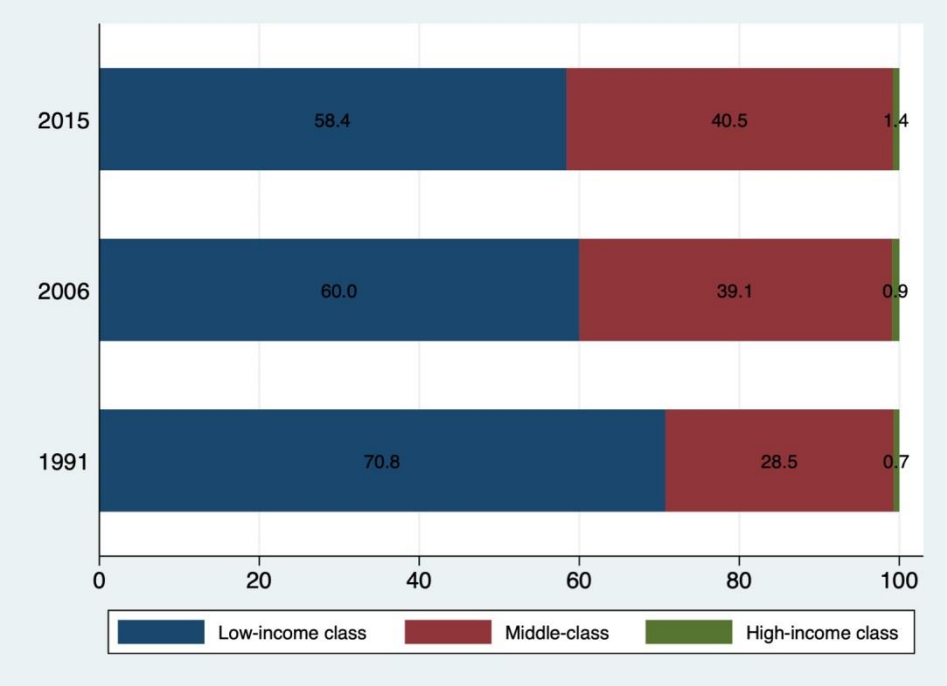
Source: Albert *et al*. (2018) as computed from microdata of the Family Income and Expenditure Survey (FIES), PSA (2016a)

The next section profiles the middle-income class (relative to other classes) in terms of geographic location, education, occupation, and expenditure behavior using data from the FIES, and from merged data from the 2015 FIES with the Labor Force Survey (FIES-LFS). Section 3 complements the descriptive analysis in the previous section by analyzing the determinants of middle-income status using a multinomial logistic model. Section 4 presents simulation results on the number of years for the low-income class to transition to middle class, and assesses empirically whether the long-term goal of a predominantly middle class society can be achieved. The final section concludes and discusses policy implications of the study.

2. The profile of the middle-class

The current size and growth trend of the Filipino middle-class since 1991 already show that it is steadily developing into a consumer group that matters to the country's development trajectory (**Figure 1**). As of 2015, nearly half (46.8%) of households were middle-class, while slightly more than half (50.9%) belonged to lower-income class, and a much smaller share (2.3%) of households were upper-income class (FIES data, income-based approach). In terms of population, about two in every five (40.5%) Filipinos in 2015 belonged to the middle-class, nearly three-fifths (58.1%) to low-income class, and the remaining (1.4%) to high-income. From 1991 to 2015, 23.4 million more Filipinos joined the middle-class, with the proportion of middle-class Filipinos increasing by 12.3 percentage points from 28.5 percent to 40.8 percent. The income distribution, however, hardly changed between 2006 and 2015 with the share of the middle-class population increasing only by 1.4 percentage points from 39.1 percent in 2006 to 40.5 percent in 2015 despite robust economic growth in this period.

Figure 1. Share of population (in percent) by income class: 2006-2015



Note: Authors' calculations from microdata of the Family Income and Expenditure Survey (FIES), PSA (2016a); National Statistics Office (2006; 1991).

Increasing political strength

The government has traditionally focused social protection toward the low-income class but of late, it has shifted toward implementing universal programs, particularly for health and education, in the face of the increasing strengths of the middle-class and the growing middle-class discontent over social assistance, often targeted to the poor (Curato 2016). The political importance of the middle-class as a voter group becomes clear in several policy fields. Two major legislation, the First Package of the Tax Reform for Acceleration and Inclusion (TRAIN 1) as well as the Universal Access to Quality Tertiary Education Act of 2017, both benefit the middle-classes more strongly than the lower classes. The middle-class has also been widely viewed as pivotal to the election of Rodrigo Duterte as President in 2016, thus explaining the shift in targeting of

political programmes; the middle-classes have also become a key interest group for non-government organizations such as megachurches (Lang 2018; Curato 2016).

Place of residence

Urban dwellers are predominantly middle-class: three in five urban residents are middle-class, while only 1 in 20 is high-income. Among rural households, only a third are middle-class, while more than three-fifths are low-income. Among the regions, Metro Manila Central Luzon, and CALABARZON are where the middle-class dominantly reside.

Housing tenure

Middle-class households tend to own their dwellings: about three in every four (74%) middle-income households reside in dwellings that they own, while, 23 percent of the middle-class rent, and 3 percent are informal settlers. In Metro Manila, only three-fifths (58%) of the middle-class own their residences, a third rent their dwellings (35%) and nearly a tenth (7%) are informal settlers.

While a relatively small proportion of middle-class households live as informal settlers, the middle-class constitutes a big proportion of informal settlers nationwide: two in every five (42%) informal settlers belonged to the middle-class, while the remaining (58%) were from the low-income class. In Metro Manila alone, roughly seven in every ten (69%) informal settlers belonged to the middle-income class.

Education

In 2015, half of Filipino middle-class aged at least 24 years old attained education beyond secondary education. While this figure was lower than that of the high-income (78%), it was much higher than that of the low-income (13%). The middle and upper-income classes put a high premium on education; they make use of their resources for the schooling of their children that will yield future dividends in their living standards.

Labor and employment

Making use of merged data from the 2015 FIES and the Labor Force Survey (PSA 2016b), we find that unemployment rates are slightly higher among the middle-class (2.8%) than among the lower income class (2.2%), as of 2015. Among the income clusters, the bulk (70.0%) of unemployment is within the low-income but not poor, as well as the lower middle-income. A quarter of the middle-class work in wholesale and retail trade. Nearly a fifth (17%) are in transport, communication, and storage while about 16 percent work in government, mostly as clerks or public-school teachers. Only 11 percent of middle-class workers depend on agriculture, and most belong to the lower middle-income cluster.

The middle-class is neither into entrepreneurial activities nor into vulnerable employment: in 2015, more than 6 in every 10 of the employed middle-class are in salaried work. Self-employment account for only a quarter (23%) of jobs of the middle-class compared to a third (30%) for the low-income (30%) class. Employed members of

middle-class households also work more hours than their counterparts from low-income households. This pattern holds even for both sexes ,whether in urban or rural areas.

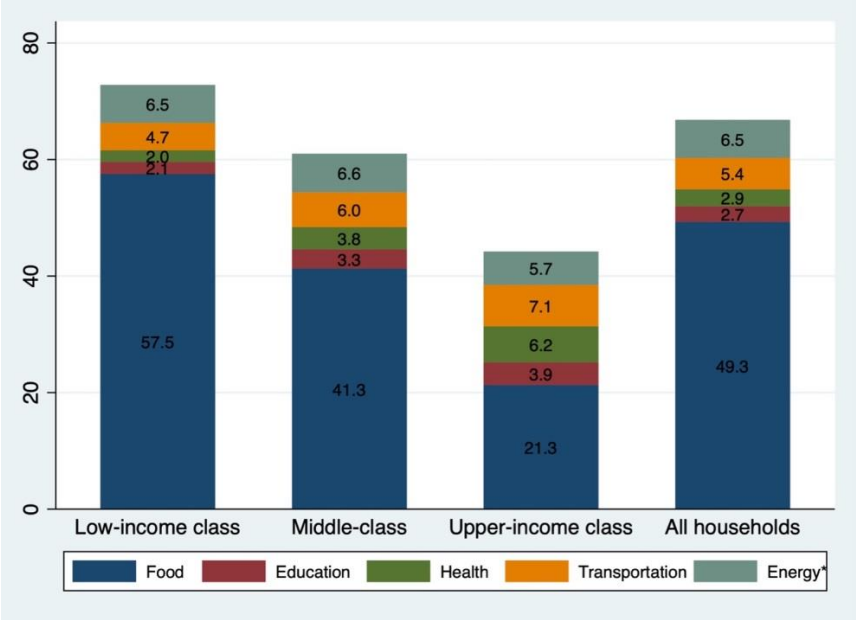
Overseas Filipino workers and remittances

Merged FIES-LFS data suggests that just more than a tenth (13%) of middle-class households have a family member who is an Overseas Filipino worker (OFW), compared to merely 4 percent for the low-income class, and 15 percent for the high-income class. Among families with an OFW, three-quarters (73%) are middle-class, while less than a quarter (23%) are low-income, and the remaining (4%0 are upper income. Of the 73 percent families with OFWs from the middle-class, about half are from the lower middle-income cluster. Among low-income families with an OFW, the bulk (83%) is from the low-income but not poor. Two-fifths (38%) of middle-class families receive remittances, compared to less than a fifth (17%) for the lower-income class, and four-ninths (44%) for the upper-income class.

Education, Health, Transportation Expenditures

In terms of the share of education expenses to total household expenditure, the middle-class education spends about similar (4.1%) to the upper-income class (4.7%), 63 percent more than that spent (2.5%) by low-income counterparts, according to the FIES (**Figure 2)**. The discrepancy in the share of health expenses across income classes is much larger than those on education, transportation, and electricity, gas and other fuels. The data also confirm Engel's law which states that the share of food in total expenditures decreases with upward social mobility.

Figure 2. Share (in %) of Food, Education, Health, Transportation to Total Household Expenditure, by Income Classes: 2015



Source: Authors' calculations from microdata of 2015 FIES, PSA (2016a)
Note: * = electricity, gas and other fuels

Disaggregation of FIES data on transportation expenses by passenger transport mode shows that the middle- and upper-income classes spend nearly the same amount on road

transport services (which is more than twice the spending of the low income class), but the upper-income far outspends the middle-income in air transport services.

Access to safe water

Middle-income households have better access to safe and clean water than low-income counterparts. Five in every seven middle-income households used water from the community water system; in contrast, around 60 percent of the low-income relied on ground and surface water, considered potential sources of contamination from microbes and chemicals (WHO 2006).

The low access to safe water services among low- income households is associated with where they live. In rural areas, access to community water system was very low at only 41 percent in 2015. In some regions, a majority of the middle- income still use ground and surface water. These areas include the Autonomous Region in Muslim Mindanao (69%) and the Cordillera Administrative Region (56%).

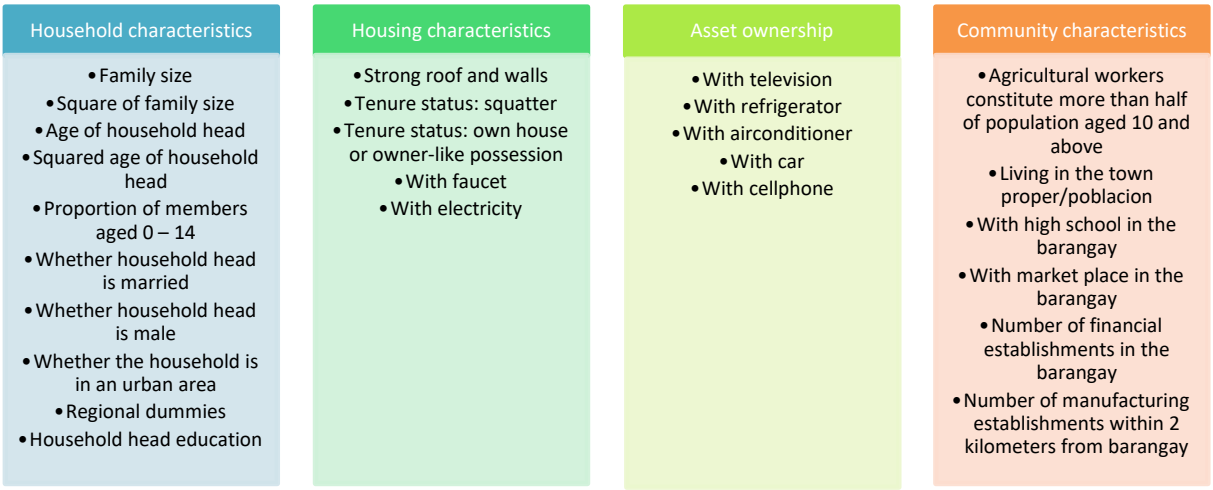
In sum, the Filipino middle-class is mostly urban, growing in size and that they contribute to human capital (steady jobs, education). While FIES data shows that living conditions of middle-class households have been improving in the past 20 years, a larger proportion of the middle-classes still belong to the lower middle cluster. The sociodemographic profile of the middle class indicates its consumption capacities and that opportunities of the middle-classes exist, but clearly, the lifestyle choices, including transportation spending, determine the impact of consumption on economic development. This applies especially to lower middle-class cluster households which are more capital-constrained.

3. Determinants of the middle-class

While the previous section provides various insights in assessing how patterns of economic change are likely to affect the middle class (and other income classes), it is limited by its bivariate content. This section examines the determinants of being middle class in the Philippines using a multinomial logistic model, which allows us to infer causality of specific household characteristics and other factors on the welfare of the middle-income class, and thus identify how the middle class may grow by making changes in some of the determinants conditional on the level of other factors.

The dataset used in the analysis is a merged database of microdata of the FIES 2015, with the Labor Force Survey (LFS) for the 1st Quarter of 2016, together with barangay information sourced from the 2010 Census of Population and Housing (CPH) Form 5. The merged data allowed for the use of various variables to understand determinants of the middle class. The FIES contains household and housing characteristics; the LFS has information on characteristics of household members; while the CPH has information on the community to which the household belongs. The findings here, however, are limited by the lack of availability of more recent Form 5 data.

Outcome groups in the analysis are (1) low-income, (2) middle-income, and (3) high-income classes. The low-income class is treated as the base outcome. Explanatory variables used in the model are the following:



Mostly, the results of the multinomial logistic regression (see Annex) confirm the findings from the descriptive analysis in the previous section. Having a large family decreases the likelihood of being middle class at an increasing rate. Also, having a large share of school-aged children is less associated with being middle class. Meanwhile, living in urban areas, owning durable goods, living in own house, and having strong roof and walls are also positively associated with being middle class.

Results for the community characteristics describe how the communities of each income group compare. While the low income class tends to living in agricultural communities, the middle income class is associated with living close to financial establishments and a market place, which are common in urban communities. The upper income households are associated with living in the town center (*poblacion*) and having access to manufacturing establishments.

4. Transition of the poor and lower-income class to middle-class

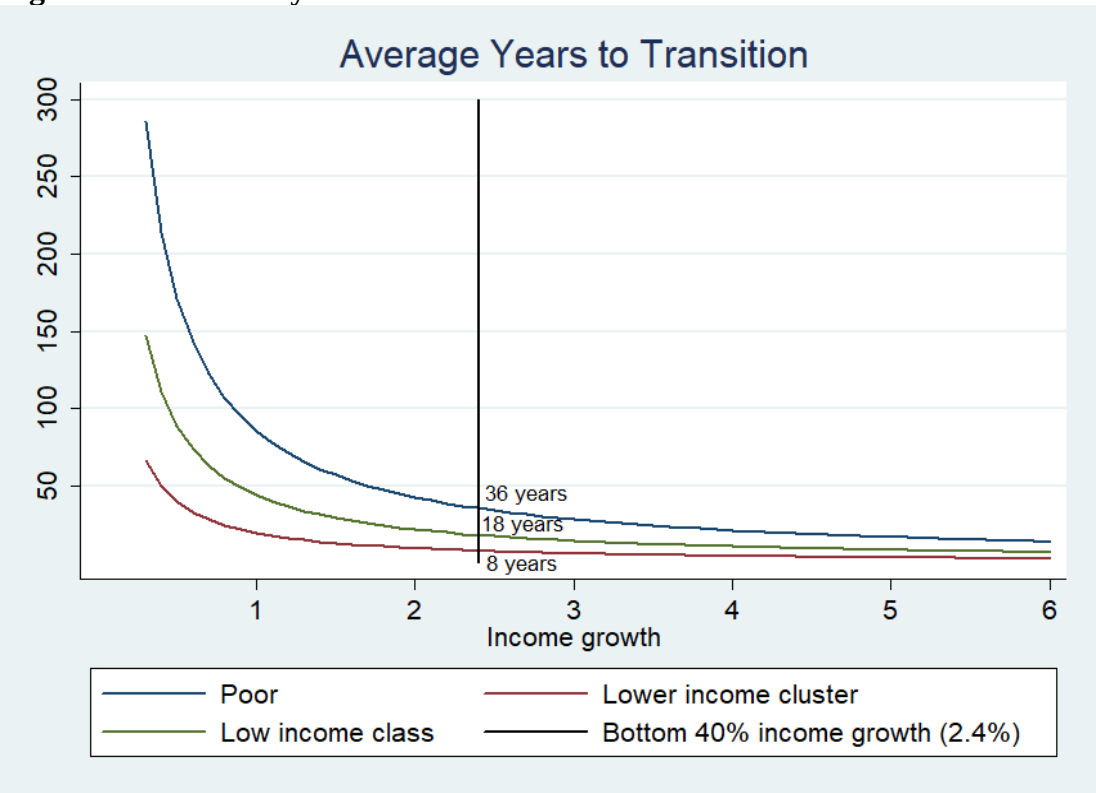
Future ambitions and simulations of middle-class development make clear that strategies remains necessary to improve income mobility of Filipinos. In *AmBisyon Natin* 2040, Filipinos articulated their long-term aspiration to "live in a prosperous, predominantly middle-class society where no one is poor" (NEDA 2016).

Following Morduch (1998), this study examined how long it takes for the low-income class to transition to middle-income status assuming that per capita income grows annually at a constant rate. To adjust for differences in cost of living across the country, the study also applied a spatial price index[1] to the per capita income of each household

Simulations indicated that if real income per capita grows by 2.4 percent[2] per year, the average transition time for the low-income class to become middle class would be 18 years[3] (**Figure 3**).

[1] Based on the official poverty lines costed across urban and rural areas in each province
[2] The estimated growth rate of the bottom 40 percent in the period 2009-2015
[3] Under the assumption that the growth rate will be continuous and uniform across the low-income population

Figure 3: Number of years to transition into lower middle income



Source: Authors' calculations

While the low-income but not poor cluster can transition to middle income by 2023, the poor, on average, can only do so by 2051. For the poor to transition to middle-income by 2040, their income should grow annually by 3.4 percent, or 42 percent more than the benchmark 2.4 percent, which is deemed unrealistic especially given that income distribution was unchanged from 2006 to 2012.

5. Conclusions and Policy Implications

This article uncovered the characteristics of the growing middle class in the Philippines. While the middle-class is generally better off in living standards than the low-income class, a large portion of the middle-class is in the lower portion of income distribution. These "strugglers" (Birdsall 2014) tend to be particularly vulnerable to exogenous income shocks such as an economic crisis or a bad harvest due to flooding. Middle-income households in rural areas and certain regions remain to have low access to social services. Those with relatives working overseas, especially among those in the lower middle-income cluster, may be vulnerable to falling into poverty if the OFW member loses his/her job as remittances cover a substantial proportion of household income. In urban areas, those in informal settlements, including the middle class, face difficulties in access to affordable housing. Families among the low income but not poor, together with those in the lower middle-income cluster, are far more vulnerable to income poverty than others in higher income clusters and will thus require support for improving resilience to risks. Government will need to reexamine its social protection policies and recognize that while the poor is most vulnerable to future poverty, even the middle-class is vulnerable (Albert and Vizmanos 2018). Transfers to the poor and vulnerable, e.g. unconditional cash grants in the wake of tax reform, also cannot be one-size fits all strategies, but should account for differing risks and vulnerabilities.

With increasing wealth, middle-class Filipino households tend to spend more on non-food items, particularly, on electricity, gas and other fuels as well as on transport service. This increases households' carbon footprint. Motivating the middle-class to remain in public and shared transport services require both strategies that target this knowledge-action gap and the provision of attractive infrastructure and alternatives to car ownership and use. As of now, the Philippines does not have a cross-cutting sustainable consumption policy, but rather some supportive initiatives on promoting energy efficiency labels and energy saving tips as well as some recycling and plastic waste initiatives. A deeper understanding of the motivations, barriers and bottlenecks to sustainable consumption through behavioral insights could lead to differentiated, more successful policies and programmes across several fields of sustainable consumption. Of particular importance is discovering how knowledge (which is high given increased education) becomes consciousness and eventually action for sustainable consumption (Never and Albert, 2019).

Ensuring availability and sustainable management of safe water and safe sanitation for all can be achieved by expanding access to community water systems. For cities to be more inclusive, safe, smart, resilient, and sustainable, the government should considerably improve access to affordable housing. In the wake of risks of job losses from automation, social protection measures are also important, especially for middle-income households relying on OFW remittances (Albert *et al*. 2018). These steps to manage risks and resilience are aligned with the country's commitment to attaining the Sustainable Development Goals to ensure that divides that separate the low-, middle-, and high-income classes will not get any wider.

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Annex: Multinomial Logistic Regression results (R-squared: 0.45)

Middle-income (Base: low-income)							
Variable	**Description**	**Coeff**	**Std Error**	**z**	**P-val**	**95% confidence**	
fsize	Family size	-0.884	0.027	-33.09	0.00	-0.936	-0.831
fsize_sq	Family size squared	0.043	0.002	20.14	0.00	0.039	0.047
age	Age of HH head	0.027	0.007	4.2	0.00	0.015	0.040
age_sq	Age of HH head squared	0.000	0.000	-4.65	0.00	0.000	0.000
p_mem_0_14	Proportion of members aged 0 -14	-2.635	0.087	-30.2	0.00	-2.806	-2.464
married	Married HH head	-0.241	0.046	-5.22	0.00	-0.332	-0.151
male	Male HH head	0.005	0.046	0.11	0.91	-0.085	0.095
urban	Urban residence	0.205	0.040	5.15	0.00	0.127	0.283
regn1	Region I	-0.269	0.086	-3.11	0.00	-0.438	-0.100
regn2	Region II	-0.345	0.087	-3.98	0.00	-0.515	-0.175
regn3	Region III	-0.256	0.082	-3.11	0.00	-0.418	-0.095
regn4	Region V	-0.954	0.091	-10.47	0.00	-1.132	-0.775
regn5	Region VI	-0.515	0.085	-6.04	0.00	-0.682	-0.348
regn6	Region VII	-0.698	0.088	-7.9	0.00	-0.872	-0.525
regn7	Region VIII	-0.879	0.092	-9.58	0.00	-1.059	-0.699
regn8	Region IX	-0.959	0.098	-9.74	0.00	-1.152	-0.766
regn9	Region X	-1.113	0.097	-11.49	0.00	-1.302	-0.923
regn10	Region XI	-0.777	0.090	-8.61	0.00	-0.954	-0.600
regn11	Region XII	-1.194	0.096	-12.5	0.00	-1.381	-1.007
regn12	CAR	-0.200	0.091	-2.21	0.03	-0.377	-0.022
regn14	ARMM	-1.395	0.115	-12.18	0.00	-1.619	-1.170
regn15	Region XIII	-1.516	0.101	-15.03	0.00	-1.714	-1.318
regn16	Region IVA	-0.290	0.081	-3.56	0.00	-0.450	-0.130
regn17	Region IVB	-0.131	0.103	-1.27	0.21	-0.333	0.071
hoh_hgc_2	HH head: Some elementary/elementary	0.343	0.110	3.11	0.00	0.127	0.559
hoh_hgc_3	HH head: Some HS/HS	0.751	0.113	6.66	0.00	0.530	0.972
hoh_hgc_4	HH head: Some college/college/post-col	1.684	0.117	14.45	0.00	1.456	1.912
house_strong_3	Strong roof and walls	0.566	0.034	16.78	0.00	0.500	0.632
ts_squatter	Squatter	-0.005	0.092	-0.05	0.96	-0.185	0.176
ts_oh_ol	Own house/Owner-like possession	0.103	0.035	2.95	0.00	0.034	0.171
w_tv	With TV	0.681	0.044	15.34	0.00	0.594	0.768
w_ref	With Ref	1.352	0.034	40.23	0.00	1.286	1.417
w_ac	With Airconditioner	1.618	0.083	19.4	0.00	1.454	1.781
w_car	With car	1.736	0.114	15.26	0.00	1.513	1.959
w_cellphone	With cellphone	0.745	0.048	15.43	0.00	0.651	0.840

Middle-income (Base: low-income)							
Variable	**Description**	**Coeff**	**Std Error**	**z**	**P-val**	**95% confidence**	
ws_o_faucet	Faucet	0.485	0.034	14.42	0.00	0.419	0.551
w_elec	With electricity	0.304	0.069	4.41	0.00	0.169	0.439
q5	Agricultural barangay	-0.327	0.033	-10	0.00	-0.391	-0.263
q1c	Living in Poblacion	0.059	0.039	1.49	0.14	-0.018	0.136
q4g	High school in barangay	0.002	0.033	0.06	0.95	-0.062	0.066
q10a	No. of fin establishment in brgy	0.003	0.001	2.86	0.00	0.001	0.005
q8b	No. of mnfg est within 2 km from bgy	0.000	0.000	0.56	0.58	-0.001	0.001
q4e	With market place in barangay	0.075	0.036	2.11	0.04	0.005	0.145
_cons	Constant	0.010	0.217	0.04	0.97	-0.416	0.436

Source: Authors' estimates

High_income							
Variable	**Description**	**Coeff**	**Std Error**	**z**	**P-val**	**95% confidence**	
fsize	Family size	-2.070	0.069	-30	0.00	-2.205	-1.935
fsize_sq	Family size squared	0.107	0.005	19.73	0.00	0.096	0.117
age	Age of HH head	0.074	0.021	3.56	0.00	0.033	0.114
age_sq	Age of HH head squared	-0.001	0.000	-3.4	0.00	-0.001	0.000
p_mem_0_14	Proportion of members aged 0 -14	-4.190	0.325	-12.89	0.00	-4.827	-3.553
married	Married HH head	-0.080	0.125	-0.64	0.52	-0.326	0.166
male	Male HH head	-0.324	0.116	-2.79	0.01	-0.550	-0.097
urban	Urban residence	0.132	0.120	1.1	0.27	-0.104	0.368
regn1	Region I	-0.675	0.284	-2.38	0.02	-1.232	-0.118
regn2	Region II	-0.309	0.277	-1.12	0.26	-0.852	0.234
regn3	Region III	-0.817	0.266	-3.08	0.00	-1.338	-0.297
regn4	Region V	-1.627	0.329	-4.95	0.00	-2.272	-0.983
regn5	Region VI	-1.118	0.299	-3.74	0.00	-1.705	-0.531
regn6	Region VII	-1.094	0.284	-3.86	0.00	-1.650	-0.539
regn7	Region VIII	-0.599	0.285	-2.1	0.04	-1.158	-0.040
regn8	Region IX	-1.410	0.342	-4.12	0.00	-2.081	-0.740
regn9	Region X	-1.617	0.313	-5.16	0.00	-2.230	-1.003
regn10	Region XI	-1.355	0.289	-4.68	0.00	-1.922	-0.788
regn11	Region XII	-1.504	0.311	-4.84	0.00	-2.113	-0.896
regn12	CAR	-0.521	0.258	-2.02	0.04	-1.025	-0.016
regn14	ARMM	-2.520	0.781	-3.23	0.00	-4.052	-0.989
regn15	Region XIII	-2.014	0.324	-6.21	0.00	-2.650	-1.378
regn16	Region IVA	-0.878	0.251	-3.5	0.00	-1.369	-0.386
regn17	Region IVB	0.838	0.299	2.81	0.01	0.253	1.423
hoh_hgc_2	HH head: Some elementary/elementary	-0.407	0.635	-0.64	0.52	-1.650	0.837
hoh_hgc_3	HH head: Some HS/HS	0.539	0.628	0.86	0.39	-0.692	1.770
hoh_hgc_4	HH head: Some college/college/post-col	2.636	0.626	4.21	0.00	1.410	3.863
house_strong_3	Strong roof and walls	1.641	0.254	6.46	0.00	1.143	2.140
ts_squatter	Squatter	-0.936	0.785	-1.19	0.23	-2.474	0.603

High_income							
Variable	**Description**	**Coeff**	**Std Error**	**z**	**P-val**	**95% confidence**	
ts_oh_ol	Own house/Owner-like possession	0.461	0.144	3.21	0.00	0.180	0.743
w_tv	With TV	1.033	0.275	3.76	0.00	0.494	1.571
w_ref	With Ref	2.201	0.156	14.1	0.00	1.895	2.507
w_ac	With Airconditioner	2.644	0.132	19.99	0.00	2.385	2.904
w_car	With car	3.658	0.153	23.97	0.00	3.359	3.957
w_cellphone	With cellphone	1.218	0.207	5.87	0.00	0.811	1.624
ws_o_faucet	Faucet	0.664	0.119	5.57	0.00	0.430	0.898
w_elec	With electricity	0.562	0.557	1.01	0.31	-0.529	1.654
q5	Agricultural barangay	-0.102	0.110	-0.93	0.35	-0.318	0.114
q1c	Living in Poblacion	0.178	0.103	1.74	0.08	-0.023	0.379
q4g	High school in barangay	0.159	0.100	1.58	0.11	-0.038	0.355
q10a	No. of fin establishment in brgy	0.010	0.002	6.18	0.00	0.007	0.014
q8b	No. of mnfg est within 2 km from bgy	0.002	0.001	1.87	0.06	0.000	0.003
q4e	With market place in barangay	-0.073	0.102	-0.71	0.48	-0.274	0.128
_cons	Constant	-5.543	0.992	-5.59	0.00	-7.486	-3.599

Source: Authors' estimates