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# Poverty in New York City: Consumption Expenditure as a Poverty Predictor

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Poverty in New York City: Consumption Expenditure as a Poverty Predictor

by

Michael Lomtevas

Submitted to the Committee on Undergraduate Honors at Baruch College of the City University of New York in partial fulfillment of the requirements for the degree of Bachelor of Arts in Economics with Honors.

April 30<sup>th</sup>, 2018

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## **Abstract**

This thesis seeks to replicate the findings of a 2012 study published by Meyer and Sullivan in the *Journal of Economic Perspectives* using data provided by the Columbia University Longitudinal Wellness Survey. That study found that a poverty measure based on consumption predicted material hardship better than both the Official (OPM) and Supplemental Poverty Measures (SPM). This was found to be the case because a well-constructed consumption poverty measure (CPM) captures in-kind benefits that the OPM neglects. Such a measure also avoids issues inherent in the SPM that arise from respondents underreporting their income and includes the ability to consume out of savings, which neither the SPM nor OPM do.

This replication study was of particular interest given New York City's high cost of living relative to the rest of the country, which is reflected in the poverty thresholds of both the Census Bureau's SPM and the City's own SPM. I sought to use methods similar to those in the Meyer and Sullivan study to determine if a CPM is in fact a more accurate measure of poverty in New York City. My analysis consists of two parts. The first analysis compared respondents classified as in poverty to how these different poverty measures are defined. The other does this according to the bottom 21.8% of each poverty measure. I found the supplemental poverty rate to be higher than the official and consumption poverty rates. I also found the consumption poverty rate to be much lower than either the OPM and SPM for reasons identical to those in the Meyer and Sullivan study.

I also found that the OPM was unexpectedly effective at identifying hardship despite its noted shortcomings as a poverty measure. Descriptive statistics and regressions showed that hardships are more highly associated with official poverty than supplemental or consumption poverty before considering demographic characteristics such as age, gender, education, and race. While these hardships still appeared more highly related to official poverty after controlling for these demographic parameters, these results were not shown to be statistically significant. My results do not confirm Meyer and Sullivan's findings that a CPM is strictly the better measure. This is possibly due to the difficulty of measuring housing consumption in an area with so much non-market housing like NYC. Rather, they show that the OPM is a relatively effective indicator and predictor of hardship in NYC.

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## **Introduction**

A study published in the *Journal of Economic Perspectives* by Meyer and Sullivan (2012) sought to determine which of the official, supplemental, or consumption poverty measures is a more accurate predictor of hardship and is thus better at identifying the disadvantaged. It also examines how each poverty measure assesses changes in economic well-being over time. It found that, although the SPM was conceptually favorable to the OPM, it tended to categorize as in poverty more college graduates, those who own a home and car, those who live in a larger housing unit, and other more favorable characteristics than the other poverty measures did. The study concluded that a CPM with regularly revised poverty thresholds is preferable to either measure at determining and predicting hardship, because it avoids inaccuracies caused by underreported income and issues with the SPM's threshold. One of these issues is that the value of SPM thresholds changes in real terms over time, which makes it difficult to determine whether changes in poverty are due to changes in income or changes in thresholds.

The New York City Longitudinal Wellness Survey, also called the Poverty Tracker study, collected detailed information on hardships faced by NYC residents across the income distribution. It measured poverty based on the official and supplemental measures as well as on material hardship, adult health problems, and family health and well-being from a representative panel of approximately 2,300 households (Neckerman et al. 2016). This thesis seeks to determine whether Meyer and Sullivan's findings held in the context of NYC, which has generous social programs relative to other areas in the country. That should signify that the SPM would do better than the OPM at capturing the effects of these programs.

## **Background**

While material hardship currently eludes official definition, Mayer and Jencks (1989) were among the first to measure material hardship according to three categories. They were food, housing, medical care. If a household or individual was unable to acquire one of these three things, then hardship was recorded as having been experienced. More recent research built upon this and introduced additional categories of hardship. Neckerman et al., for example, includes the inability to pay utility bills (2016). The OPM compares resources against a measure of need. Resources are defined as pre-tax cash income and do not include in-kind

benefits like those conferred by the Supplemental Nutrition Assistance Program (SNAP) or tax credits such as the Earned Income Tax Credit. Measures of need are called poverty thresholds. Poverty thresholds are adjusted for family size and age-composition (Dalaker 2015). However, the manner in which the OPM measures income has raised concerns over its ability to measure material hardship (Mayer Jencks 1989). While these may not have been too important at the time the measure was adopted, they were magnified as time progressed and society and the economy changed. These changes, as Citro and Michael (1995) find, involved “labor force participation, family composition, geographic price differences, growth in medical care costs and benefits, government taxation, and the provision of in-kind benefits to family and individuals, and the overall increase in the standard of living,” although some of these relate to the threshold measure and not just the measure of resources.

These concerns led to the creation of an independent study on the concepts, methods, and information needed for a more adequate poverty measure. In 1995, the National Academy of Sciences recommended that a series of revisions of metrics used in the poverty measure’s calculations, including in-kind transfers and cost-of-living adjustments, be included in a novel poverty measure. This would be the SPM that the Obama administration adopted in 2010 (Citro Michaels 1995). However, the SPM did not replace the official measure. Rather than solely cash income, SPM family resources are computed as the sum of cash income plus in-kind transfers minus taxes plus tax credits minus several other expenditures, such as medical care or insurance. The needs threshold is set at the 30<sup>th</sup> percentile of spending on necessities defined as food, clothing, shelter, and utility needs (Census 2010). It can be seen that the two measures are very different. Even so, the supplemental poverty rate for the United States as a whole is similar to the official rate.

### **Data and Methods**

The Columbia University Longitudinal Survey of Wellbeing, a survey of New York City residents aged 18 and older, was initially conducted between December 2012 and March 2013. It collected detailed information on income, material hardship, and family health and well-being from a representative panel of approximately 2,300 households. Survey modules were conducted at 3-month intervals and covered topics including assets and debt, neighborhood and program service utilization, and adult and child health. Every follow-up survey module posed basic

questions designed to gauge the changes, if any, that each household had undergone between waves. A second panel which began in 2015 is currently underway. This thesis contains data from the panel and uses waves up to the most recent wave (Wimer et al. 2014a). It also focuses on the concerns surrounding the OPM and compares this measure with the SPM and a CPM that I constructed using expenditures reported in waves 4 and 5 (12 and 15 months after baseline). The baseline and eight subsequent waves provided descriptive data that are presented in a series of tables throughout this thesis.

### **Sample and Data Collection**

The baseline Poverty Tracker survey was conducted between December 2012 and March 2013 and collected detailed information on income, material hardships, and family health and well-being from a representative sample of about 2,300 members throughout New York City (CPRC).

The primary Poverty Tracker sample was generated from a random digit dial (RDD) phone sample conducted by the research organization SRBI. The first panel generated approximately 2,000 RDD sample members (Baseline). Since the Poverty Tracker study is focused on dynamics of poverty and hardship, an oversample of landline numbers from high poverty (greater than 20% poor) zip codes was included, although both landline and cell phone numbers were included in the sample frame. Weights were imputed to make the sample representative of the NYC population. Respondents were enrolled in a panel to be followed over time, with periodic survey modules fielded at 3-month intervals.

The topics these modules covered ranged from assets and debt to neighborhoods and program service utilization and adult and child health. The baseline wave, wave 4, and wave 8 (24 months after baseline) surveys contain repeated follow-up questions that are used to calculate hardship and poverty measures. These questions were not included in the other waves. Instead, the other 3-month follow up surveys focused on specific topics such as health and well-being, service utilization, assets and debt, consumption, work and employment, and health and immigration. In addition, questions in these follow-up surveys focused on various experiences that may have occurred to families between waves. Some questions, like whether enough food is present in the household or whether electricity was cut off because of bill nonpayment, however, were asked in each wave (CPSP).

The observation unit for this study is the household, and will be further discussed in Measures.

## **Weights**

Survey weights were used to allow inferences from the sample to apply to the overall NYC population. Since this study is focused on poverty and hardship, low-income neighborhoods and low-income individuals who use social services were oversampled. According to Appendix B of the codebooks for the Poverty Tracker study (2016), this practice provides better information for comparisons to be made between the poor and nonpoor according to each poverty measure. The weights were then used to adjust for this oversampling, for random over or under-representation, and survey non-response due to attrition.

Most of my analysis deals with official and supplemental poverty information taken from wave 4. The attrition rate between the baseline interview and wave 4 was roughly 40%, which can be problematic if the attrition is non-random. If the attrition is random, then it would have no substantial effect on the results. If the attrition is non-random, then attriters with hardship characteristics relevant to this study would be missing from the data. While it may be expected for disadvantaged respondents to attrit at a higher rate, it is not clear how attrition would affect the relationship between hardship and the three poverty measures. This remains a potential area for future research. Nonetheless, attrition remains a limitation of this study.

All of the descriptive statistics I report are weighted. I used the person weight that that accompanies each wave, with the exception of wave 5, since the wave 5 weight was missing from the master data set. A regression showed that the weights were highly correlated across each wave (correlated over .97), so while I theoretically could have used the same weight for each wave and obtain very similar results, I still used contemporaneous weights for each wave. I used the weight for wave 4 in place of the weight for wave 5. I checked the sensitivity of key regressions to weighting as well.

## **Measures**

The Poverty Tracker study contained variables for whether respondents were considered poor under either the OPM and SPM. As previously stated, expenditures reported mostly in wave 5 allowed me to construct a CPM using a threshold I created from the study's OPM data and a



threshold estimator provided by Cutler and Katz (1992). I chose to use the study's OPM data to make this threshold, and not its SPM data, for several reasons. The data set itself did not include SPM thresholds. Instead, it included a supplemental poverty dummy indicator that was 1 if the respondent was SPM poor and 0 if the respondent was not. While the data set included the ratio of SPM income-to-needs, it did not separately provide the SPM resources and threshold. It would have been possible to create an SPM threshold, but this would not have been easy, because SPM thresholds are computed for complete metropolitan areas and states but not for cities (Fox 2016). Even if I had wanted to, I would not have been able to obtain a Census-published SPM threshold for just NYC. Using the threshold for the metropolitan area in which NYC is located would not be the same thing, and doing so likely would have obscured my results. Also, the SPM threshold is higher than the OPM threshold because it includes more resources than the OPM does. The poverty rate I found for the CPM, which will be discussed later, was found to be 5% even while using the lower OPM threshold. I could not use the SPM to get a poverty rate that is reasonable enough to compare to the other measures, because doing so would have likely yielded a poverty rate even lower than 5%. Meaningful comparisons between the poor and nonpoor cannot be made at rates this low. Also, the decision to use OPM data to calculate the threshold used in constructing a CPM is of little consequence for my later comparisons in which I sorted the bottom 21% of each poverty measure (which will also be discussed shortly). Either threshold would have allowed me to do that, and my results would not have significantly differed if I had used SPM data. So, using OPM data to construct the thresholds was a reasonable choice given the difficulties of the other option. How much my results would change if SPM thresholds are used instead, though, remains an interesting area for future research.

Unlike the household definition used in the OPM, the definition used by the SPM includes unmarried domestic partners and their relatives, unrelated children younger than age 15, and foster children younger than age 22 (Census 2013). The SPM uses this definition in calculating income thresholds. There is no indication in the codebooks that the Poverty Tracker study utilized different household definitions for the SPM and OPM. The authors of the study likely chose to use identical household definitions to show the importance of differences in resources and threshold measures, and not differences in household definitions.

The Poverty Tracker's 2012 OPM thresholds were assigned to each sample member based on published Census tables, while the study's 2012 SPM thresholds were created when

only 2011 national-level thresholds were available. So, the authors of the study had to estimate these thresholds through two adjustments. Since these thresholds are published separately by housing type, the study's authors asked respondents their housing status and accordingly categorized them.<sup>1</sup> These thresholds were then adjusted using the CPI to bring the 2011 thresholds into 2012. A further adjustment reflected NYC's cost of living using New York City's Center for Economic Opportunity data on fair market rents (Wimer et al. 2014b). SPM household income includes annual earnings, retirement income, and transfer income including food stamps, disability, cash welfare, unemployment insurance, WIC, housing benefits, and school lunches (Fox 2016). OPM poverty status is determined by comparing pre-tax cash income against a threshold set at three times the cost of a minimum food diet in 1963 and is updated annually for inflation using the CPI. Unlike for those used in the SPM thresholds, OPM resources do not account for noncash government benefits and OPM thresholds do not differ geographically for regional differences in the cost of housing (Census 2017).

To construct the CPM, I calculated the annual expenditures reported by respondents on categories similar to those used in the 2012 Meyer and Sullivan paper. These included expenditures on food eaten at home and away from home, alcohol, clothing and clothing services, personal care, various utility bills, home furnishings and appliances, moving and/or storage, baby supplies and child care, education (although this was omitted from the CPM constructed in this paper since education is considered investment rather than consumption), alimony payments, recreation, vacation, tobacco, and transportation. Respondents reported whether they classified these as weekly, monthly, or annual expenditures. Their responses were recorded and the total annual expenditure amounts for each category were then calculated.

Housing was the most complex consumption category to construct. Information on housing consumption was collected in waves 4 and 5 (months 12 and 15 after baseline). Respondents reported whether their home was mortgaged, owned, or rented. Several steps were taken to determine annual housing consumption. First, I examined what respondents reported for their monthly rent or mortgage payment. About half of rental units in NYC are non-market (Furman Center 2014), i.e. rent-controlled, rent-regulated, or classified as public housing. I also looked at how much respondents thought their residence could be rented for if it were not rent-controlled or rent-regulated. Since the responses for this latter question were almost invariably

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<sup>1</sup> i.e. renters, owners who hold mortgages, owners who don't, etc.

higher than their actual payments, this meant that respondents were consuming more housing services than they were spending. To calculate housing consumption, then, I used their responses for the latter question.

When data were missing, I used a conservative imputation for missing housing consumption data. Meyer and Mittag (2015) found that a two-adult household consumes an average of \$12,000 of housing services annually. I then assumed that any housed family consumes at least \$6,000 per adult equivalent of housing per year, or \$500 per month, and limited this assumption with a \$12,000 cap on housing consumption for households with three or more persons. This is not a bad lower-bound estimate of the housing consumption of anyone housed in NYC, mainly because housing in NYC is more expensive than in the rest of the state. An estimate taken from the average market value of housing in New York State would have underestimated the market value in NYC. Also, housing assistance, while reported and taken account of in the calculated amount of total consumption, does not cover the full costs of housing. Lastly, I excluded four variables that recorded miscellaneous expenses. This was done because it would have been too time-consuming to analyze, categorize, and often times translate each expense that each respondent reported for each category from the respondents' language to English. I used this conservative estimate because while using a less conservative estimate would have lowered the CPM, the CPM was already vastly lower than either the OPM or SPM (about 5% compared to 21% and 27% respectively). In addition, the effect that the missing expenditures would have had on total consumption would have been negligible. Its non-inclusion, then, has had a negligible effect on my overall results.

Measures of material hardship were used to test the predictive validity of the SPM, OPM and CPM.<sup>2</sup> Material hardship records a family's experience with hardship in several areas. I looked at five areas: financial, utility bill, food insecurity, medical, and housing hardship. Financial hardship was defined as running out of money between paychecks or before the end of the month. Bill hardship was defined as having electricity or other utilities cut off for nonpayment of bills. Food insecurity was defined as it being reported that the family did not have enough to eat, the food did not last, or the respondent was worried the food would run out. Medical hardship was defined as needing to forgo medical services because of a lack of money

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<sup>2</sup> I utilized the same measures of material hardship that Neckerman et al. analyzed.

for care. Housing hardship was defined as having to move in with others, or live in a shelter, because the family did not have a place to live.<sup>3</sup>

Ten variables that are representative of these indicators of hardship were available for the baseline, fourth, and eighth waves. Since the validity of this thesis depends on whether these indicators of hardship actually capture hardship, variable selection was based on issues that continue to face disadvantaged New Yorkers. The food insecurity questions that I selected are whether the sample member had enough food, anxiety over food, and/or a shortage of food. I selected survey questions that dealt with food insecurity because approximately 1.3 million New Yorkers go hungry every day. In addition, minority and low-income neighborhoods have notoriously poor access to healthful food (Segal 2010). The housing hardship survey questions I selected asked if the respondent had enough money to make their rent or mortgage, had moved in with others, and if they stayed in a shelter. I selected questions that dealt with housing, because homelessness is one of New York's most persistent issues of public health and poverty. In 2013, for example, the number of people sleeping in city shelters each night had not been seen since the Great Depression (Shan Sandler 2016). The utility bill insecurity questions that I selected are whether the respondent didn't pay the full utility bill due to a lack of funds, and whether they had one or more utilities cut off. I selected utility bill insecurity as an indicator of hardship, because utilities are taken into consideration by both the SPM and New York City's own poverty measure. They can also be a serious source of concern for New York citizens who face material hardship (NYC 2017). The medical hardship survey question I selected was whether the respondent needed but could not afford medical care. I selected this as an indicator of hardship, because a Robin Hood study found that nearly half of all New Yorkers had income lower than what is needed for basic necessities and/or had poor health that limited their participation in the workforce (Robin Hood 2016). The financial hardship survey question I selected was whether the respondent ran out of money before their next paycheck. I selected these variables because they represent material hardship within these waves.<sup>4</sup>

Only five such variables were available for each other wave. However, they are still generally categorized by financial, utility bill, food insecurity, medical, and housing hardship.

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<sup>3</sup> Neckerman et al. pS54.

<sup>4</sup> In other words, if the sample member couldn't pay for something that they would otherwise have paid for, if they had the means to do so, then this was interpreted as material hardship and was included in my findings.

These variables were constructed from questions that asked how often the sample member worried about food, if they stayed in a place not meant for regular housing, if they had a utility turned off, if they could not receive medical care because of the cost, and whether they had enough money at the end of the month. I selected these variables for the same reason as above, although I would like to have been able to track the same ten variables across all waves rather than in only 3 out of 9.

The baseline wave and wave 4 are the only waves with both OPM and SPM statistics. As noted, the CPM information was taken from waves 4 and 5. Therefore, I used OPM and SPM information from wave 4 to maximize the comparability across the three measures. The hardship variables were coded to indicate the number of “yes” (versus “no”) responses among the non-missing responses.<sup>5</sup>

Demographic information was collected from the survey as well. Specifically, I looked at survey members’ age, gender, family size, number of children, number of rooms in the home, level of education, and race. Binary variables were constructed for variables that had multiple and overlapping responses. For example, sample members might indicate their race as both Hispanic and black. Race categories were then created from these binary variables to preserve accuracy.<sup>6</sup> When I conducted regressions, which will be discussed under Results, I controlled for certain demographic variables. These included all races and education levels, gender, and whether any children younger than 6 or adults older than 65 lived with the sample member.

Table 1 illustrates the weighted means for the OPM, SPM, and CPM as of wave 4 of the survey. 27.1% of the population are SPM poor, 21.8% OPM poor and 5.5% are CPM poor. Since a smaller percentage of the sample is classified as CPM poor and OPM poor than SPM poor, this might lead us to expect that the CPM and OPM measure poverty better than the SPM, i.e. only the truly poorest survey members are being classified as in poverty according to the OPM. However, it could also be the case that the CPM and OPM are excluding some truly needy persons from the poor category.

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<sup>5</sup> For example, food anxiety in the codebook contained a range of responses from ‘yes’ to ‘sometimes’ to ‘no’. Typically, responses were coded as ‘yes’ if the sample member reported ‘sometimes’ or ‘at least once’. ‘No’ was coded for every other response, and ‘missing’ responses were kept separate and apart from these ‘yes’ and ‘no’ responses.

<sup>6</sup> The race categories were Hispanic, Hispanic-black, non-Hispanic black, non-Hispanic white, Asian, and ‘other’. ‘Other’ included Alaskan Native, Native American, and Pacific Islander.

Note: I mainly analyzed Hispanic, non-Hispanic black, and white respondents since these race categories were the most affected by hardships in the Poverty Tracker study.

Therefore, rather than judge the measures solely by the fraction of the population deemed poor, I constructed an adjusted ‘apples-to-apples’ SPM and CPM that have the same poverty *rate* as the OPM (21.8%). In other words, I effectively lined respondents up from least- to most-neediest according to the SPM and CPM and called those individuals in the bottom 21.8% of the SPM income-to-needs ratio distribution<sup>7</sup> “adjusted SPM poor.” I did the same for those in the CPM distribution and called them “adjusted CPM poor.”

For more detail on how I did this, I started by cross-tabulating the SPM and CPM with the OPM. I then created a binary variable to see how many respondents were at or below the 21.8 percentile (the same percentage of OPM-poor respondents in wave 4 which is reported in Table 1) on both the SPM and CPM income-to-needs ratios’ distributions. I found that the income-to-needs ratio at the 21.8 percentile on the SPM distribution was .78. This ratio was used as a benchmark for Table 2b and 3b’s hardships comparison between the SPM and OPM. Later tables will show that very little difference was found in the correlations between indicators of hardship and the original SPM and the constructed “SPM-78”. Table 2b shows that SPM-78 was marginally closer to OPM in its correlations with the various indicators of hardship. I used the new variable, SPM-78, in my later regressions for comparison to the SPM and an adjusted CPM. The terms “adjusted SPM” and “SPM-78” will be used interchangeably throughout this thesis.

A similar computation was conducted for the constructed CPM. I was able to calculate the income to needs ratio for consumption poverty once I calculated the total annual expenditures for each respondent. To find the CPM income-to-needs ratio I divided total annual expenditure by an approximation to the official poverty threshold found in Cutler and Katz (1992), based on the number of children and adults in the household.<sup>8</sup> As I had done with the SPM-78 variable, I found that the CPM consumption to needs ratio was 1.69 at the 21.8 percentile. This meant that 21.8% of respondents had consumption levels below 1.69 times the official poverty threshold. The CPM constructed to have the same poverty rate as the OPM and will be referred to as “CPM-169” throughout the remainder of this thesis. Similar to SPM-78, it was used for later comparisons between the CPM, SPM and OPM. The terms “adjusted CPM” and “CPM-169” will also be used interchangeably throughout this thesis.

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<sup>7</sup> An income-to-needs ratio represents the ratio of family or individual income to their respective poverty threshold.

<sup>8</sup> For a given year, this is defined as:  $\text{threshold} = 12,316 * (\text{number of adults} + .76 * \text{number of kids})^{0.61}$

*Table 1*  
**Poverty Rates by Poverty Measure in Wave 4 (weighted)**

	%	No. of Observations
OPM	21.8	1,328
SPM	27.1	1,328
CPM	5.5	1,238

My analysis consisted of two parts. I first allowed the poverty rate to differ across the measures. I then set the SPM and CPM rates equal to the OPM rate. As a first step, Table 2a presents correlations between the SPM, OPM, CPM, and the various indicators of material hardship in wave 4. I chose to analyze wave 4 specifically because the three measures poverty were all available for that wave. The results presented in the table make intuitive sense. For example, it shows a  $r=.54$  correlation between OPM poverty and nonadjusted SPM poverty, but only a  $r=.001$  correlation between OPM poverty and nonadjusted CPM poverty. This likely reflects the drastically lower rate of CPM poverty, compared to the rate of OPM poverty displayed in Table 1. More tellingly, Table 2a presents consistently higher correlations between the OPM, rather than the SPM, and various indicators of hardship. For instance, not having money by the end of the month was more highly correlated with being OPM ( $r=.26$ ) than SPM poor ( $r=.14$ ). In addition, so too was living in a homeless shelter and not being able to pay rent ( $r=.13$  and  $r=.11$  for OPM, respectively and  $r=.07$  and  $r=.06$  for SPM, respectively). In other words, this shows that hardship is generally more highly correlated with OPM poverty than with SPM poverty – an indication that the OPM may be doing a better job than the SPM at identifying hardship. It should be noted, however, that both measures in this study do not appear highly effective at categorizing hardship given the low correlations between the many hardship indicators and all three poverty measures.

Moreover, Table 2a shows high correlations between running out of money and having no food, food anxiety, and/or food shortages. It also presents a very strong ( $r=.80$ ) correlation between having food anxiety and suffering a food shortage. Interestingly, there appears to be a relatively modest ( $r=.32$ ) correlation between running out of money and having utilities shut off or being unable to see a doctor due to a lack of money ( $r=.29$ ). This could mean that some

respondents are more worried about eating than they are about their utilities or health. This will be looked at in greater detail later.

The correlation between SPM poverty and staying in a homeless shelter is .07 while the correlation between and SPM-78 poverty and staying in a homeless shelter is .03 according to Table 2b. While the correlation coefficients are rather weak, this could still possibly mean that there are some respondents between the two measures who are not poor but are still being reported as having stayed in homeless shelters. There is also a very low correlation ( $r=.08$ ) between staying in a homeless shelter and not paying utilities, which makes sense since there are no utilities to pay for in homeless shelters. However, staying in a homeless shelter is also extremely weakly correlated to being unable to see a doctor. This result can be interpreted in several ways. Perhaps homeless shelters provide healthcare services onsite, or maybe respondents who have stayed in a homeless shelter are more concerned about finding a home than they are about finding medical care.

I created another table, Table 2b, that presents correlations of ten indicators of hardship, the OPM, and adjusted SPM-78 and CPM-169 poverty indicators. The biggest difference between Table 2a and 2b can be seen in the correlations between hardship and CPM-169. For instance, being CPM poor and not being able to pay rent were practically uncorrelated ( $r=.01$ ). Being CPM-169 poor and not being able to pay rent, on the other hand, had a much stronger (although objectively still weak) correlation ( $r=.13$ ). Not much difference, however, is noted in the correlations of hardships and SPM-78. This can likely be explained by consumption poverty's very low rate among respondents in the Poverty Tracker survey. Setting the CPM and OPM rates equal to each other made them more comparable, and this is seen in the table. Table 2b further shows that the poor look poorest, i.e. experience the most hardship, when it comes to food. All three measures, both adjusted and nonadjusted, show the respective measure's highest correlations with food hardship when it comes to not having enough food, having food anxiety, or having a shortage of food. This finding is also expressed in both Table 3a and 3b, where the difference between poor and nonpoor is greatest with the same food hardship variables for each poverty measure, again both adjusted and nonadjusted. The policy implications of this observation will be discussed at the conclusion of this thesis.



Table 2a

**Wave 4 Correlation matrix for OPM, nonadjusted SPM and CPM, and Hardship Indicators<sup>9</sup> (weighted)**

	SPM	OPM	CPM	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. SPM	1												
2. OPM	.54	1											
3. CPM	.001	.16	1										
4. no food	.12	.24	.08	1									
5. food anx.	.19	.32	.14	.45	1								
6. food shor.	.17	.31	.10	.49	.80	1							
7. can't pay rent	.06	.11	.01	.30	.35	.35	1						
8. doubled up	.12	.10	.08	.19	.22	.21	.20	1					
9. homeless shelter	.07	.13	.03	.21	.15	.17	.14	.37	1				
10. utilities paid in part	.14	.17	.03	.29	.39	.40	.44	.15	.08	1			
11. utilities turned off	.14	.14	.04	.27	.38	.39	.34	.21	.22	.48	1		
12. no doctor	.13	.14	-.06	.18	.23	.19	.22	.20	.09	.25	.17	1	
13. no money	.14	.26	.12	.29	.59	.56	.31	.18	.12	.43	.32	.29	1

<sup>9</sup> Table 2a and 2b key – 4: Did the respondent have enough food? 5: Did respondent suffer anxiety over food? 6: Did respondent experience a shortage of food? 7: Was respondent unable to make rent? 8: Did respondent move in with others?

9: Did respondent live in a shelter at any point? 10: Was respondent unable to pay utility bill because of lack of funds? 11: Were respondents' utilities turned off? 12: Was respondent unable to see a doctor because of lack of funds? 13: Did respondent run out of money before the end of the month?

*Note: see Appendix Table Zc for Variable and Response Definitions*

Table 2b

**Wave 4 Correlation matrix for OPM, adjusted SPM and CPM, and Hardship Indicators (weighted)**

	SPM -78	OPM	CPM- 169	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. SPM-78	1												
2. OPM	.56	1											
3. CPM-169	-.05	.12	1										
4. no food	.10	.24	.18	1									
5. food anx.	.19	.32	.22	.45	1								
6. food shor.	.18	.31	.20	.49	.80	1							
7. can't pay rent	.08	.11	.13	.30	.35	.35	1						
8. doubled up	.09	.10	.06	.19	.22	.21	.20	1					
9. homeless shelter	.03	.13	.01	.21	.15	.17	.14	.37	1				
10. utilities paid in part	.12	.17	.09	.29	.39	.40	.44	.15	.08	1			
11. utilities turned off	.15	.14	.12	.27	.38	.39	.34	.21	.22	.48	1		
12. no doctor	.12	.14	-.02	.18	.23	.19	.22	.20	.09	.25	.17	1	
13. no money	.12	.26	.20	.29	.59	.56	.31	.18	.12	.43	.32	.29	1

Hardship indicator variables were also constructed for non-binary responses and the resulting descriptive statistics were adjusted to account for survey non-response by dropping missing responses. These weighted descriptive statistics are displayed in Table 3a. Each wave presented in this table uses the variable for official and supplemental poverty reported in wave 4, as well as expenditure data as reported in waves 4 and 5. Interestingly, both Tables 3a and 3b show that in the baseline wave and wave 8, the adjusted and nonadjusted OPM, SPM, and CPM poor are less likely to move in with others or live in homeless shelter – less likely to do that than suffer food or medical hardship – even though they are generally more likely to not have enough money to make rent or their mortgage payment. One might have expected stronger associations between these indicators of hardship and the three poverty measures. It could also mean that, as

expected, NYC's cost of living is so high that paying rent is making respondents struggle to afford enough to eat. Even so, the difference between poor and nonpoor respondents under the OPM is almost always larger than the same difference for both adjusted and nonadjusted SPM and CPM poor and nonpoor respondents. Similar to Table 2a above, this result suggests that the OPM is more effective than the SPM and CPM at identifying those who face hardship as it illustrates that a much higher percentage of respondents who suffer any hardship are OPM rather than SPM or CPM poor.

The table also shows that the difference in hardships between those classified as OPM poor and nonpoor is almost always higher than those classified as CPM poor and nonpoor. The exceptions to this are whether the respondent had enough money for rent or mortgage, did not pay their utility bill, had their utility cut off, or needed medical care but could not afford it. These results, with the exception of hardships reported in wave 4, suggest that the OPM is doing a better job than the adjusted and nonadjusted CPM at describing hardships.

Table 3b displays the same data as Table 3a but compares hardship according to the OPM and the adjusted SPM and CPM. The effect of modifying the supplemental and consumption poverty measures to equalize all poverty rates to 21.8% can be seen in the increased differences for SPM-78 and decreased differences for CPM-169. However, the OPM continues to look like the overall better poverty measure. While more respondents who were OPM poor experienced various indicators of hardship in waves 1, 5, and 8 in Table 3a, respondents who were OPM poor experienced more such hardships in all waves, after adjusting the SPM and CPM in Table 3b. In addition, the OPM appears better at detecting nearly all kinds of hardship, if one looks at the overall level of hardships suffered, with some exceptions. If one were to look at the difference between poor and nonpoor for each poverty measure, then a few such exceptions are not having enough food, experiencing a food shortage, and suffering food anxiety in wave 4 of Table 3b. In these cases, it appears that CPM-169 is a better measure because there is a greater difference between the CPM-169 poor and nonpoor and either the OPM or SPM-78 poor and nonpoor.

Using data from Table 3a, in total the OPM poor experience the most hardships according to 32 of 35 hardship measures. The unadjusted CPM poor experience the most hardships according to 2 of 35 indicators each, and the unadjusted SPM poor experience the most hardships according to just 1 of 35 indicators. Table 3b, meanwhile, shows that the OPM poor experience the most hardships in 34 of 35 indicators. The SPM-78 poor do not suffer the highest

percentage of hardships according to any indicators, and the CPM-169 poor suffer the highest percentage of hardships in only 1 of 35 indicators.

In terms of differences between poor and nonpoor respondents and their experiences of hardship in Table 3a, the OPM differences are greatest in 22 of 35 measures. The unadjusted SPM differences are largest in only 1 of 35 measures, but the adjusted CPM differences are largest in 12 of 35 measures. In Table 3b, the OPM poor suffer the highest difference in hardships between poor and nonpoor respondents in 28 of 35 indicators. The difference is highest for SPM-78 poor and nonpoor respondents in 2 of 35 indicators and is highest for CPM-169 poor and nonpoor respondents in 5 of 35 indicators. The CPM appears to be a more effective indicator before its adjustment and is relatively more effective in wave 4. This is likely due to the key expenditure data that were used in constructing my CPM being available only in wave 4. Still, this shows that the answer to the question of whether a better poverty measure captures a higher percentage of respondents who suffer a given indicator of hardship, or if it instead captures a higher difference between poor and nonpoor respondents, is not the same. To call the OPM the objectively best measure of the three is to leave out the adjusted CPM, which contained the higher difference between poor and nonpoor respondents in 12 of 35 cases.

Table 3a

**Experience of Material Hardship Among Poor and Nonpoor According to Unadjusted Poverty Measures at Wave 4** (percent, weighted, Diff = difference between poor and nonpoor)

Hardship	OPM		SPM		CPM	
	Poor	Diff	Poor	Diff	Poor	Diff
<b>Wave 0 (baseline)n=2,286</b>						
Not enough food	22.1	12.8	16.1	5.6	23.3	11.8
Food anxiety	57.3	33.7	40.1	12.8	55.1	29.3
Food shortage	50.1	29.8	36.7	13.6	45.9	26.0
No \$ for rent or mortgage	28.6	13.3	22.7	6.3	23.2	17.5
Moved in with others	7.7	5.5	6.6	4.4	1.7	3.4
Stayed in shelter	4.2	3.3	2.9	0.7	1.1	2.5
Didn't pay full utility bill	43.9	22.5	34.1	10.9	34.0	25.7
Utility cut off	24.6	15.4	18.6	8.4	16.8	12.2
Needed med, no \$	24.8	8.8	23.9	8.2	22.4	18.1
Ran out \$	77.7	29.2	67.3	17.2	65.0	54.1
<b>Wave 4 (1 yr.)n= 1,370</b>						
Not enough food	24.0	17.0	16.5	8.0	21.8	10.4
Food anxiety	61.3	9.5	48.4	5.2	61.6	32.7
Food shortage	56.4	5.9	42.9	6.1	49.0	29.2
No \$ for rent or mortgage	25.7	4.1	22.1	1.9	19.5	18.2
Moved in with others	9.2	16.4	9.0	13.0	11.9	4.1
Stayed in shelter	5.5	11.7	3.7	10.6	4.2	2.2
Didn't pay full utility bill	37.8	12.4	34.4	11.0	31.3	25.0
Utility cut off	21.0	31.3	19.6	15.7	16.4	11.4
Needed med, no \$	26.8	12.4	25.2	11.0	8.2	18.1
Ran out \$	78.7	31.3	65.7	15.7	78.8	53.3
<b>Wave 5 (1yr. 3m.)n=1,340</b>						
Food	56.2	29.9	46.5	18.9	46.7	15.1
Shelter	2.9	2.0	1.9	0.8	0.8	-.5
Utilities	17.9	11.3	13.5	6.1	13.6	4.8
Health	17.0	6.2	17.8	7.8	6.7	-5.3
Ran out of \$	69.9	17.2	59.2	14.5	69.4	22.5
<b>Wave 8 (2yr.)n=1,290</b>						
Not enough food	32.5	27.3	19.8	12.5	27.1	17.5
Food anxiety	61.4	33.3	49.4	20.1	53.0	19.1
Food shortage	56.8	33.9	42.0	16.8	48.9	20.1
No \$ for rent or mortgage	25.8	12.8	19.4	5.2	26.4	11.3
Moved in with others	6.0	3.0	4.7	1.5	3.2	-0.4
Stayed in shelter	2.2	1.6	1.6	1.0	0.6	-0.3
Didn't pay full utility bill	35.1	15.0	30.0	8.9	42.8	20.1
Utility cut off	17.2	8.2	16.3	8.0	8.5	-2.1
Needed med, no \$	28.2	12.1	23.0	6.1	24.1	5.6
Ran out \$	73.3	27.8	62.5	15.7	63.7	13.0

Table 3b

**Experience of Material Hardship Among Poor and Non-Poor According to Adjusted Poverty Measures at Wave 4** (percent, weighted, Diff = difference between poor and non-poor)

Hardship	OPM		SPM-78		CPM-169	
	Poor	Diff	Poor	Diff	Poor	Diff
<b>Wave 0 (baseline)n=2,286</b>						
Not enough food	22.1	12.8	17.1	6.5	21.0	10.9
Food anxiety	57.3	33.7	41.2	13.4	49.8	24.3
Food shortage	50.1	29.8	37.0	13.1	44.5	22.2
No \$ for rent or mortgage	28.6	13.3	22.8	6.0	26.4	10.9
Moved in with others	7.7	5.5	6.2	3.6	4.1	1.0
Stayed in shelter	4.2	3.3	2.7	0.4	2.8	0.5
Didn't pay full utility bill	43.9	22.5	34.5	10.7	32.5	8.1
Utility cut off	24.6	15.4	19.6	9.1	15.5	3.9
Needed med, no \$	24.8	8.8	25.8	10.0	17.7	-0.8
Ran out \$	77.7	29.2	68.2	17.2	71.4	21.2
<b>Wave 4 (1 yr.)n= 1,370</b>						
Not enough food	24.0	17.0	15.7	6.4	21.7	20.9
Food anxiety	61.3	9.5	50.8	21.5	54.5	25.8
Food shortage	56.4	5.9	45.5	19.7	47.5	22.1
No \$ for rent or mortgage	25.7	4.1	23.8	7.0	27.9	12.3
Moved in with others	9.2	16.4	8.7	5.3	6.8	2.9
Stayed in shelter	5.5	11.7	2.9	0.8	2.5	0.3
Didn't pay full utility bill	37.8	12.4	34.0	11.6	32.7	9.4
Utility cut off	21.0	31.3	21.6	12.5	18.8	9.1
Needed med, no \$	26.8	12.4	25.5	8.7	15.9	-2.1
Ran out \$	78.7	31.3	66.3	15.4	73.2	23.7
<b>Wave 5 (1yr. 3m.)n=1,340</b>						
Food	56.2	29.9	48.7	20.9	45.6	16.9
Shelter	2.9	2.0	1.8	0.7	2.5	1.6
Utilities	17.9	11.3	14.5	7.0	13.3	5.5
Health	17.0	6.2	18.5	8.7	9.3	-3.1
Ran out of \$	69.9	17.2	59.6	14.7	62.5	18.4
<b>Wave 8 (2yr.)n=1,290</b>						
Not enough food	32.5	27.3	21.4	16.3	17.6	9.0
Food anxiety	61.4	33.3	53.3	23.7	49.7	19.6
Food shortage	56.8	33.9	44.3	18.6	47.4	22.5
No \$ for rent or mortgage	25.8	12.8	21.5	7.6	18.9	4.0
Moved in with others	6.0	3.0	4.7	1.4	4.2	0.7
Stayed in shelter	2.2	1.6	1.9	1.3	1.8	1.1
Didn't pay full utility bill	35.1	15.0	29.0	6.9	28.1	5.5
Utility cut off	17.2	8.2	15.9	6.8	8.7	-2.3
Needed med, no \$	28.2	12.1	25.3	8.6	14.3	-5.8
Ran out \$	73.3	27.8	63.2	15.4	65.3	17.8

## Results

### Demographics

I tabulated and presented demographic information in Table 4. It shows the percentage of poor among the three poverty measures in each reported race and education category. It also shows the average age, gender, family size, and number of children of OPM and adjusted SPM and CPM poor. Among those available I specifically looked at white, Hispanic, and non-Hispanic black respondents. About 42% of respondents who were OPM poor are Hispanic, while about 39% and 41% of respondents who were adjusted SPM and CPM poor are Hispanic. About 34% of respondents who are reported as OPM poor are non-Hispanic black, and 26% and 28% of adjusted SPM and CPM poor respondents are non-Hispanic black as well. As expected, the lowest percentages of respondents who were poor according to any race category are white. 11% of OPM poor respondents are white, while 17% and 20% of adjusted SPM and CPM poor respondents are white.

A language or cultural barrier may explain the high percentage of Hispanic respondents who are reported as CPM-169 poor, as this could lead to difficulties around securing public benefits. Immigrating to the United States and being unaware of public benefits could also play a role in this high percentage as well. A lower percentage of respondents who are OPM poor and white are also adjusted SPM or CPM poor. White poor respondents may have a higher rate of supplemental poverty, because they may be older and have a larger medical out-of-pocket subtraction. Indeed, after controlling for white respondents older than age fifty, the SPM-78 rate fell only to a mere 10.5%. Further explaining these differences would be an interesting area for future research.

Table 4

**Demographic Characteristics of Respondents for Official and Adjusted Supplemental and Consumption Poverty Measures** (with wave 4 weights and difference reported)

	OPM		SPM-78		CPM-169	
	Poor	Diff	Poor	Diff	Poor	Diff
Age	41.1	+6.2	38.2	+9.8	47.8	-2.0
Gender (M)	43.7	+1.1	47.7	-4.0	44.5	+6
Family Size	3.0	-.2	3.3	-.6	2.9	-.1
# of children	.6	0	.6	0	.7	-.2
# of rooms	2.2	+.2	2.5	-.2	2.3	+.1
Race						
Hispanic	42.2	+57.8	39.3	+60.7	41.6	+58.4
non-Hispanic Black	34.4	+65.6	26.4	+73.6	28.6	+71.4
White	11.8	+88.2	17.9	+82.1	20.5	+79.5
Education (%)						
Less than high school	31.2	-20	23.8	-10.5	23.4	-10
High School Diploma or GED	30.1	-11.1	24.0	-3.3	31.1	-12.9
Some college or 2 yr. degree	26.8	-1.5	29.8	-5.3	27.6	-2.1
Vocational training	1.4	0	1.2	+.2	0.5	+1.2
Bachelor's degree	6.5	+15.3	12.1	+8.1	11.9	+8.5

**Education**

It was found that the percentages of poor among the three poverty measures varied widely when education was taken into account. The highest percentage of respondents who were OPM poor had educations that ended before completion of high school, for example. Meanwhile, 12% respondents who were SPM-78 poor were bachelor's degree holders, compared to the CPM-169's 11.9% and the OPM's 6.5%.

**Gender**

Respondents who reported their gender as female also experienced consistently higher rates of poverty across the three measures. 56%, 52%, and 55% of respondents who were found to be OPM, SPM-78, and CPM-169 poor were female. This could be representative of the pay



gap, which is the finding that women earn about 79 cents for every dollar men earn at work (DOL 2017).

## **Regressions**

My analysis included regressing the number of hardships on the OPM and adjusted SPM and CPM, with the dependent variable as the number of hardships. Separate models were estimated for each poverty indicator. I created indicator variables for poverty status under each poverty measure, and these variables are included in the models. I did this to see which poverty measure was more related to the number of hardships suffered by respondents. The models were estimated both with and without controls for race, education, age, and gender. Also counter to my expectations at the beginning of this study, the OPM was found to be more highly related when not controlled for demographic variables. Regressing the number of hardships suffered in wave 4 on the uncontrolled OPM, SPM-78, and CPM-169 variables returned regression coefficients of 1.8, 1.1, and 1.2, respectively, and can be seen in Table 5. Since the OPM 95% confidence interval does not overlap either the SPM-78 or CPM-169 confidence intervals, this shows that difference between the number of hardships associated with the OPM and those of the CPM-169 or SPM-78 are statistically significant. This shows that, in this case, the OPM is recording a higher amount of hardship suffered than the adjusted SPM or CPM. However, differing results were found after controlling for several demographic variables, as reported in the table below. These variables were included to show whether demographics played a role in suffering hardships, and whether certain respondents were more prone to certain indicators of hardship than others based on these demographic variables. Even though the confidence interval for the OPM ever so slightly intersects the SPM-78 and CPM-169 confidence intervals, it is still impossible to conclude that its regression coefficient is statistically different from the others, though it remains larger by 0.5 hardships.

Table 5

**Regression Coefficients and 95% Confidence Intervals of the Number of Hardships, Reported Uncontrolled and Controlled for Race, Education, Age, and Gender (weighted)**

	OPM	95% C.I.	SPM-78	95% C.I.	CPM-169	95% C.I.
No control	1.8	1.5 – 2.1	1.1	.8 – 1.4	1.2	.9 – 1.5
With controls	1.2	.9 – 1.5	.7	.4 – 1.0	.7	.4 - 1.0

Notes: Controls used are: race – whether the respondent is white, Hispanic, non-Hispanic black; education – whether the respondent did or did not complete high school; age – both linear and quadratic respondent age; gender – whether the respondent was male.

**Number of Hardships**

I also created a subsample that included all observations with nonmissing data to analyze the number of hardships suffered by respondents classified as falling under any of the three poverty measures. I compared the wave 4 OPM and the two adjusted poverty measures, the income-to-needs ratio adjusted SPM-78, and constructed CPM-169. A tabulation of the number of hardships suffered by respondents in this subsample is displayed below in Table 6. This is an especially powerful indicator of each poverty measure’s performance; generally, a poverty measure can be interpreted as more effective than others if it categorizes individuals as suffering more hardships. Interestingly, the highest percentage of respondents classified as SPM-78 poor suffer no hardship. Consistently higher percentages of those classified as OPM poor suffer greater total numbers of hardships. The CPM-169 appears to be a middle ground between these measures.

Table 6

**Number of Assorted Hardships Suffered by OPM, SPM-78, and CPM-169 Poor in Wave 4**  
(percent, weighted)

Number of Hardships	OPM poor (n=288)	SPM-78 poor (n=238)	CPM-169 poor (n=278)
0	14.82	28.08	20.40
1	11.28	10.12	11.15
2	8.60	6.25	14.73
3	16.67	13.98	12.13
4	16.85	13.81	15.03
5	9.72	10.15	10.68
6	7.54	5.16	6.26
7	7.81	6.41	5.50
8 or more	6.6	6.0	4.1

Note: the weighted percent poor according to each measure is 21.8%

### **Discussion**

In general, it appears that the OPM may be more effective than the SPM or CPM at capturing hardship in NYC. This finding ran counter to my own expectations given the OPM's limitations. Since my study was based on data made available by the Poverty Tracker study, it could be that my results are due to something unique to NYC such as its high cost of living relative to the rest of the country.

Readers should keep in mind that, while the responses are weighted to be representative of the New York City population, attrition may have affected the comparability between baseline and follow up waves. While great care was taken to account for missing responses, it cannot be ignored that the accuracy of this study's results may have suffered.

Also, while the SPM and CPM were adjusted to reflect the percentage of weighted OPM poor, which was about 21.8%, it should not be ignored that the raw percentage of SPM poor was 27.1% and CPM poor was only 5.5%. There are a few possible explanations for the relatively low rate of consumption poverty. The CPM takes in-kind transfers into account in its measure of expenditures, but so does the SPM. The SPM does not factor wealth, borrowing, or other sources of cash, but the CPM does do this. The SPM considers geographical differences in its thresholds,

while the CPM that I constructed did not. Lastly, the CPM captures benefits that respondents to the Current Population Survey underreport (Meyer, Mittag 2015). This issue of underreporting is relevant for the data used in this study because if a poverty indicator were to pick up this underreported income, then that indicator might be more accurate. Households may be disincentivized from accurate reporting of in-kind transfers and benefits since this may jeopardize their eligibility for such programs. Individuals could also fear the stigma associated with being identified as dependent on welfare programs.

### **Policy Implications**

Tables 2a, 2b, 3a, and 3b illustrate the propensity for the disadvantaged to suffer food hardship. While my data do not conclusively show which poverty measure is more effective, they do show the prevalence of food hardship. If indeed it is the case that paying rent is straining respondents' abilities to eat, then expanding either non-market housing or access to food or food subsidies could alleviate this area of concern. Since nearly half of all rentals in NYC are non-market, however, this may be a nonviable option. On the other hand, half of all working-age New York City and State residents are unable to afford enough to eat live in households that are employed (Hunger Report 2016). It will be interesting to see how New York State's currently rising minimum wage will impact food hardship on NYC's poorest residents (NYS DOL).

Food hardship can also be addressed by expanding access to the Supplemental Nutrition Assistance Program (SNAP), which the Congressional Budget Office found has one of the largest "bangs-for-the-buck" among programs and policies for stimulating economic growth in a weak economy (CBPP 2018). While it is arguable whether today's economy is weak, it is clear that such an effective program would stand to better alleviate food hardship if NYC's high cost of living, for example, were taken into account in its eligibility thresholds.

## Appendix

*Table Za*

**Total Number of Positive Responses to Hardship-Indicating Survey Questions by Respondents, and Number of Respondents Reporting Any Hardship**

Wave	Sum of Hardships	Any Hardship
Baseline	2,257	1,437
1 (3m.)	1,360	810
2 (6m.)	1,329	795
3 (9m.)	1,370	792
4 (1 yr.)	1,370	883
5 (1 yr. 3m.)	1,340	748
6 (1 yr. 6m.)	1,303	716
7 (1yr. 9m.)	1,299	699
8 (2yr.)	1,217	757

*Table Zb*

**Official and Supplemental Poverty Rates per wave with contemporaneous weights (percent)**

Wave	Official Poverty Rate	Supplemental Poverty Rate
Wave 4 (1 yr.)	21.8	27.1
Wave 8 (2 yr.)	N/A	29.5

N/A is due to no “opmpov” (official poverty indicator) variable existing in wave 8

*Table Zc*

**Variable and Response Definitions**

Variable Name	Definition and Response
Food	How often would you say you worried whether your food would run out before you got money to buy more; Often, Sometimes, Never
Shelter	Did you stay at a shelter, abandoned building, automobile, or other place not meant for regular housing; Yes, No
Utilities	Was your phone, gas, or electricity ever cut off because there wasn't enough money to pay the bills; Yes, No
Health	Was there a time when you or anyone else in your household needed to see a doctor or go to the hospital but couldn't go

	because of the cost; Yes, No
Ran out of \$	How often did you run out of money between pay checks or before the end of the month; Often, Sometimes, Never
Not enough food	Which describes the food eaten in your household; Enough of the food we want, Enough but not the kinds we always want to eat, Sometimes not enough, Often not enough, No Answer, Don't know, Refused
Food anxiety	Have you worried that your food would run out before you got money to buy more; Often, Sometimes, Never, No answer, Don't know
Food shortage	Has your food run out before you got money to buy more; Often, Sometimes, Never, No Answer, Don't Know, Refused
No \$ for rent/mortgage	Did you not pay full amount of rent/mortgage; Yes, no, Did not have rent/mortgage, No answer, Refused
Moved in with Others	Did you move in with others for financial reasons; Yes, no, No answer, Refused to answer,
Stayed in Shelter	Did you stay in a shelter/car/other place not meant for regular housing; Yes, no, No answer, Refused to answer
Didn't pay full utility bill	Did you not pay the full amount of utility bill because of no money; Yes, no,

	Do not have phone/utility bill, No Answer, Don't know, Refused
Utility cut off	Was your utility service ever cut off because there wasn't enough money; Yes, no, Do not have phone/utility bill, Cable cut off, No answer, Refused
Needed Med, no \$	Did you need medical care but could not afford it; Yes, no, No answer, Don't know
Ran out \$	How often did you run out of money between pay checks or before the end of the month; Often, Sometimes, Never, No Answer, Don't know

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