Alternative Approaches to Measuring the American Middle Class: Insights from the PSID

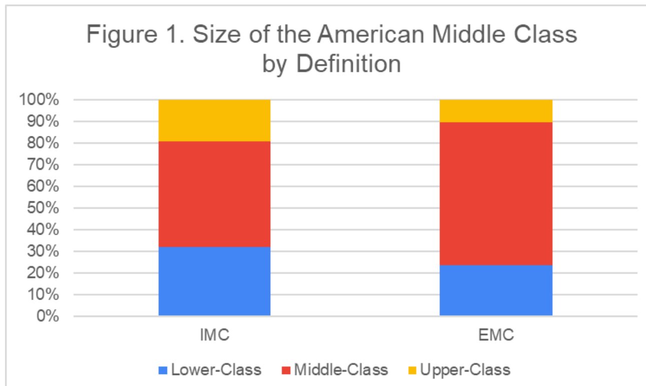
Extended Abstract

A strong middle class is the bedrock of any prosperous economy and cohesive society, as the middle class sustains economic activity, drives much of the investment in health, education, and housing, and contributes significantly to the social safety net through its tax contributions (OECD, 2019). However, despite its importance, there is nothing approaching a universal definition (Reeves et al., 2018; U.S. Department of Commerce, 2010). Three groups of empirical approaches to defining the middle class have been identified: (1) the financial resources definition, usually with income as the measure (Frank, 2013; Haskins et al., 2008; OECD, 2019; Pew Research Center, 2015, 2016, 2022), (2) the self-reported class approach (Pew Research Center, 2012, 2014), and (3) the multidimensional definition using indexes that aggregate occupation, income, education, and other characteristics such as culture and emotional state (Duncan, 1961; Gilbert, 2014; Nam & Boyd, 2004; Newman, 2006; Newman & Chen, 2007; Sullivan et al., 2001).

One of the most widely cited measures is the Pew Research Center's definition, which defines the middle class as those households with size-adjusted incomes between two-thirds and 200 percent of the median pre-tax income (IMC) (OECD, 2019; Pew Research Center, 2015, 2016, 2022). While convenient, using pre-tax income is problematic due to complications related to multiple sources of income and the failure to account for assets, tax, and government transfers, all of which can substantially affect the actual amount of financial resources available to households. In our previous work, we proposed a new measure of the middle class based on household expenditure instead of pre-tax income. The Expenditure Middle-Class (EMC) measure has several advantages over the pre-tax income measure. First, it excludes income tax from financial resources. Second, it provides a better measure of permanent income as it addresses the transitory nature of single-period income and accounts for spending out of assets and credit for consumption smoothing over the life cycle. This is especially relevant for retired households that spend down their retirement savings without earning income. Third, it can overcome the well-known issue of income under-reporting in government surveys such as the Current Population Survey (Fitzgerald & Moffitt, 2022).

In our previous work, we analyzed data from the Consumer Expenditure Survey (CE) (US Department of Labor, 2022) using these two definitions. Our main findings were: (1) Using the EMC definition yielded a larger middle class than using the IMC definition; (2) Significant contributors to different classifications were: high assets low income households, such as retired households and people not working; in-kind transfer recipients, households with high income but low spending, such as homeowners without a mortgage, or households with low income but high spending, such as borrowers and households with high dependency ratio; (3) The middle class households defined by these two definitions have similar achievement indicators, including rates on home ownership, vehicle ownership, health insurance, vacation uptake, and adequate emergency savings; and (4) While the size of American middle class has been shrinking from 2017 to 2021 using the IMC definition, the EMC definition shows the opposite trend, with the size of American middle class slightly larger in 2021 compared to 2017.

In this study, we extend our work by using a different U.S. dataset: the Panel Study of Income Dynamics (PSID) (University of Michigan Survey Research Center, 2011-2021). For our cross-sectional analysis, we use 2019 data with a sample size of 27,517. First, we estimate the size of the American middle class using both the EMC and IMC methods. Second, we compare and contrast these two sets of estimates, exploring the characteristics of households classified as middle class using one definition but not the other. Finally, we explore the time-trend of the size of American middle class using these two definitions.



Using the EMC, a household is considered middle class if its household-size-adjusted total expenditure ($\frac{\text{Total expenditure}}{\sqrt{household\ size}}$) is between 2/3 and 200% of the median. Using the IMC, a household is classified as middle class if its household-size adjusted pre-tax income ($\frac{\text{Pre-tax income}}{\sqrt{household\ size}}$) is between 2/3 and 200% of the median. With these definitions, we estimate that 65.86% (63.54% using the CE) of households belong to the middle class based on the EMC, while only 48.83% (46.08% using the CE) belong to the middle class based on the IMC (Figure 1). In comparison to the EMC, the IMC classifies more households into both the lower class and the upper class.

Table 1 presents crosstab estimates of these two measures. There is a fair amount of disagreement between the two definitions of who belongs to the middle class. To investigate these agreements/disagreements, we divide the sample into nine mutually exclusive groups by their EMC and IMC classifications. Here we report one sub-sample logistic regression analysis of EMC middle class households (n=17,438) that were classified as IMC lower-class (n=4,040), IMC middle-class (n=10,955), and IMC upper-class (n=2,443). We hypothesize that EMC middle-class households with high assets/low income, receiving in-kind transfers, or who are borrowers are likely to have expenditures that are higher than their income and thus are more likely to be classified as IMC lower-class, while EMC middle-class households that are savers are more likely to be classified as IMC upper-class due to their expenditures to be lower than income.

Table 1. Crosstab of the Two Measures: # of Sample Household

		EMC			
		Lower	Middle	Upper	Total
IMC	Lower	6,508	4,040	91	10,639
	Middle	1,562	10,955	449	12,966
	Upper	42	2,443	1,427	3,912
	Total	8,112	17,438	1,967	27,517

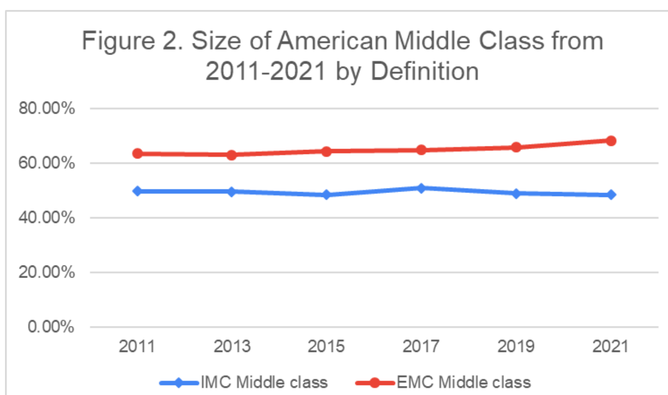
Average marginal probabilities are presented in Table 2. Many variables are statistically significant. Most notable are employment status, education, and public assistance, likely linked to financial resources captured by the EMC but not IMC, such as assets, debts, and public transfers. Race/ethnicity, family size, and family type are also significant. We are in the process of digesting these results. We hope to have more insights into these issues when we present our work at the conference, should our paper be accepted for presentation.

Finally, we explored time trends of the American middle class by analyzing six waves of PSID data from 2011 to 2021 using both EMC and IMC. Figure 2 shows the size of American middle class by definition. Note that when middle class is defined using IMC, the size of American middle class shows a slightly declining trend. However, when the EMC definition is used, the size of American middle class increases over time from 2011 to 2021. These opposite patterns show at least that it is not a clear-cut picture that American middle class has been declining, as has been reported extensively in the media. More research needs to be done in order to have an in-depth understanding of the American middle class and the many social and economic implications associated with the concept of the middle class.

Table 2. Average Marginal Probabilities of EMC Middle-Class Households Classified as IMC-Lower-Class, IMC-Middle-Class, and IMC-Upper-Class

Variable	IMC-Lower-Class	IMC-Middle-Class	IMC-Upper-Class	Overall Statistical Significance
Age	0.00%	-0.05%	0.05%	
Female	9.62%	2.88%	-12.50%	***
# children/family size	21.45%	6.89%	-28.34%	***
Race/ethnicity (Non-Hispanic white)				
Non-Hispanic blacks	1.54%	7.22%	-8.75%	***
Hispanics	6.98%	0.95%	-7.93%	***
Other	5.98%	-8.22%	2.24%	***
Education (High school graduate)				
<High school	10.67%	-4.47%	-6.19%	***
Some college	-1.04%	-3.02%	4.07%	***
College graduate+	-7.59%	-11.63%	19.21%	***
Family type (Married)				
Single-male headed	9.40%	-5.21%	-4.19%	***
Single-female headed	4.75%	-7.65%	2.90%	
Employment status (Employed)				
Not working	14.81%	-8.45%	-6.35%	***
Retired	15.18%	-5.68%	-9.50%	***
Region (Northeast)				
Midwest	4.02%	2.14%	-6.15%	***
South	5.36%	-1.49%	-3.87%	***
West	2.47%	-1.58%	-0.89%	**
Debt-to-income ratio/100	10.33%	-4.46%	-5.87%	***
Food stamp	21.84%	-12.55%	-9.29%	***
Home tenure (homeowner with mortgage)				
Homeowner without mort	-6.80%	3.16%	3.63%	***
Renter	5.97%	1.16%	-7.13%	***
Neither renter or owner	15.64%	-11.37%	-4.27%	***
Per capita liquid asset savin	-0.05%	0.04%	0.01%	*

Note: *** p<0.01, ** p<0.05, *p<0.1



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