The CEO Poverty Measure, 2005 - 2011

An Annual Report by the
NYC Center for Economic Opportunity

April 2013

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Economic Opportunity**

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PREFACE AND ACKNOWLEDGMENTS

In 2006, New York City Mayor Michael R. Bloomberg convened a Commission on Economic Opportunity, directing it to craft innovative approaches to reducing poverty in the City. The Commission members took a broad view of their mandate. What, they asked, are we trying to reduce? How do we know if we are succeeding? To answer questions like these, policymakers need broad social indicators. The Commissioners soon learned what social scientists have known for decades: the nation's fifty-year-old measure of poverty no longer provides useful information. In the 1960s, the poverty measure was a focal point for the nation's growing concern about poverty. Over the decades, society evolved and policies have shifted, but the official poverty measure remains frozen in time. As a result, it has steadily lost credibility and usefulness. The Commissioners concluded that, along with new programs, the City needed to develop a new measure of poverty. Mayor Bloomberg embraced the Commission's recommendation and the development of an improved measure of poverty became a project of the organization he created to implement the Commission's recommendations, the New York City Center for Economic Opportunity (CEO).

There has been no shortage of proposals for improving the way America counts its poor. The most influential of these was developed, at the request of Congress, by the National Academy of Sciences (NAS). Although the NAS's proposal was issued in 1995, neither the Federal nor any other branch of government had adopted this approach until 2008 when CEO released its first working paper on poverty in New York City. This study – our fifth – continues our practice of issuing annual updates of our measure.

We have not been alone in this work. In recent years, CEO has been joined by other state and local poverty measurement initiatives. To date, NAS-style, state-level poverty measures have been developed for New York, Connecticut, Georgia, Illinois, Massachusetts, Minnesota, and Wisconsin, along with the city (and metro area) of Philadelphia. All these projects have been enormously helpful to our work. We have benefited from the wisdom of George Falco and Jihyun Shin at the New York State Office of Temporary and Disability Assistance; Mark Stern of the University of Pennsylvania; Linda Giannarelli, Laura Wheaton, and Sheila Zedlewski at the Urban Institute; and Julia Isaacs and Timothy Smeeding at the University of Wisconsin's Institute for Research on Poverty.

In 2011, the U.S. Bureau of the Census began releasing annual reports on poverty in the United States using a new Supplemental Poverty Measure, which is also based on the NAS recommendations. To enhance the commensurability of our work with the new Federal measure, CEO revised some elements of our approach. Our colleagues at the Census Bureau, David Johnson, Kathleen Short, and Trudi Renwick, as well as Thesia Garner at the Bureau of Labor Statistics – friends of the CEO project since its inception – have been particularly helpful in this work.

From the earliest stages of our effort, we have benefited from opportunities to present our work to other scholars and policy practitioners. The Brookings Institution Center on Children and Families hosted a number of meetings, some at CEO's request, where many of the nation's leading poverty experts not only shared their work, but offered us advice for improving our measure. We need to recognize the generosity of Ron Haskins, the Center's Co-Director, as well as the wisdom of those who have attended these events. CEO has also presented our work at a number of conferences, including annual meetings of the Association for Public Policy and Management, the National Association for Welfare Research and Statistics, the American Statistical Association, the International Association for Research in Income and Wealth, and the Administration for Children and Families' Welfare Research and Evaluation Conference. Thanks to a grant from the RIDGE Center for National Food and Nutrition Assistance Research at the University of Wisconsin's Institute for Research on Poverty, we were able to present our work on valuing Food Stamp benefits to experts in this field. In the course of all this we have amassed a considerable debt. In addition to those mentioned above, we wish to acknowledge Jessica Banthin, Richard Bavier, David Betson, Rebecca Blank, Gary Burtless, Constance Citro, Sharon O'Donnell, Irv Garfinkel, Mark Greenberg, Amy O'Hara, Nathan Hutto, John Iceland, Dottie Rosenbaum, Isabelle Sawhill, Karl Scholz, Arloc Sherman, Sharon Stern, Jane Waldfogel, and James Ziliak.

Closer to home, Vicky Virgin, demographic analyst at the Population Division of New York City Department of City Planning, has made important contributions throughout the project. She deserves special thanks, as does Dr. Joseph Salvo, the Population Division's Director. Many other colleagues in City government have shared their expertise about public policy, the City's administration of benefit programs, and agency-level data. Sondra Sanchez, Director of HEAP and Tracey Thorne, Director of Program and Policy Analysis, Office

EXECUTIVE SUMMARY

This year's Center for Economic Opportunity (CEO) report on poverty in New York City reflects a turning point. Our two prior annual reports documented the growing importance of the social safety net at a time when the job market was contracting and earned income was in decline. For many low-income families, the distance between their earnings and the poverty line widened. At the same time the safety net expanded, filling some, but not all, of the gap. As a consequence, from 2008 to 2010, the City poverty rate rose.

The 2011 data we present in this report coincide with a shift in the economic environment. After a two-year fall, the proportion of working age New Yorkers holding a job rose. Although annual earnings did not rise for families vulnerable to poverty, their recession-related decline was arrested. The stabilization in earnings along with expanded tax initiatives (especially the payroll tax cut that took effect in 2011) and a continuing increase in enrollment in the Food Stamp program pushed our broad measure of family resources higher. The increase was large enough to offset the year-to-year rise in the CEO poverty threshold. As a result, the 2011 CEO poverty rate, 21.3 percent, is statistically unchanged from the prior year, when it stood at 20.9 percent.

Over the 2005 to 2011 period covered in this report, changes in the CEO poverty rate reflect, to a large degree, trends in employment and earned income in the City. The poverty rate fell from 2005 to 2008, when the local economy was expanding. After the Great Recession took hold of the City economy in 2008, the poverty rate rose. As Figure One illustrates, the trend in the CEO poverty rate is paralleled by the trend in the official poverty rate.

This on-the-surface similarity masks many important differences between the CEO and official poverty measures. The first part of the Executive Summary reviews them. We then turn to the report's key findings.

The Official Poverty Measure

The official poverty measure was developed in the early 1960s. Its threshold was based on the cost of the U.S. Department of Agriculture's Economy Food Plan, a diet designed for "temporary or emergency use when funds are low." Because the survey data available at the time indicated that families typically spent a third of their income on food, the cost of the plan was simply multiplied by three to account for other needs. Since the threshold's 1963 base year, it has been updated annually by the change in the Consumer Price Index.[1]

A half century later, this poverty line has little justification. The threshold does not represent contemporary spending patterns; food now accounts for less than one-seventh of family expenditures, and housing is the largest item in the typical family's budget. The official threshold also ignores differences in the cost of living across the nation, an issue of obvious importance to measuring poverty in New York City. A final shortcoming of the threshold is that it is frozen in time. Since it only rises with the cost of living, it assumes

FIGURE ONE
Official and CEO Poverty Rates, 2005 - 2011
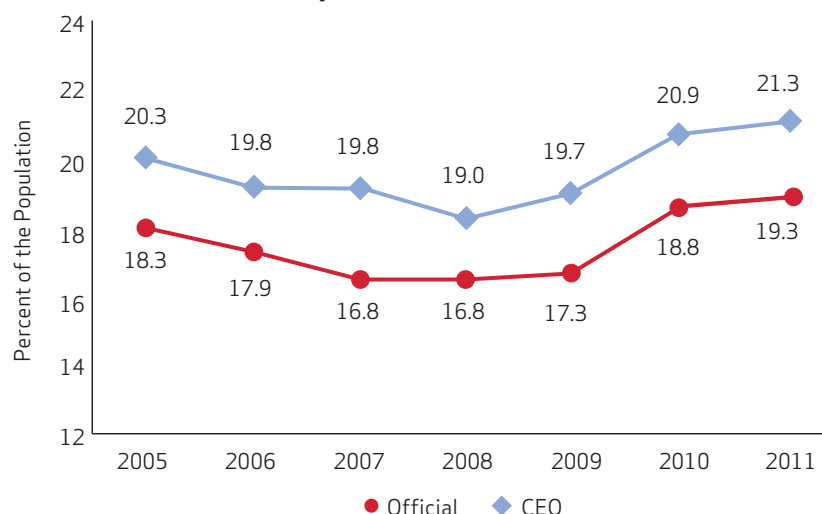
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Official poverty rates are based on the CEO poverty universe and unit of analysis.

1. Fisher, Gordon M. "The Development and History of the Poverty Thresholds." *Social Security Bulletin,* Vol. 55, No. 4. Winter 1992.

that a standard of living that defined poverty in the early 1960s remains appropriate, despite advances in the nation's standard of living since that time.

The official measure's definition of the resources that are compared against the threshold is pre-tax cash. This includes wages, salaries, and earnings from self-employment; income from interest, dividends, and rents; and some of what families receive from public programs, *if* they take the form of cash. Thus, payments from Unemployment Insurance, Social Security, Supplemental Security Income, and public assistance are included in the official resource measure.

Given the data available and the policies in place at the time, this was not an unreasonable definition. But in recent years an increasing share of what government programs do to support low-income families takes the form of tax credits (such as the Earned Income Tax Credit) and in-kind benefits (such as Food Stamps).

Measures of Poverty

Official: The current official poverty measure was developed in the early 1960s. It consists of a set of thresholds that were based on the cost of a minimum diet at that time. A family's pre-tax cash income is compared against the threshold to determine whether its members are poor.

NAS: At the request of Congress, the National Academy of Sciences issued a set of recommendations for an improved poverty measure in 1995. Although the proposal did not become the new official poverty measure, staff at the Census Bureau, Bureau of Labor Statistics, and other researchers created a body of research that was based on the NAS proposal.

SPM: In March 2010 the Obama Administration announced that the Census Bureau, in cooperation with the Bureau of Labor Statistics, would create a Supplemental Poverty Measure based on the NAS recommendations, subsequent research, and a set of guidelines proposed by an Interagency Working Group. The first report on poverty using this measure was issued by the Census Bureau in November 2011.

CEO: The Center for Economic Opportunity released its first report on poverty in New York City in August 2008. CEO's poverty measure is based on the NAS recommendations and the guidelines from the SPM Interagency Working Group.

If policymakers or the public want to know how these programs affect poverty, the official measure cannot provide an answer.

The National Academy of Sciences' Alternative

Dissatisfaction with the official measure prompted Congress to request a study by the National Academy of Sciences (NAS). The NAS's recommendations for an improved measure were issued in 1995.[2] They sparked further research and garnered widespread support among poverty experts.[3] The NAS took a considerably different approach to both the threshold and resource side of the poverty measure. Its poverty threshold reflects the need for clothing, shelter, and utilities as well as food. It is established by selecting a sub-group of families as reference families,[4] calculating their spending on these items, and then choosing a point in the resulting expenditure distribution.[5] A small multiplier is applied to account for miscellaneous expenses such as personal care, household supplies, and non-work-related transportation. The threshold is updated each year by the change in the level of this spending. This connects the threshold to the growth in living standards. In further contrast to the official measure, the NAS proposed that the poverty line be adjusted to reflect geographic differences in housing costs.

On the resource side, the NAS measure is designed to account for the flow of income and in-kind benefits that a family can use to meet the needs represented in the threshold. This creates a much more inclusive measure of income than pre-tax cash. The tax system and the cash-equivalent value of in-kind benefits for food and housing create important additions to family resources. But families also have non-discretionary expenses that reduce the income available to meet their other needs. These include the cost of childcare, commuting to work, and medical care that must be paid for out of pocket. This non-discretionary spending is accounted for as deductions from income.

2. Citro, Constance F. and Robert T. Michael (eds). *Measuring Poverty: A New Approach*. Washington, DC: National Academy Press. 1995.
3. Much of the research inspired by the NAS report is available at: www.census.gov/hhes/ povmeas/methodology/nas/index.html
4. The NAS reference families are those composed of two adults and two children. The threshold for this family is then scaled for families of different sizes and compositions. See Appendix B.
5. The NAS suggested that this point lie between the 30th and 35th percentile. Citro and Michael, p. 106.

CEO's Adoption of the NAS/SPM Method

Like CEO's measure, the Census Bureau's new Supplemental Poverty Measure (SPM) is also shaped by the NAS recommendations along with a set of guidelines provided by an Interagency Technical Working Group in March 2010.[6] The guidelines incorporated work by researchers at the Census Bureau, Bureau of Labor Statistics, and others subsequent to the original NAS report. Many of these recommendations are reflected in our measure.

CEO bases our New York City-specific poverty threshold on the U.S.-wide threshold developed for the SPM. We adjust the national-level threshold to account for the relatively high cost of housing in New York City by applying the ratio of the New York City to the U.S.-wide Fair Market Rent for a two-bedroom apartment to the housing portion of the threshold.[7] In 2011, our poverty line for the two-adult, two-child family comes to $30,949. We refer to this New York City-specific threshold as the CEO poverty threshold. The 2011 official poverty threshold for the corresponding family was $22,811.

Poverty Thresholds

Official: The official threshold was developed in the early 1960s and was based on the cost of a minimum diet at that time. It is updated each year by the change in consumer prices. It is uniform across the United States.

CEO: The CEO poverty threshold is a New York City-specific threshold derived from the U.S.-wide threshold developed for the Federal Supplemental Poverty Measure. The threshold is based on what families spend on basic necessities: food, clothing, shelter, and utilities. It is adjusted to reflect the variation in housing costs across the United States.

Measuring Income

Official Income: The official poverty measure's definition of family resources is pre-tax cash. This includes income from all sources such as earnings, interest, and government transfer payments that take the form of cash. Thus, Social Security benefits are included in this measure, but the value of in-kind benefits such as Food Stamps or tax credits such as the Earned Income Tax Credit are not counted.

CEO Income: Based on the NAS recommendations, CEO income includes all the elements of pre-tax cash plus the effect of income and payroll taxes, and the value of in-kind nutritional and housing assistance. Non-discretionary spending for commuting to work, childcare, and out-of-pocket medical care are accounted for as deductions from income.

Obviously, if this were the only change CEO had made to the poverty measure, it would lead to a poverty rate higher than the official rate. But, as described above, CEO also uses a far different measure of income to compare against the poverty threshold. Although our measure includes subtractions as well as additions to resources, CEO income is higher than pre-tax cash income at the lower rungs of the income ladder. At the 20th percentile, for example, CEO income was $30,195 in 2011. The corresponding figure for pre-tax cash was only $22,944. Thus, if a more complete account of resources had been the only change we had made to the poverty measure, the CEO poverty rate would fall below the official measure. Figure Two illustrates official and CEO incomes, thresholds, and poverty rates for 2011. The effect of the higher CEO threshold (35.7 percent above the official) outweighs the effect of CEO's more complete definition of resources (which is 31.6 percent higher, at the 20th percentile, than the official resource measure), resulting in a higher poverty rate. In 2011, the CEO poverty rate stood at 21.3 percent while the official rate was 19.3 percent, a 2.0 percentage point difference.

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6. *Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure.* March 2010. Available at: www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf
7. Details of the calculation are given in Appendix B.

Official and CEO Thresholds, Incomes, and Poverty Rates, 2011
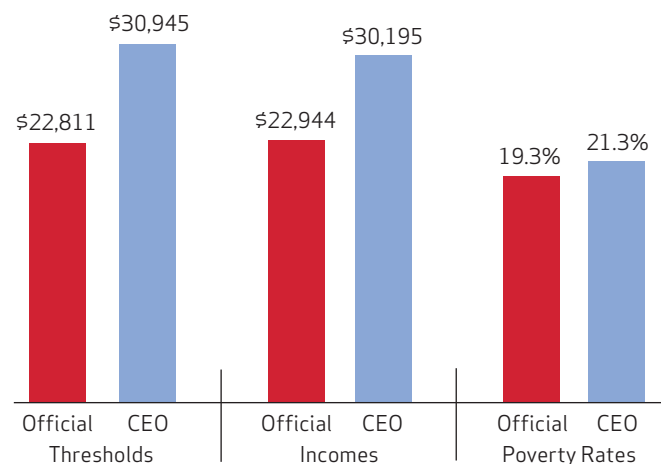
Source: U.S. Bureau of the Census and American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Incomes are measured at the 20th percentile and stated in family size and composition-adjusted dollars. Official poverty rates are based on the CEO poverty universe and unit of analysis.

To measure the resources available to a family to meet the needs represented by the threshold, our poverty measure employs the Public Use Micro Sample from the Census Bureau's American Community Survey (ACS) as its principal data set. The advantages of this survey for local poverty measurement are numerous. The ACS is designed to provide measures of socio-economic conditions on an annual basis in states and larger localities. It offers a robust sample for New York City (roughly 25,000 households) and contains essential information about household composition, family relationships, and cash income from a variety of sources.

But, as noted earlier, the NAS-recommended poverty measure greatly expands the scope of resources that must be measured in order to determine whether a family is poor. Unfortunately, the ACS provides only some of the information needed to estimate these additional resources. CEO has developed a variety of models that estimate the effect of taxation, nutritional and housing assistance, work-related expenses, and medical out-of-pocket expenditures on total family resources and poverty status. We reference the resulting data set as the "American Community Survey Public Use Micro Sample as augmented by CEO" and we refer to our estimate of family resources as "CEO income."

This Year's Report

The focus of this year's CEO working paper is on poverty in New York City since 2008, a period of recession, then lingering weakness, and, most recently, recovery in the economy. From 2008 to 2010, labor market indicators for City residents pointed south. A declining proportion of the working age population was employed. As Figure Three illustrates, the share of New Yorkers 18 through 64 years of age who were holding a job at the time they were surveyed peaked in 2008 at 70.8 percent. That proportion declined to 66.4 percent by 2010. But in 2011, it rose to 67.0 percent.

Employment/Population Ratios, 2005 - 2011
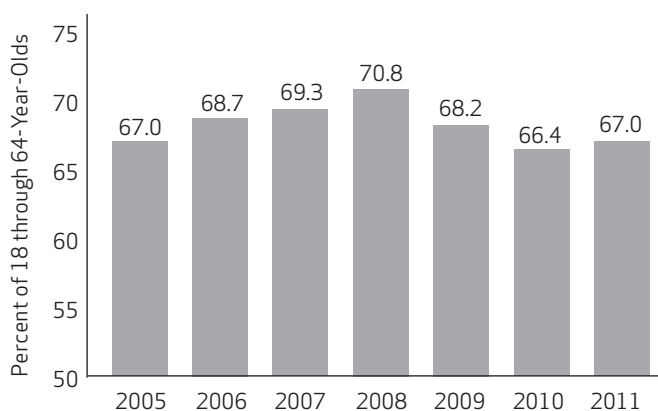
Source: American Community Survey Public Use Micro Sample.

Because poverty status is determined by annual income, employment over the course of a year is a particularly salient labor market indicator. Figure Four shows that the share of the working age population with steady work, defined as 50 or more weeks in the prior 12 months, declined from 59.8 percent in 2008 to 56.3 percent in 2010, while the proportion of the population that had no work at all grew from 23.5 percent in 2008 to 27.3 percent 2010. This indicator stabilized in 2011.

FIGURE FOUR
Weeks Worked in Prior 12 Months, 2008 - 2011
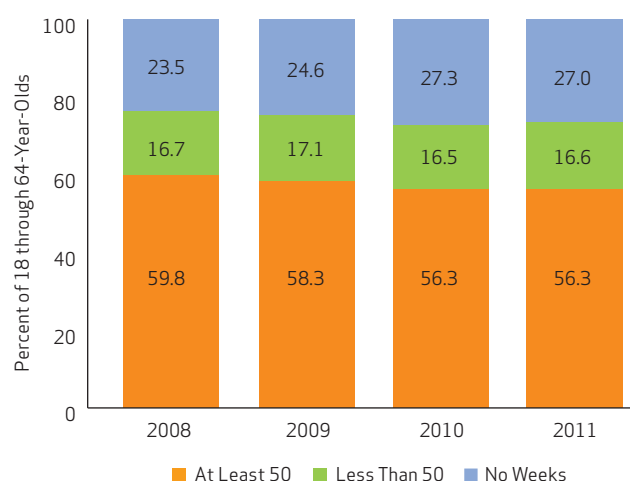
Source: American Community Survey Public Use Micro Sample.

The 2008 to 2010 decline in weeks worked is reflected in measures of earnings. Table One reports per family earnings for those families whose earnings would put them near the CEO poverty threshold (between the 25th and 40th percentile of the earnings distribution). The declines range from 14.6 percent to 11.2 percent from 2008 to 2010. The decline in earnings ends in 2011, also echoing the pattern in weeks worked.

The job market plays an important role in year-to-year changes in the CEO poverty rate. But its effect takes place within the broad scope of our measure of family resources and the context of public policies intended to bolster family incomes. In addition to earnings, low-income families' ability to meet their needs is determined by public benefit programs. Over the last several decades there has been an important shift in the composition of these programs, especially for the non-elderly population. As noted above, a smaller proportion of means-tested assistance takes the form of cash payments, such as public assistance, while a larger proportion is composed of tax credits and in-kind benefits. The trend has been reinforced by the Bush and Obama Administrations' economic stimulus programs. A tax program, the Economic Recovery Rebate, was a key feature of the Bush Administration's response to the onset of the recession. New and expanded tax credit programs and an increase in Food Stamp benefit levels were important elements in President Obama's American Recovery and Rebuilding Act.

The expanding role of tax credits and the Food Stamp program are a focus of the analytical sections of this year's report. In order to identify the impact of the recent policy changes, we compare trends in CEO income and poverty rates against hypothetical estimates, to identify what would have occurred in the absence of the new tax and Food Stamp initiatives.

TABLE ONE
Annual Family-Level Earned Income, 2008 - 2011

	Year				Percentage Change	
Percentile	2008	2009	2010	2011	2008-2010	2010-2011
25	$18,701	$17,945	$16,122	$16,029	-13.8%	-0.6%
30	$25,460	$24,226	$21,741	$21,970	-14.6%	1.1%
35	$31,815	$30,506	$27,818	$27,682	-12.6%	-0.5%
40	$38,218	$36,707	$33,922	$33,301	-11.2%	-1.8%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Earnings are stated in family size and composition-adjusted dollars. They are not adjusted for inflation. Persons in families with no earnings are included.

Key Findings

In the context of a labor market that is recovering from a two-year slump, we find that:

After rising from 19.0 percent in 2008 to 20.9 percent in 2010, the CEO poverty rate stood at 21.3 percent in 2011, statistically unchanged from the prior year. An equivalent[8] official poverty rate followed a similar path, rising from 16.8 percent in 2008 to 18.8 percent in 2010. The official poverty rate in 2011 was 19.3 percent, also statistically unchanged from 2010.

Although the CEO poverty rate exceeds the official rate in each year for which we have data, the CEO methodology finds that a smaller proportion of the City's population is living in extreme poverty – below 50 percent of the poverty threshold – than does the official method (5.6 percent compared to 7.9 percent in 2011). By both measures, extreme poverty rose from 2008 to 2010. The proportion of the population living below 50 percent of the respective thresholds was unchanged from 2010 to 2011. See Figure Five.

The trend in CEO poverty rates by demographic characteristics such as age, family status (i.e., number of parents in the family unit), and borough generally follows the rise in the Citywide poverty rate from 2008 to 2010 and its statistical stability from 2010 to 2011. Comparing 2011 to 2008, we find statistically significant increases in the poverty rate for children under 18 and working age adults (See Figure Six); Non-Hispanic Whites, Asians, and Hispanics (See Figure Seven); and Citizens by Birth and Non-Citizens (See Figure Eight). There are few statistically meaningful changes in poverty rates from 2010 to 2011. An important exception is the decline in the poverty rate for persons living in a single-headed family with children, from 33.4 percent in 2010 to 30.9 percent in 2011. See Figure Nine.

FIGURE FIVE

Percent of the Population in Extreme Poverty, 2008 - 2011
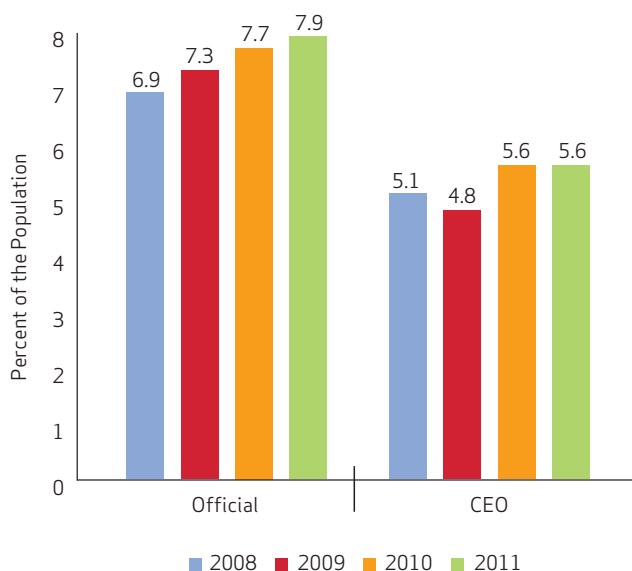
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Official poverty rates are based on the CEO poverty universe and unit of analysis.

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8. To make comparisons more useful, the official poverty rates given in the report are based on the CEO poverty universe and unit of analysis. See Text Box Four in Chapter I for details.

FIGURE SIX
CEO Poverty Rates by Age Group, 2008, 2010, and 2011
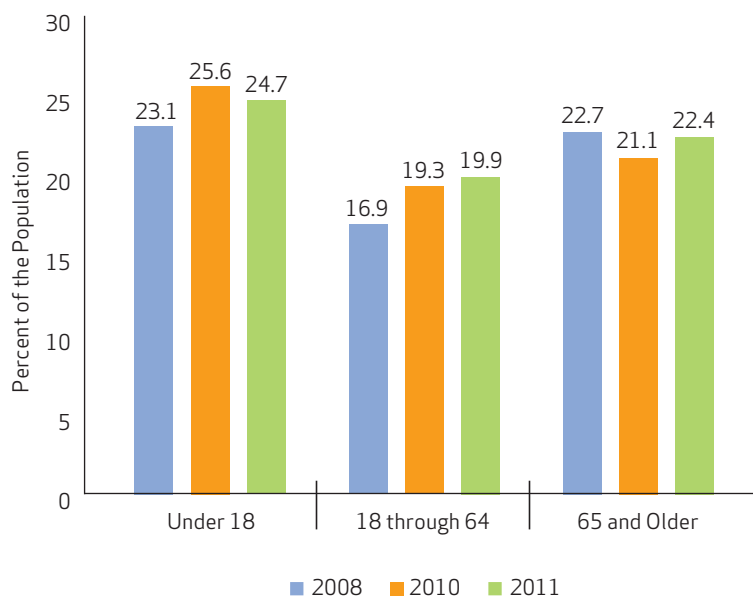
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

FIGURE SEVEN
CEO Poverty Rates by Race/Ethnicity, 2008, 2010, and 2011
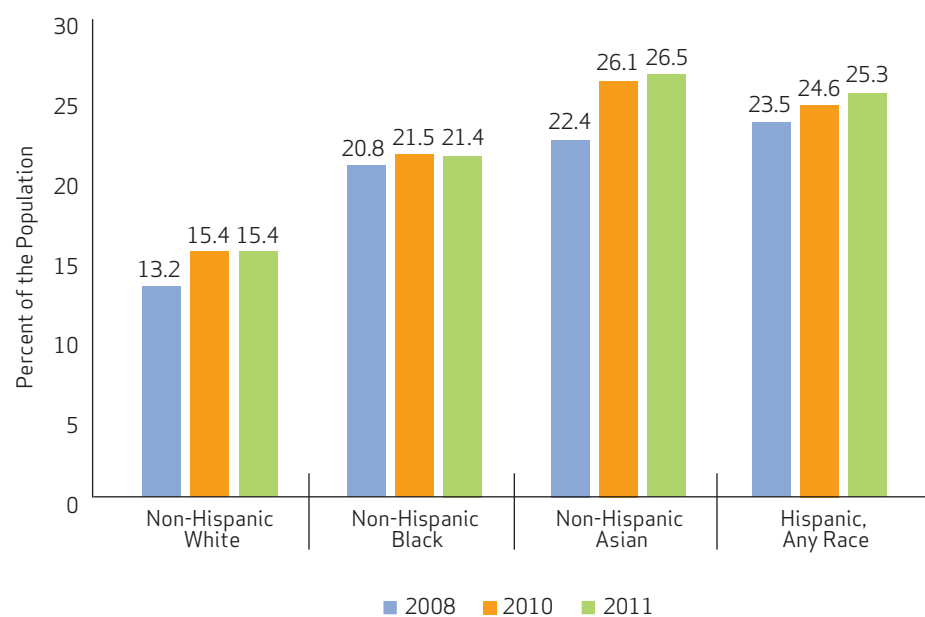
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

FIGURE EIGHT

CEO Poverty Rates by Nativity/Citizenship, 2008, 2010, and 2011
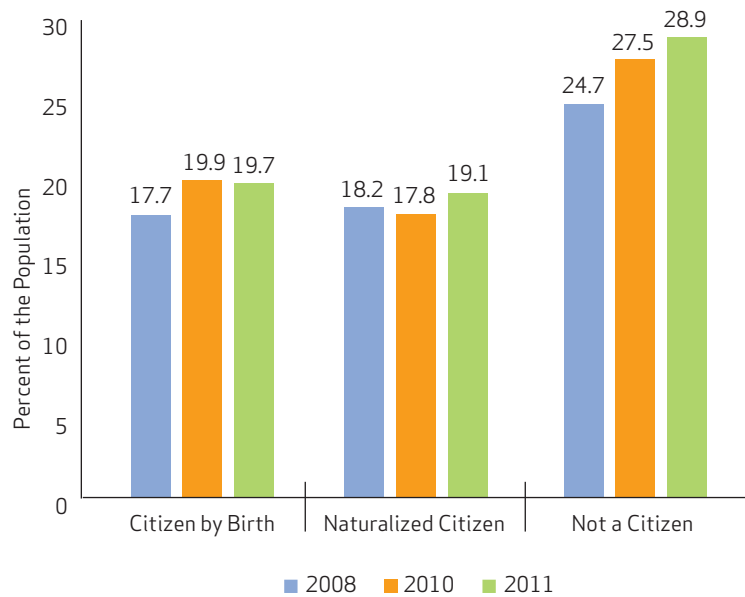
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

FIGURE NINE

CEO Poverty Rates for Families with Children, 2008, 2010, and 2011
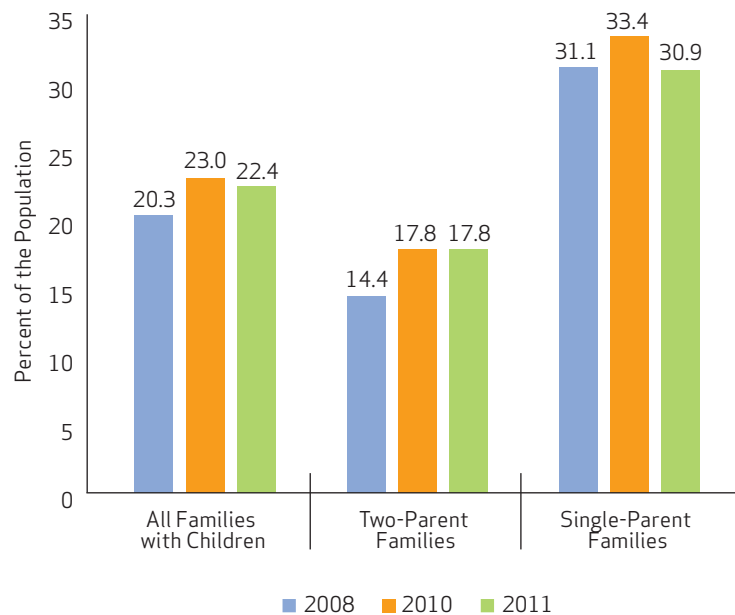
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

From 2008 to 2011, poverty rates increased in three
out of five of the City's boroughs: Brooklyn (by 1.6
percentage points to 23.9 percent), Queens (by 4.8
percentage points to 21.1 percent), and Staten Island (by
3.9 percentage points to 15.3 percent). See Figure Ten.

FIGURE TEN
CEO Poverty Rates by Borough, 2008, 2010, and 2011
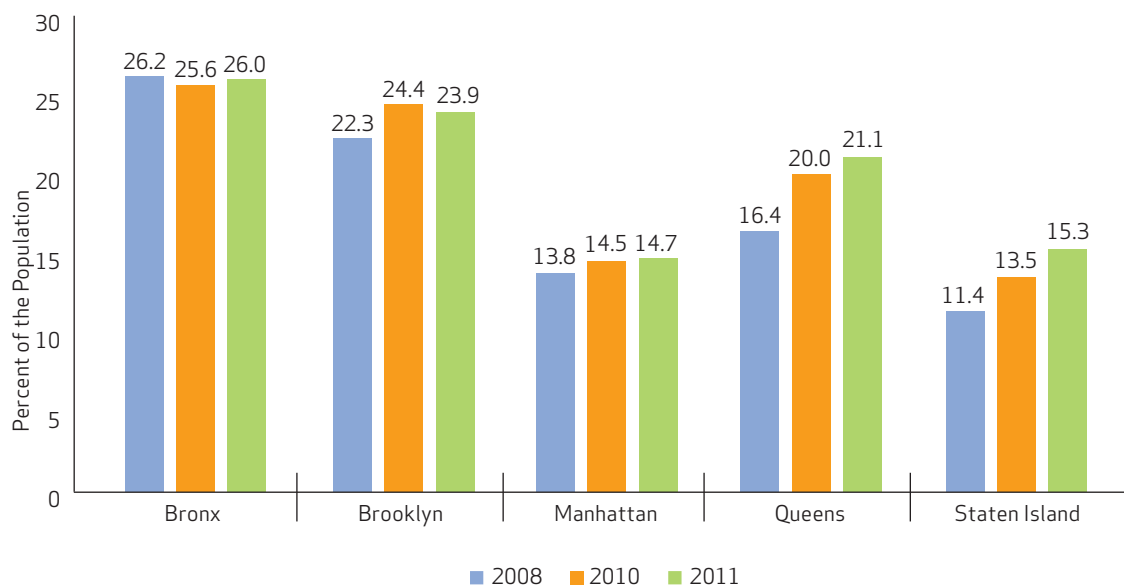
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

The pattern in poverty rates for the United States based
on the new Federal Supplemental Poverty Measure
resembles the CEO pattern for New York City. Across
the entire population, the two NAS-based poverty
measures find a higher incidence of poverty than do
the official measures. In the U.S., the rate in 2011 is
16.1 percent as opposed to 15.1 percent. In New York
City, the two poverty rates were 21.3 percent and 19.3
percent in that year. Because they count the value of
non-cash assistance, however, both the SPM and CEO
measures of poverty among children are lower than child
poverty rates based on the official method: 18.1 percent
compared to 22.3 percent for the nation; 24.7 percent
rather than 28.7 percent for the City. See Figure Eleven.

FIGURE ELEVEN
Comparison of Poverty Rates in the U.S. and NYC, 2011

United States — Official: Total 15.1, Under 18 22.3, 18-64 13.7, 65 and Older 8.7; SPM: Total 16.1, Under 18 18.1, 18-64 15.5, 65 and Older 15.1

New York City — Official: Total 19.3, Under 18 28.7, 18-64 16.5, 65 and Older 17.5; CEO: Total 21.3, Under 18 24.7, 18-64 19.9, 65 and Older 22.4

Legend: Total | Under 18 | 18 - 64 | 65 and Older
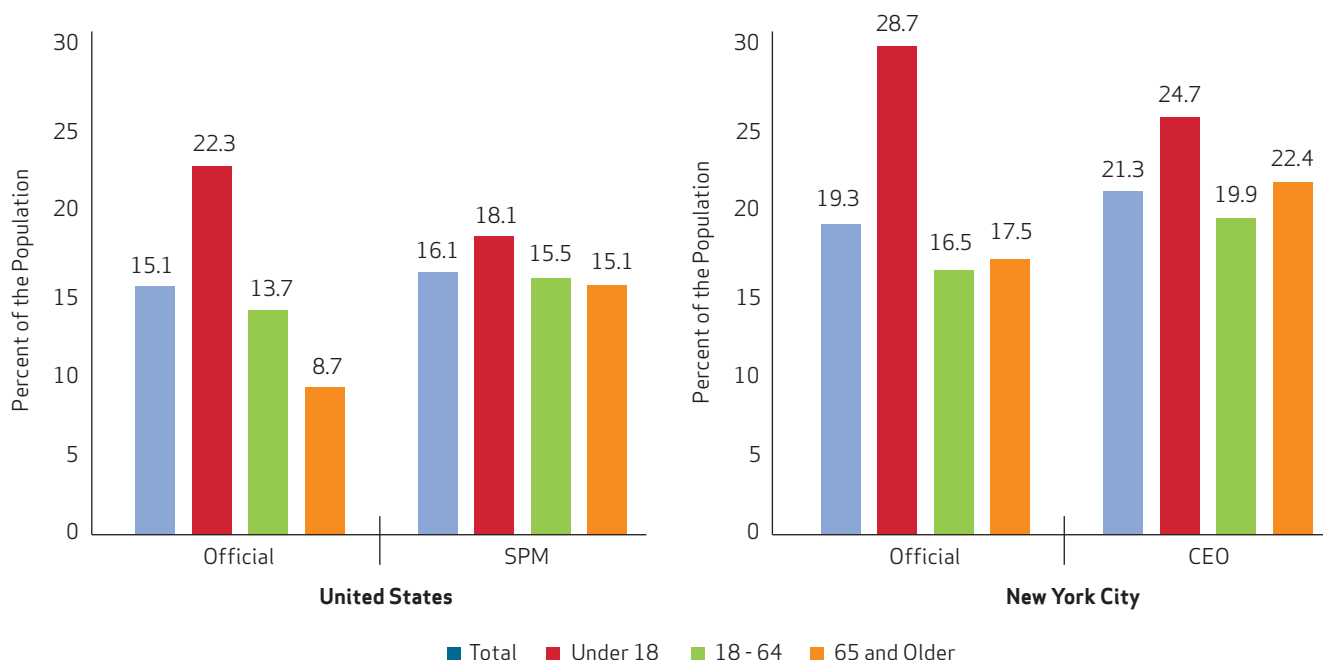
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

The analytical sections of this year's report focus on trends in three family-level measures of income: earnings, pre-tax cash, and CEO income. Comparisons indicate the extent to which the recession-related declines in earned income were offset by cash and non-cash benefit programs. We find that:

In 2010, earned income stood at only 85.4 percent of its 2008 level. Pre-tax cash, the measure of income used in the official poverty measure, equaled 91.9 percent of its 2008 level in that year. By contrast, CEO income did not decline from 2008 to 2010. From 2010 to 2011, both earnings and pre-tax cash were statistically unchanged, while CEO income rose to 102.6 percent of its 2008 level. The dramatically stronger performance of the income measure used to determine the CEO poverty rate compared to the income measure used to determine the official poverty rate is the result of CEO's inclusion of non-cash social safety net programs that are uncounted in the official poverty measure. See Figure Twelve.

FIGURE TWELVE
Comparison of Income Trends, 2008 - 2011
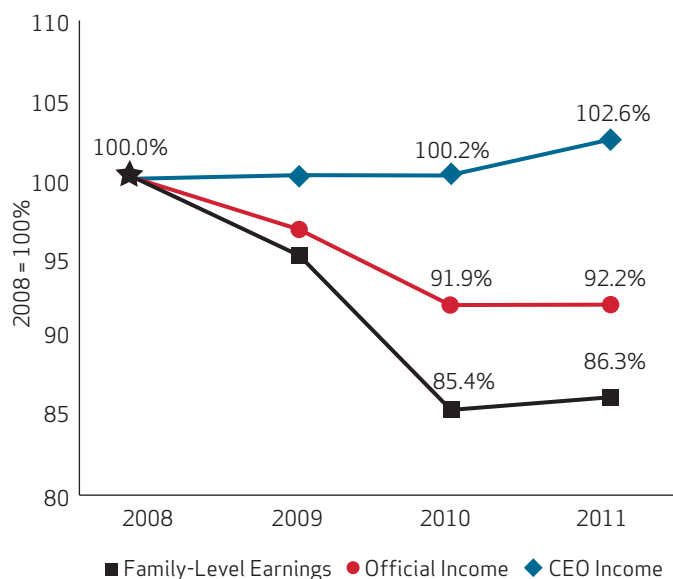
CEO Income: 2008 100.0%, 2009 ~100.2%, 2010 100.2%, 2011 102.6%
Official Income: 2008 100.0%, 2009 ~97%, 2010 91.9%, 2011 92.2%
Family-Level Earnings: 2008 100.0%, 2009 ~95.4%, 2010 85.4%, 2011 86.3%

Legend: Family-Level Earnings | Official Income | CEO Income

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Earnings are measured at the 30th percentile and incomes are measured at the 20th percentile of their respective distributions. Incomes are not inflation-adjusted.

Participation in safety net programs tends to grow as need increases during economic contractions. In addition to this "passive" expansion, policymakers took active steps during the recession to bolster the purchasing power of low-income families by creating new and expanding existing tax credit programs. They also increased benefit levels and fostered participation in the Food Stamp program. We find that these additional steps blunted what would have been a very sharp rise in the CEO poverty rate from 2008 to 2011. We estimate that without these initiatives, the CEO poverty rate would have increased to 23.6 percent in 2011, instead of 21.3 percent. See Figure Thirteen.

Implications for the Future

The 2011 data on employment and income signal a shift in the economic environment. Looking ahead, there is good reason to expect that the 2012 American Community Survey will reveal further gains in jobholding, increasing the likelihood that a leveling off of the poverty rate in 2011 could be followed by a fall in the rate in 2012, all else equal.

But the turning point in the job market is not the only change we need to note. Coinciding with the end of the slump in the job market is the end of the recession-related expansion of the safety net. Food Stamp benefit levels have not increased since they were raised by the 2009 Obama stimulus program. The benefit formula will revert to its pre-stimulus rules in November 2013, creating a reduction in benefits.[9] Some of the economic stimulus-related income tax credit programs expired at the end of 2010. The number of weeks that Unemployment Insurance is available to the long-term jobless was cut in 2012. The reduction in the payroll tax rate expired at the end of 2012.

FIGURE THIRTEEN
Actual and Hypothetical CEO Poverty Rates, 2007 - 2011
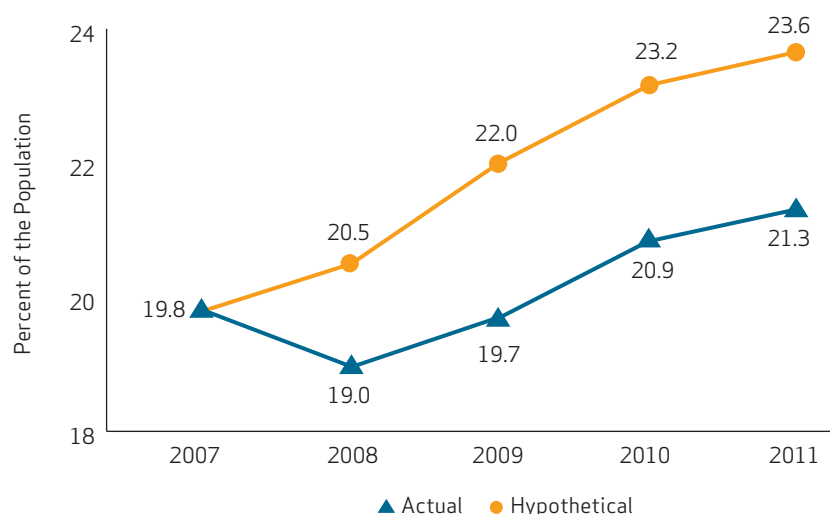
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

9. Dean, Stacey and Dorothy Rosenbaum. *SNAP Benefits Will Be Cut for All Participants in November 2013*. Center on Budget and Policy Priorities. February 8, 2013. Available at: http://www.cbpp.org/files/2-8-13fa.pdf

The sequester – the cuts in Federal government spending that began on March 1, 2013 – also threatens programs important to low-income Americans. Unemployment Insurance benefit levels for the long-term jobless who are receiving Federally-funded benefits could fall by 11 percent.[10] The Center on Budget and Policy Priorities estimates that between 575,000 and 750,000 women and children will be denied WIC benefits by the end of the current Federal fiscal year.[11] Funding for Federal housing programs, the backbone of the means-tested housing assistance so vital to low-income New Yorkers, will also suffer stiff reductions.[12]

In sum, the dynamic that spurred, but also limited, the recent rise in poverty – declining earnings buffered by an expanded safety net – is shifting. In the context of political stalemate in Washington and a policy environment that is focused on reducing the Federal budget deficit, progress in reducing poverty will depend to a large degree on a rising economic tide lifting enough boats. Progress will also rest on the continued efforts by City policymakers to build "on-ramps" to an expanding job market for those groups of New Yorkers that prosperity so often leaves behind.

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10. *The Sequester's Devastating Impact on Families of Unemployed Workers and the Struggling Unemployment Insurance System.* National Employment Law Project. Briefing Paper. February 27, 2013. Available at: http://www.nelp.org/page/-/UI/2013/Briefing-Paper-Sequester-Unemployment-Insurance.pdf?nocdn=1
11. Neuberger, Zoe and Bob Greenstein. *The Impact of the Sequester on WIC: 575,000 to 750,000 Eligible Low-Income Women and Children at Nutritional Risk Could Be Denied Benefits.* Center on Budget and Policy Priorities. March 5, 2013. Available at: www.cbpp.org/files/2-26-13fa.pdf
12. *Estimated Cuts in Federal Housing Assistance and Community Development Programs Due to Sequestration, 2013.* Center on Budget and Policy Priorities. March 5, 2013. Available at: www.cbpp.org/files/1-28-13hous.pdf

CHAPTER I:
INTRODUCTION

It has been a half century since the development of the current official measure of poverty. In the early 1960s the measure represented an important advance, serving as a focal point for the public's growing concern about poverty in America. But over the decades, discussions about poverty increasingly included criticism of how poorly it was being measured. Society was evolving and public policy had shifted, yet the Census Bureau was still measuring poverty as if nothing had changed.

Dissatisfaction with the official measure prompted Congress to request a study by the National Academy of Sciences (NAS). The NAS's recommendations, issued in 1995, sparked further research and garnered widespread support among poverty experts.[13] However, neither the Federal nor any state or local government had adopted the NAS approach until CEO's initial report on poverty in New York City in August 2008.[14] This year's study, our fourth annual report, continues our practice of issuing yearly updates of our measure. Using the most recent data available, it provides poverty rates for 2005 through 2011.

This introductory chapter sets the context for our findings. It begins with an overview of the official measure and its weaknesses. We then describe our alternative, which is based on the NAS recommendations and the development of the new Federal Supplemental Poverty Measure (SPM), first issued in November 2011.[15] The second part of the introduction shifts the discussion from methodology to the local economy. Following the recession and continued weakness in the local economy from 2008 to 2010, the data for 2011 indicate some improvement in the City's job market. The introduction's final section summarizes the report's principal findings.

1.1 The Official Poverty Measure

The official measure's poverty threshold was developed in the early 1960s and was based on the cost of the U.S. Department of Agriculture's Economy Food Plan, a diet designed for "temporary or emergency use when funds are low." Because the survey data available at the time indicated that families typically spent a third of their income on food, the cost of the plan was simply multiplied by three to account for other needs. Since the threshold's 1963 base year, it has been updated annually by the change in the Consumer Price Index.[16]

A half century later, this poverty line has little justification. The threshold does not represent contemporary spending patterns; food now accounts for less than one-seventh of family expenditures, and housing is the largest item in the typical family's budget. The official threshold also ignores differences in the cost of living across the nation, an issue of obvious importance to measuring poverty in New York City. A final shortcoming of the threshold is that it is frozen in time. Since it only rises with the cost of living, it assumes that a standard of living that defined poverty in the early 1960s remains appropriate, despite advances in the nation's standard of living since that time.

The official measure's definition of the resources that are compared against the threshold is pre-tax cash. This includes wages, salaries, and earnings from self-employment; income from interest, dividends, and rents; and some of what families receive from public programs, *if* they take the form of cash. Thus, payments from Unemployment Insurance, Social Security, Supplemental Security Income (SSI), and Public Assistance are included in the official resource measure.

Given the data available and the policies in place at the time, this was not an unreasonable definition. But in recent years an increasing share of what government does to support low-income families takes the form of tax credits (such as the Earned Income Tax Credit) and in-kind benefits (such as Food Stamps). If policymakers or the public want to know how these programs affect poverty, the official measure cannot provide an answer.

13. Citro, Constance F. and Robert T. Michael (eds). *Measuring Poverty: A New Approach.* Washington, DC: National Academy Press. 1995. Much of the research inspired by the NAS report is available at: www.census.gov/hhes/povmeas/methodology/nas/index.html

14. New York City Center for Economic Opportunity. *The CEO Poverty Measure: A Working Paper by the New York City Center for Economic Opportunity.* August 2008. Available at: www.nyc.gov/html/ceo/downloads/pdf/final_poverty_report.pdf

15. U.S. Bureau of the Census. *The Research Supplemental Poverty Measure: 2010.* November 2011. Available at: www.census.gov/hhes/povmeas/methodology/supplemental/research/ Short_ResearchSPM2010.pdf

16. Fisher, Gordon M. "The Development and History of the Poverty Thresholds." *Social Security Bulletin*, Vol. 55, No. 4. Winter 1992.

Measures of Poverty

Official: The current official poverty measure was developed in the early 1960s. . It consists of a set of thresholds that were based on the cost of a minimum diet at that time. A family's pre-tax cash income is compared against the threshold to determine whether its members are poor.

NAS: At the request of Congress, the National Academy of Sciences issued a set of recommendations for an improved poverty measure in 1995. The NAS threshold represents the need for clothing, shelter, and utilities as well as food. The NAS income measure accounts for taxation and the value of in-kind benefits.

SPM: In March 2010 the Obama Administration announced that the Census Bureau, in cooperation with the Bureau of Labor Statistics, would create a Supplemental Poverty Measure based on the NAS recommendations, subsequent research, and a set of guidelines proposed by an Interagency Technical Working Group. The first report on poverty using this measure was issued by the Census Bureau in November 2011.

CEO: The Center for Economic Opportunity released its first report on poverty in New York City in August 2008. CEO's poverty measure is largely based on the NAS recommendations, with modifications based on the guidelines from the Interagency Technical Working Group.

1.2 The National Academy of Sciences' Alternative

NAS-based methods take a considerably different approach to both the threshold and resource side of the poverty measure. The poverty threshold reflects the need for clothing, shelter, and utilities, as well as food. It is established by selecting a sub-group of families as reference families,[17] calculating their spending on these items, and then choosing a point in the resulting expenditure distribution.[18] A small multiplier is applied to account for miscellaneous expenses such as personal care, household supplies, and non-work-related transportation. The threshold is updated each year by the change in the level of this spending. This connects

the threshold to the growth in living standards. In further contrast to the official measure, the NAS-style poverty line is also adjusted to reflect geographic differences in housing costs.

On the resource side, the NAS-based measure is designed to account for the flow of income and in-kind benefits that a family can use to meet the needs represented in the threshold. This creates a much more inclusive measure of income than pre-tax cash. The tax system and the cash-equivalent value of in-kind benefits for food and housing are important additions to family resources. But families also have non-discretionary expenses that reduce the income available to meet their other needs. These include the cost of commuting to work, childcare, and medical care that must be paid for out of pocket. This spending is accounted for as deductions from income.

1.3 The Supplemental Poverty Measure

The Census Bureau's Supplemental Poverty Measure is shaped by the NAS recommendations and a set of guidelines provided by an Interagency Technical Working Group (ITWG) in March 2010.[19] Revisions to the 1995 NAS recommendations center on the threshold side of the poverty measure. The most important of these are:

1. An expansion of the type of family unit whose expenditures determine the poverty threshold, from two-adult families with two children to all families with two children.

2. Use of a five-year, rather than three-year, moving average of expenditure data to update the poverty threshold over time.

3. Creation of separate thresholds based on housing status: whether the family owns its home with a mortgage; owns, but is free and clear of a mortgage; or rents.

1.4 CEO's Adoption of the NAS/SPM Method

CEO has followed the first two of these revisions to the NAS recommendations. However, we do not follow the SPM's creation of thresholds that vary by housing status. We account for all differences in housing status – including residence in rent-regulated apartments and participation in means-tested housing assistance

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17. The reference family proposed by the NAS is composed of two adults and two children. The threshold for this family is then scaled for families of different sizes and compositions. See Appendix B.
18. The NAS suggested that this point lie between the 30th and 35th percentile of the distribution. Citro and Michael, p. 106.

19. *Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure*. March 2010. Available at: www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf

programs – on the income side of the poverty measure.[20] By applying the ratio of New York City to U.S.-wide Fair Market Rent for a two-bedroom apartment to the housing portion of the threshold, we adjust the national-level SPM threshold (regardless of housing status) to account for the relatively high cost of housing in New York City. In 2011, our poverty line for the two-adult, two-child family comes to $30,949. We refer to this New York City-specific threshold as the CEO poverty threshold. (See Appendix B.)

Poverty Thresholds

Official: The official threshold was developed in the early 1960s and was based on the cost of a minimum diet at that time. It is updated each year by the change in consumer prices. It is uniform across the United States.

CEO: The CEO poverty threshold is a New York City-specific threshold derived from the U.S.-wide threshold developed for the Federal Supplemental Poverty Measure. The threshold is based on what families spend on basic necessities: food, clothing, shelter, and utilities. It is adjusted to reflect the variation in housing costs across the United States.

To measure the resources available to a family to meet the needs represented by the threshold, our poverty measure employs the Public Use Micro Sample from the Census Bureau's American Community Survey (ACS) as its principal data set. The advantages of this survey for local poverty measurement are numerous. The ACS is designed to provide measures of socioeconomic conditions on an annual basis in states and larger localities. It offers a robust sample for New York City (roughly 25,000 households) and contains essential information about household composition, family relationships, and cash income from a variety of sources.

But, as noted earlier, the NAS-recommended poverty measure greatly expands the scope of resources that must be measured in order to determine whether a family is poor. Unfortunately, the ACS provides only some of the information needed to estimate the additional resources required by the NAS measure. CEO has developed a variety of models that estimate the effect

of taxation, nutritional and housing assistance, work-related expenses, and medical out-of-pocket expenditures on total family resources and poverty status. We reference the resulting data set as the "American Community Survey Public Use Micro Sample as augmented by CEO" and we refer to our estimate of family resources as "CEO income."

Measuring Income

Official Income: The official poverty measure's definition of family resources is pre-tax cash. This includes income from sources such as wages and salaries, as well as government transfer payments, provided that they take the form of cash. Thus, Social Security benefits are included in this measure, but the value of in-kind benefits, like Food Stamps or tax credits such as the Earned Income Tax Credit, are not counted.

CEO Income: Based on the NAS recommendations, CEO income includes all the elements of pre-tax cash plus the effect of income and payroll taxes, as well as the value of in-kind nutritional and housing assistance. Non-discretionary spending for commuting to work, childcare, and out-of-pocket medical care are deductions from income.

Below is a brief description of how the non-pre-tax cash income items are estimated. More details on these procedures and any revisions we have made to them since our last report can be found in the appendices.

Housing Adjustment: The high cost of housing makes New York City an expensive place to live. The CEO poverty threshold, we noted above, is adjusted to reflect that reality. But some New Yorkers do not need to spend as much to secure adequate housing as the higher threshold implies. Many of the City's low-income families live in public housing or receive a housing subsidy, such as a Section 8 housing voucher. A large proportion of New York's renters live in rent-regulated apartments. Some homeowners have paid off their mortgages and own their homes free and clear. We make an upward adjustment to these families' incomes to reflect these advantages.

The ACS does not provide data on housing program participation, however. To determine which households in the ACS would be participants in rental subsidy or regulation programs, we match households in the Census

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20. The rationale for this decision is provided in Appendix B of last year's report. See: *The CEO Poverty Measure, 2005 – 2010: A Working Paper by the NYC Center for Economic Opportunity*. Available at: www.nyc.gov/html/ceo/downloads/pdf/CEO_Poverty_Measure_April_16.pdf

Bureau's New York City Housing and Vacancy Survey with household-level records in the ACS. (See Appendix C.)

Taxation: CEO has developed a tax model that creates tax filing units within the ACS households; computes their adjusted gross income, taxable income, and tax liability; and then estimates net income taxes after non-refundable and refundable credits are applied. The model takes account of Federal, State, and City income tax programs, including all the credits that are designed to aid low-income filers. The model also includes the effect of the Federal payroll tax for Social Security and Medicare (FICA). (See Appendix D.)

Nutritional Assistance: We estimate the effect of Food Stamps,[21] the National School Lunch program, the School Breakfast Program, and the Supplementary Nutrition Program for Women, Infants, and Children (WIC). To estimate Food Stamp benefits, we make use of New York City Human Resources Administration Food Stamp records, imputing Food Stamp cases to "Food Stamp Units" we construct in the ACS data. We count each dollar of Food Stamp benefits as a dollar added to family income.

The likelihood of participation in the school meals programs is calculated by a probability model. Participation is assigned to eligible families to replicate data on meals served by the City's Department of Education. We follow the Census Bureau's method for valuing the income from the programs by using the per-meal cost of the subsidy. We identify participants in the WIC program in a similar manner, matching enrollment in the program to participation rate estimates by the New York State Department of Health. Benefits are calculated using the average benefit level per participant calculated by the U.S. Department of Agriculture. (See Appendix E.)

Home Energy Assistance Program: The Home Energy Assistance Program (HEAP) provides assistance to low-income households that offsets their utility costs. In New York City, households that receive cash assistance, Food Stamps, or are composed of a single person receiving SSI benefits are automatically enrolled in the program. Other low-income households can apply for HEAP, but administrative data from the City's Human Resources Administration indicate that nearly all HEAP households come into the program through their participation in these other benefit programs. We identify HEAP-

receiving households by their participation in public assistance, Food Stamps, and SSI, and then add the appropriate benefit to their income. For 2011, we also make use of HEAP receipt reported in the Housing and Vacancy Survey. (See Appendix F.)

Work-Related Expenses: Workers must travel to and from their jobs, and we treat the cost of that travel as a non-discretionary expense. We estimate the number of trips a worker will make per week based on their usual weekly hours. We then calculate the cost per trip using information in the ACS about their mode of transportation and administrative data (such as subway fares). Weekly commuting costs are computed by multiplying the cost per trip by the trips per week. Annual commuting costs equal weekly costs times the number of weeks worked over the past 12 months.

Families in which the parents are working must often pay for the care of their young children. Like the cost of commuting, the CEO poverty measure treats childcare expenses as a non-discretionary reduction in income. Because the American Community Survey provides no information on childcare spending, we have created an imputation model that matches the weekly childcare expenditures reported in the Census Bureau's Survey of Income and Program Participation (SIPP) to working families with children in the ACS data set. Childcare costs are only counted if they are incurred in a week in which the parents (or the single parent) are at work. They are capped by the earned income of the lowest earning parent. (See Appendix G.)

Medical Out-of-Pocket Expenditures (MOOP): The cost of medical care is also treated as a non-discretionary expense that limits the ability of families to attain the standard of living represented by the poverty threshold. MOOP includes health insurance premiums, co-pays, and deductibles, as well as the cost of medical services that are not covered by insurance. In a manner similar to that for childcare, we use an imputation model to match MOOP expenditures by families in the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey to families in the ACS sample. (See Appendix H.)

Figure I One summarizes the discussion thus far, contrasting how the official and CEO poverty measures establish a threshold and account for family resources.

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21. The Food Stamp program was recently renamed the Supplemental Nutritional Assistance Program (SNAP). Since the program is more widely recognized by its former name, we continue to use it.

FIGURE I ONE
Comparison of Poverty Measures

		Official	CEO
Threshold		Established in mid-1960s at three times the cost of "Economy Food Plan."	Equal to 33rd percentile of family expenditures on food, clothing, shelter, and utilities, plus 20 percent more for miscellaneous needs.
		Updated by change in Consumer Price Index.	Updated by change in expenditures for the items in the threshold.
		No geographic adjustment.	Inter-area adjustment based on differences in housing costs.
Resources		Total family pre-tax cash income (includes earnings, cash assistance, Social Security, etc.)	Total family after-tax income.
			Include value of near-cash, in-kind benefits such as Food Stamps.
			Housing status adjustment.
			Subtract work-related expenses such as childcare and transportation costs.
			Subtract medical out-of-pocket expenditures.

1.5 Comparing Poverty Rates

As noted above, the CEO poverty threshold for a two-adult, two-child family in 2011 was $30,949. The official poverty line for the equivalent family was $22,811 in that year. Obviously, if this were the only change CEO had made to the poverty measure, it would lead to a poverty rate above the official measure. But, as described above, CEO also uses a far different measure of income to compare against the poverty threshold. Although our measure includes subtractions as well as additions to resources, CEO income is higher than pre-tax cash income at the lower rungs of the income ladder. At the 20th percentile, for example, CEO income was $30,195 in 2011.[22] The corresponding figure for pre-tax cash was only $22,944. Thus, if a more complete account of resources had been the only change we made to the poverty measure, the CEO poverty rate would fall below the official measure. Figure I Two illustrates official and CEO incomes, thresholds, and poverty rates for 2011. The effect of the higher CEO threshold (35.7 percent above the official) outweighs the effect of CEO's more complete definition of resources (which is 31.6 percent higher at the 20th percentile than the official resource measure), resulting in a higher poverty rate. In 2011, the CEO poverty rate stood at 21.3 percent while the official rate was 19.3 percent, a 2.0 percentage point difference.

Official Poverty Rates

The official poverty rates reported in this study differ from those provided by the Census Bureau. To make them more comparable to the CEO poverty rates, they are calculated using CEO's poverty universe and unit of analysis. CEO excludes all members of the group quarters population and includes all members of the household population in its universe of persons for whom a poverty status is determined. The CEO poverty unit of analysis expands the notion of the family unit to include more members of the household than just those related by blood, marriage, or adoption. Unmarried partners, for example, are treated as members of the family unit. Both these changes lower the poverty rate. In 2011, for example, the Census Bureau's official poverty rate for New York City is 20.1 percent. The 2011 official poverty rate for the City that we report is 19.3 percent. See Appendix A for further explanation.

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22. Throughout this working paper, we report income in family size and composition-adjusted dollars. This makes the income measures directly comparable to the two-adult, two-child reference family poverty threshold.

FIGURE I TWO
Comparison of Thresholds, Income, and Poverty Rates, Official and CEO, 2011
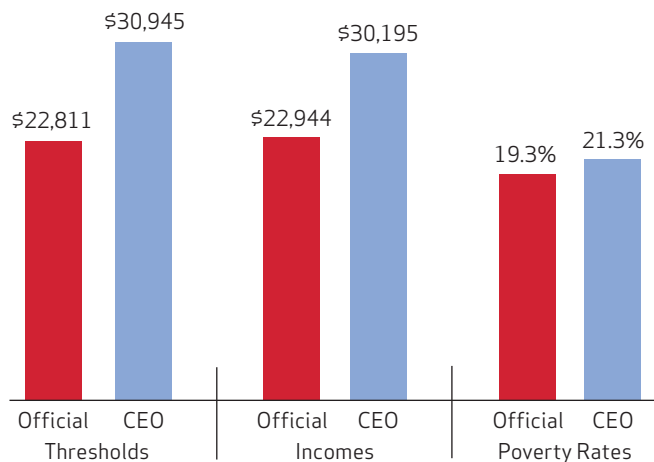
Sources: U.S. Bureau of the Census and American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Incomes are measured at the 20th percentile and stated in family size and composition-adjusted dollars.

1.6 The New York City Labor Market

Poverty rates are influenced by the economic environment. A focus of this report is on the change in the CEO poverty rate since 2008. The national economy began to contract sharply in early 2008, marking December 2007 as the prior high water mark in the U.S.-wide business cycle.[23] Thus, U.S.-level studies tracking the effects of the recent recession and subsequent period of sluggish employment growth have used 2007 as their point of comparison. But the recession came later to New York City. Here, employment did not begin to decline until the fall of 2008, making that year the last for which annual indicators find increases in employment, earnings, and income.

From 2008 to 2010, labor market indicators for City residents point decidedly south. A smaller proportion of the working age population was holding a job. As Figure I Three illustrates, the employment/population ratio – the share of New Yorkers 18 through 64 years of age who were holding a job at the time they were surveyed – peaked in 2008 at 70.8 percent. That proportion declined to 66.4 percent by 2010. The downward trend, however, is broken by the 2011 uptick in the ratio (of 0.6 percentage points) to 67.0 percent.

Because poverty status is determined by annual income, employment over the course of a year is a particularly salient labor market indicator. Figure I Four shows that the share of the working age population with steady

23. The National Bureau for Economic Research dates the start of the recent recession at December 2007.

FIGURE I THREE
Employment/Population Ratios, 2005 - 2011
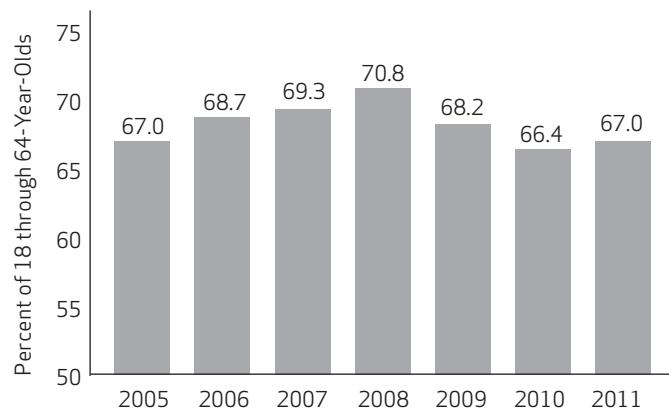
Source: American Community Survey Public Use Micro Sample.

work, defined as 50 or more weeks in the prior 12 months, declined from 59.8 percent in 2008 to 56.3 percent in 2010, while the proportion of the population that had no work at all grew from 23.5 percent in 2008 to 27.3 percent 2010. The latest data identify a leveling off of the decline in weeks worked; the share of the working age population with year-round work, for example, held steady.

FIGURE I FOUR
Weeks Worked in Prior 12 Months, 2008 - 2011
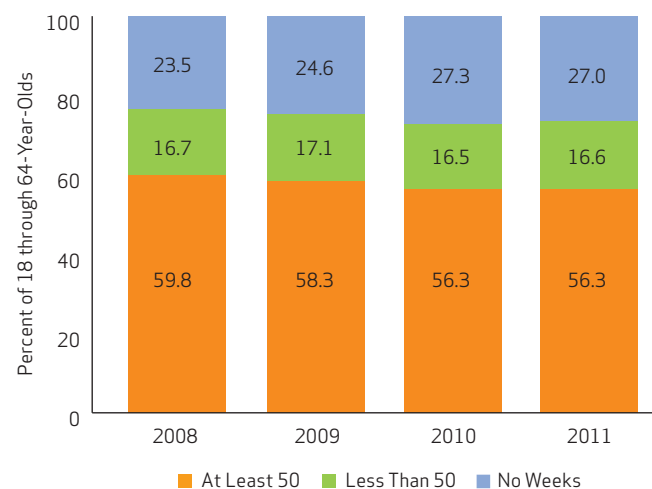
Source: American Community Survey Public Use Micro Sample.

The trend in weeks worked is reflected in measures of earnings. Table I One reports earnings per family for those families that are in the lower half of the earnings distribution. After registering sharp declines from 2008 to 2009 and 2009 to 2010, the changes in earnings from 2010 to 2011 are too small to be statistically significant.

TABLE I ONE
Annual Family-Level Earned Income, 2008 - 2011

	Year				Percentage Change		
Percentile	2008	2009	2010	2011	2008-2009	2009-2010	2008-2011
20	$12,311	$11,116	$9,673	$10,157	-9.7%	-13.0%	5.0%
25	$18,701	$17,945	$16,122	$16,029	-4.0%	-10.2%	-0.6%
30	$25,460	$24,226	$21,741	$21,970	-4.8%	-10.3%	1.1%
35	$31,815	$30,506	$27,818	$27,682	-4.1%	-8.8%	-0.5%
40	$38,218	$36,707	$33,922	$33,301	-4.0%	-7.6%	-1.8%
45	$44,640	$43,131	$40,305	$40,322	-3.4%	-6.6%	0.0%
50	$51,271	$50,019	$46,505	$47,000	-2.4%	-7.0%	1.1%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Earnings are stated in family size and composition-adjusted dollars. They are not adjusted for inflation.
Persons in families with no earnings are included.

The labor market data suggest that the 2011 ACS describes an economy at a turning point. There is a modest uptick in employment levels and an end to the recession-related decline in weeks worked and annual earnings. The contrast between the improvement in the employment-population ratio and the stability of the latter two indicators is likely due to the way in which the ACS sample is collected. The employment-population ratio indicates respondents' status at the time they are surveyed. By contrast, the weeks worked and annual earnings data are retrospective, looking back over the prior 12 months. Thus the employment-population ratio reflects conditions in calendar year 2011, while the annual indicators are as representative of conditions in 2010 as they are of 2011.

Calendar Years and ACS Survey Years

The American Community Survey (ACS) is conducted as a rolling sample gathered over the course of a calendar year. Approximately one-twelfth of the total sample is collected in each month. Respondents are asked to provide information on work experience and income during the 12 months prior to the time they are in the sample. Households that are surveyed in January of 2011, for example, would report their income for the 12 months of 2010, households that are surveyed in February 2011 would report their income for February 2010 through January 2011, and so on. Consequently, estimates for poverty rates derived from the 2011 ACS do not, strictly speaking, represent a 2011 poverty rate. Rather, it is a poverty rate derived from a survey that was fielded in 2011. Readers should bear in mind this difference as they interpret the findings in this report.

1.7 Key Findings in This Report

In the context of a labor market that is recovering from a two year slump, we find that:

After rising from 19.0 percent in 2008 to 20.9 percent in 2010, the CEO poverty rate stood at 21.3 percent in 2011, statistically unchanged from the prior year. The official poverty rate followed a similar path, rising from 16.8 percent in 2008 to 18.8 percent in 2010. The official poverty rate in 2011 was 19.3 percent, also statistically unchanged from 2010.

Although the CEO poverty rate exceeds the official rate in each year for which we have data, the CEO methodology finds that a smaller proportion of the City's population is living in extreme poverty – below 50 percent of the poverty threshold – than does the official method (5.6 percent compared to 7.9 percent in 2011).

The trend in CEO poverty rates by individual characteristics such as age, family status (i.e., number of parents in the family unit), and borough generally follows the rise in the Citywide poverty rate from 2008 to 2010 and its statistical stability from 2010 to 2011. Looking over the 2008 to 2011 time period, we find statistically significant increases in the poverty rate for males, females, children under 18, working age adults, Non-Hispanic Whites, Asians, and Hispanics. There are few statistically meaningful changes in poverty rates from 2010 to 2011. An important exception is the decline in the poverty rate for persons living in a single-headed family with children, from 33.4 percent in 2010 to 30.9 percent in 2011.

From 2008 to 2011, poverty rates increased in three out of five of the City's boroughs: Brooklyn (by 1.6 percentage points to 23.9 percent), Queens (by 4.8

percentage points to 21.1 percent), and Staten Island (by 3.9 percentage points to 15.3 percent).

The pattern in poverty rates for the United States based on the new Federal Supplemental Poverty Measure resembles the CEO pattern for New York City. Across the entire population, the two NAS-based poverty measures find a higher incidence of poverty than do the official measures. In the U.S., the rate in 2011 is 16.1 percent as opposed to 15.1 percent. In New York City, the two poverty rates were 21.3 percent and 19.3 percent in that year. Because they count the value of non-cash assistance, however, both the SPM and CEO measures of poverty among children are lower than child poverty rates based on the official method: 18.1 percent compared to 22.3 percent for the nation; 24.7 percent rather than 28.7 percent for the City.

The analytical sections of this year's report focus on trends in three family-level measures of income: earnings, pre-tax cash, and CEO income. Comparisons indicate the extent to which the recession-related declines in earned income were offset by cash and non-cash benefit programs. We find that:

In 2010, earned income stood at only 85.4 percent of its 2008 level. Pre-tax cash, the measure of income used in the official poverty measure, equaled 91.9 percent of its 2008 level in 2010. By contrast, CEO income did not decline from 2008 to 2010. From 2010 to 2011, earnings and pre-tax cash were statistically unchanged, while CEO income rose by 2.5 percent. The dramatically stronger performance of the income measure used to determine the CEO poverty rate compared to the income measure used to determine the official poverty rate is the result of CEO's inclusion of non-cash social safety net programs that are uncounted in the official poverty measure.

Participation in safety net programs tends to grow as need increases during economic contractions. In addition to this "passive" expansion, policymakers took active steps during the recession to bolster the purchasing power of low-income families by creating new and expanding existing tax credit programs. They also increased benefit levels and fostered participation in the Food Stamp program. We find that these additional steps blunted what would have been a very sharp rise in the CEO poverty rate from 2008 to 2011. We estimate that without these steps, the CEO poverty rate would have increased to 23.6 percent in 2011, instead of 21.3 percent.

The remainder of this report proceeds as follows: The next chapter provides an overview of trends in the official and CEO poverty rates from 2005 to 2011. In that context we trace how changes in the threshold and resource sides of the two measures determined changes in their respective poverty rates. Chapter III details poverty rates in New York City by demographic characteristic, family status, and borough. In Chapter IV, we compare official and CEO poverty rates for New York City to official and Supplemental Poverty Measure rates for the United States. The following chapter explores the degree to which cash and non-cash public benefit programs offset recession-related declines in earned income. The report's final chapter offers some thoughts on the implications of our findings. A set of appendices provide more detail about how our poverty estimates are created.

CHAPTER II:
POVERTY IN NEW YORK CITY, 2005 - 2011

The Introduction noted that the CEO poverty rate exceeds the official rate in 2011. Indeed, it does so in each of the years for which we have comparable data. The focus of this chapter, however, is not on the different levels of poverty derived from the two approaches, but on how and why they change over time. The official and CEO poverty rates have taken parallel paths during the seven-year time span covered by this report. From 2005 to 2008, when the City economy was expanding, the two measures register declines of similar magnitude. From 2008 to 2011, they record nearly equal increases.

This chapter begins with an overview of how and why the official and CEO poverty rates changed from 2005 to 2011. The similarity in their trend masks important differences between the measures. From 2008 to 2010, recession-related declines in the official measure of income – pre-tax cash – are dramatic. Over the same time period, CEO income was remarkably stable. From 2010 to 2011, official income was unchanged while CEO income rose.

A second section in the chapter explores the depth of poverty, the degree to which the poor are living close to or far below the poverty threshold, as well as the extent of near poverty (the degree to which the population that resides above the poverty line is uncomfortably close to it). Because CEO's poverty measure provides a more inclusive definition of income, it finds a smaller proportion of the population in extreme poverty than does the official measure. On the other hand, because eligibility for means-tested benefits ends and the value of tax credits phase out as incomes rise, the CEO measure finds a larger share of the population living in near poverty compared to the official measure.

The chapter's third section explores the role that non-cash resources and non-discretionary expenses play in the CEO poverty measure. We find that since 2008, tax programs and Food Stamps have become increasingly important resources for low-income families. This is not simply a "passive" outcome reflecting greater need in a bad economy. It is also a result of policy choices, a topic we explore in Chapter Five.

2.1 New York City Poverty Rates, 2005 - 2011

Changes in the official and CEO poverty rate from 2005 to 2011 move in tandem with the labor market conditions described in the Introduction. Poverty declines during the expansion and rises after 2008. Figure II One illustrates the official and CEO poverty rates for New York City over the seven-year time span covered in this report.

FIGURE II ONE
Official and CEO Poverty Rates, 2005 - 2011
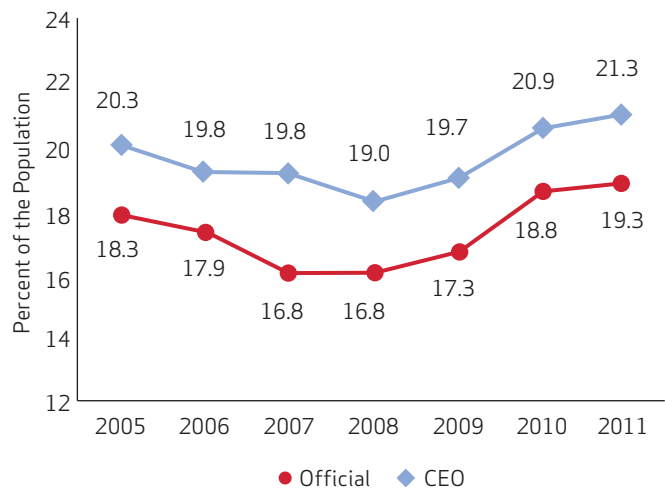
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Official poverty rates are based on the CEO poverty universe and unit of analysis.

Table II One provides these rates and additionally, reports differences between them and changes over time. As noted above, the CEO poverty rate exceeds the official rate in each year, a difference that ranges from 2.0 to 3.0 percentage points. However, changes in the two rates over time are remarkably similar. While the City economy was growing, from 2005 to 2008, the official poverty rate declined by 1.5 percentage points while the CEO poverty rate fell by 1.3 percentage points. From 2008 to 2010, as employment and earnings contracted, the official poverty rate rose by 2.1 percentage points to 18.8 percent, and the CEO poverty rate climbed by 1.9 percentage points, reaching 20.9 percent in 2010. The most recent data reflect a stabilizing labor market; neither poverty rate experienced a statistically significant change from 2010 to 2011.

TABLE II ONE
Official and CEO Poverty Rates, 2005 - 2011

(Numbers are Percent of the Population)

Year	Official	CEO	Percentage Point Difference*
2005	18.3	20.3	**2.0**
2006	17.9	19.8	**1.9**
2007	16.8	19.8	**3.0**
2008	16.8	19.0	**2.3**
2009	17.3	19.7	**2.3**
2010	18.8	20.9	**2.1**
2011	19.3	21.3	**2.0**

Percentage Point Change*	Official	CEO
2005-2008	**-1.5**	**-1.3**
2008-2010	**2.1**	**1.9**
2010-2011	0.5	0.4

*Differences and changes are measured in percentage points and are taken from unrounded numbers; those in bold type are statistically significant.
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Official poverty rates are based on the CEO poverty universe and unit of analysis.

Table II Two explores the changes in poverty rates from the vantage point of changes on the income and threshold side of their respective poverty measures.[24] As the table's Panel A reports, the official measure of income – pre-tax cash – rose in each year from 2005 to 2008, growing by 17.7 percent across the three years. From 2008 to 2010, pre-tax cash plunged by 8.1 percent. This measure of income was unchanged from 2010 to 2011.

Changes in income tell a story about poverty rates when they are compared against changes in the poverty threshold. In the 2005 to 2008 period, year-to-year changes in pre-tax income exceeded the change in the official threshold. From 2006 to 2007, for example, this measure of income rose by 7.8 percent while the official threshold edged up by 2.9 percent. As a consequence, the official poverty rate declined by 1.2 percentage points. In the two-year period from 2008 to 2010, by contrast, the steep fall in income (by 8.1 percent) was coupled with a modest rise in the official threshold (by 1.3 percent), leading to a rise in the official rate of 2.1 percentage points. The 3.2 percent climb in the official threshold from 2010 to 2011 outpaced the essentially unchanged measure of income, which generated an arithmetic rise in the official poverty rate by 0.5 percentage points. This increase, however, was not large enough to be statistically significant.

Panel B in the table provides the same information for CEO income, thresholds, and poverty rates. The pattern of rising incomes and growth in the poverty thresholds it describes, from 2005 to 2008, mimics the pattern for the official measure. The 20.9 percent rise in CEO income from 2005 to 2008 outpaced the 17.5 percent increase in the CEO threshold, leading to a fall in the poverty rate by 1.3 percentage points.

From 2008 to 2010 the CEO poverty rate rose by 1.9 percentage points, roughly equal to the climb in the official rate. But the similarity in the two poverty rate increases masks important differences on the income side of the poverty measure. CEO income is remarkably more stable than official income; it was essentially unchanged from 2008 to 2010. From 2010 to 2011, it rose by 2.5 percent, a somewhat more modest pace than the 3.0 percent increase in the CEO threshold. This resulted in a small, but not statistically significant, uptick in the CEO poverty rate from 2010 to 2011.

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24. To make the income figures in the table comparable to the two-adult, two-child family poverty thresholds, they are adjusted for family size and composition. Pre-tax cash and CEO incomes are both reported at the 20th percentile of their respective distributions and both are stated in current, not inflation adjusted, dollars.

TABLE II TWO
Income, Thresholds, and Poverty Rates, Official and CEO, 2005 - 2011

A. Official Income, Thresholds, and Poverty Rates

Year	Income (Pre-tax Cash)		Threshold		Poverty Rate	
	Level	Percentage Change*	Level	Percentage Change*	Level	Percentage Point Change*
2005	$21,154		$19,806		18.3%	
2006	$22,339	5.6%	$20,444	3.2%	17.9%	-0.3
2007	$24,083	7.8%	$21,027	2.9%	16.8%	**-1.2**
2008	$24,896	3.4%	$21,834	3.8%	16.8%	0.0
2009	$24,087	-3.2%	$21,756	-0.4%	17.3%	0.6
2010	$22,873	-5.0%	$22,113	1.6%	18.8%	**1.5**
2011	$22,944	0.3%	$22,811	3.2%	19.3%	0.5

	Percentage Change	Percentage Change	Percentage Point Change
2005-2008	17.7%	10.2%	**-1.5**
2008-2010	-8.1%	1.3%	**2.1**

B. CEO Income, Thresholds, and Poverty Rates

Year	Income		Threshold		Poverty Rate	
	Level	Percentage Change*	Level	Percentage Change*	Level	Percentage Point Change*
2005	$24,332		$24,532		20.3%	
2006	$25,711	5.7%	$25,615	4.4%	19.8%	-0.5
2007	$27,108	5.4%	$26,979	5.3%	19.8%	0.0
2008	$29,417	8.5%	$28,822	6.8%	19.0%	**-0.8**
2009	$29,483	0.2%	$29,265	1.5%	19.7%	0.6
2010	$29,465	-0.1%	$30,055	2.7%	20.9%	**1.2**
2011	$30,195	2.5%	$30,945	3.0%	21.3%	0.4

	Percentage Change	Percentage Change	Percentage Point Change
2005-2008	20.9%	17.5%	**-1.3**
2008-2010	0.2%	4.3%	**1.9**

*Change from prior year.
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Official poverty rates are based on the CEO poverty universe and unit of analysis.
Incomes are measured at the 20th percentile and are stated in family size and composition-adjusted dollars. They are not adjusted for inflation. Differences in poverty rates are measured in percentage points and are taken from unrounded numbers; those in bold type are statistically significant..

Figure II Two illustrates the difference in the income trends and sheds further light on it by bringing the earnings data reported in the Introduction's Table I One into the picture. The figure measures family-level earnings, official income (pre-tax cash), and CEO income, relative to their respective levels in 2008.[25] Each income measure is scaled to equal 100 percent in that year. Earnings is the simplest of the three income metrics, consisting of wages, salaries, and income from self-employment per family. It is highly dependent on employment trends and thus is closely tied to the business cycle. In 2010 earnings were 85.4 percent of their level in 2008. From 2010 to 2011, earnings ceased their decline.

Pre-tax cash (the official poverty measure's definition of income) includes earnings, along with income from investments and – most importantly in this context – transfer payments if they take the form of cash. But interestingly, the time trend for this broader measure is quite similar to earnings' trend. Despite the inclusion of income from public assistance, Supplemental Security Income (SSI), Social Security, and Unemployment Insurance in pre-tax cash, the decline in this income metric from 2008 to 2010 closely tracks the fall in earnings. Pre-tax cash in 2010 was 91.9 percent of its 2008 level, suggesting that the cash safety net provided a very modest cushion for low-income families as the economy was contracting. Paralleling the trend in earnings, total pre-tax cash income was unchanged from 2010 to 2011.

The stability of CEO income during the economic downturn is the outlier in the figure, reflecting the extent to which non-cash resources (such as tax credits and in-kind benefits) filled the income gap created by the recession-related decline in earnings. After two years of economic decline, it stood at 100.2 percent of its 2008 level in 2010. This measure of income then rose to 102.6 percent of its 2008 level in 2011.

If CEO income was so much more stable than the official income measure, why did the two poverty rates have similar increases since 2008? The answer is the more rapid increase in the CEO poverty threshold during the economic downturn. As Table II Two indicates, the

FIGURE II TWO
Comparison of Income Trends, 2005- 2011
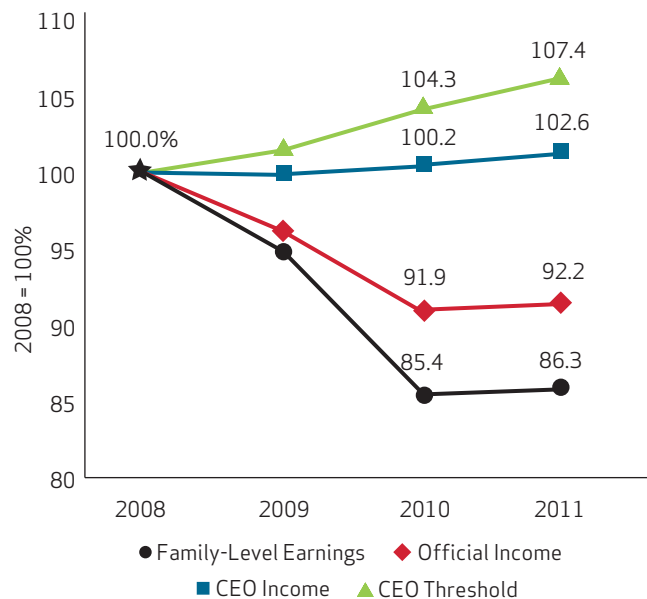
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Earnings are measured at the 30th percentile and incomes are measured at the 20th percentile of their respective distributions. Incomes are not inflation adjusted.

official threshold slipped by 0.4 percent from 2008 to 2009 and edged up by 1.6 percent from 2009 to 2010.[26] Reflecting the post-bubble fall-off in housing expenditures, the growth in the CEO threshold from 2008 onward is considerably slower than its rise from 2005 to 2008. But its increase outpaced the rise in the official threshold over the next two years, growing by 1.5 percent from 2008 to 2009 and by 2.7 percent from 2009 to 2010. From 2010 to 2011, however, the official and CEO thresholds grew at similar rates, by 3.2 percent and 3.0 percent, respectively.

Figure II Two also illustrates how the trends in various income measures compare to the growth in the CEO threshold. By 2010 the CEO poverty threshold stood at 104.3 percent of its 2008 value, illustrating a growing gap between the threshold and all the income measures, including CEO income. But that growth is modest relative to the chasm that would have emerged had CEO income fallen as rapidly as earnings or official income.

25. As in the prior tables, each income measure is stated in family size and composition-adjusted dollars. Official and CEO incomes are taken at the 20th percentile of their respective distributions. Earnings are measured at the 30th percentile. All three measures are stated in current, not inflation adjusted, dollars.

26. The decline in the official poverty threshold from 2008 to 2009 is due to a rare fall in the Consumer Price Index.

2.2 The Depth of Poverty and Extent of Near Poverty

The poverty rate is a one-number summary measure. It simply tells us what fraction of the population lives below the poverty threshold. Because it is based on a binary classification – people are either poor or not poor – the rate makes no distinction between the poor who live far below the poverty line and those who live just under it. By the same token, the poverty rate does not indicate whether a relatively large share of the non-poor lives just above the line or far beyond it. These can be important distinctions. The distance between people just below and those just above the poverty line may only be a few dollars, while the distance between the poorest of the poor and those just below the poverty threshold can be $20,000 or more.

Table II Three compares the distribution of the population by percentages of the poverty threshold under the official and CEO poverty measures for 2011. For both measures we classify the population as living below 50 percent, 50 through 74 percent, 75 through 99 percent, 100 through 124 percent, and 125 through 149 percent of the poverty line. We refer to these categories as degrees of poverty. Because the two measures' thresholds differ, the table provides the corresponding values of the reference family's poverty threshold that define each interval.

The table indicates that, although a larger share of the population lives below 100 percent of the CEO poverty threshold than the official poverty line, a smaller share of the population under the CEO measure is living in extreme poverty, below 50 percent of the poverty threshold (5.6 percent against 7.9 percent). This difference is particularly striking given the higher CEO threshold. At the 50 percent level it equals $15,472, while 50 percent of the official threshold is only $11,406. It results from the differences in the measures' definitions of income. Because the more inclusive CEO measure accounts for resources omitted in the official definition of income, it provides a more informative gauge of the ability of the social safety net to protect vulnerable families from extreme poverty.

The relatively smaller proportion of the population that is living below 50 percent of the poverty threshold implies, of course, that using the CEO measure, a larger share of the City population lies between 50 through 99 percent of the poverty threshold than with the official measure. The table shows that under the CEO measure, 5.7

percent and 10.0 percent of the population were in the 50 through 74 percent and 75 through 99 percent intervals, respectively. The corresponding shares under the official measure were 5.3 percent and 6.1 percent.

In addition to classifying a larger share of the poor close to 100 percent of the poverty line, the CEO measure also places a larger proportion of the non-poor near poverty. The "near poor" – people who are in the 100 through 124 percent and 125 through 149 percent of the poverty threshold groups – are 12.9 percent and 11.7 percent, respectively, of the City population with the CEO measure. Under the official measure, these two categories contain only 5.8 percent and 5.5 percent of the population, respectively. A greater share of the population is near poor using the CEO measure than the official measure for two reasons. First, the CEO threshold creates wider income bands; all else equal they would contain more people. Second, families that lie above, but close to, the CEO threshold are in the phase-out range of tax credits and income cutoff points for means-tested assistance. Their CEO income, therefore, can be less than their pre-tax cash income, making them more likely to be near the poverty threshold.

TABLE II THREE

Distribution of the Population by Degrees of Poverty, Official and CEO, 2011

A. Official Poverty Measure

Percent of Poverty Threshold	Reference Family Threshold Range	Percent	Cumulative Percent
Less than 50	Less than $11,406	7.9%	7.9%
50-74	$11,406 - $17,107	5.3%	13.1%
75-99	$17,108 - $22,810	6.1%	19.3%
100-124	$22,811 - $28,513	5.8%	25.1%
125-149	$28,514 - $34,216	5.5%	30.6%

B. CEO Poverty Measure

Percent of Poverty Threshold	Reference Family Threshold Range	Percent	Cumulative Percent
Less than 50	Less than $15,472	5.6%	5.6%
50-74	$15,472 - $23,208	5.7%	11.3%
75-99	$23,209 - $30,944	10.0%	21.3%
100-124	$30,945 - $38,680	12.9%	34.1%
125-149	$38,681 - $46,416	11.7%	45.8%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Official poverty rates are based on the CEO poverty universe and unit of analysis.

Given the similarities in trends in the poverty rates noted in the prior section, does this finer-grained perspective reveal differences in the poverty measures' change over time? Table II Four focuses on the rise in poverty from 2008 to 2011 and simplifies Table II Three's groupings. We track the share of population that is below 50 percent, 50 through 99 percent, and 100 through 149 percent of the poverty threshold. The final column in the table gives the percentage point change in the shares from 2008 to 2011. The table's Panel A indicates that, for the official poverty measure, all of the increases in this period are statistically significant, including the 1.0 percentage point rise in the share of the population that is below 50 percent of the poverty threshold. Panel B reveals that there was also an increase in extreme poverty using the CEO methodology, of 0.5 percentage points.[27] While the increases in the poverty rates for the different degrees of official poverty are fairly similar, the increase in near poverty using the CEO measure is notably larger than the uptick in extreme poverty.

TABLE II FOUR
Distribution of the Population by Degrees of Poverty, Official and CEO, 2008 - 2011

(Numbers are Percent of the Population)

A. Official Poverty Measure					Percentage Point Change*
	2008	2009	2010	2011	2008 - 2011
Below 50 percent	6.9	7.3	7.7	7.9	**1.0**
50 through 99 percent	9.9	10.0	11.1	11.4	**1.5**
100 through 149 percent	9.8	10.1	10.5	11.4	**1.5**
B. CEO Poverty Measure					
Below 50 percent	5.1	4.8	5.6	5.6	**0.5**
50 through 99 percent	13.9	14.8	15.3	15.7	**1.7**
100 through 149 percent	22.0	22.6	24.1	24.6	**2.6**

*Changes are percentage point changes. Those in bold are statistically significant.
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Official poverty rates are based on the CEO poverty universe and unit of analysis.

2.3 The Effect of Non-Cash Resources on the CEO Poverty Rate

The income data reported in Table II Two indicate that from 2008 to 2010, pre-tax cash income plunged by 8.1 percent. We noted how the sharp drop in this income metric closely tracked the recession-related decline in earnings. Over the same period, CEO income was essentially unchanged. From 2010 to 2011, the two income measures continued along different paths. Official income was unchanged, while CEO income rose. Clearly, components of CEO income other than pre-tax cash softened the blow the economic downturn delivered to low-income families and were responsible for the rise in income in the latest data. Which income sources and what programs have had the most important impact?

The effects of the additional (non-pre-tax cash) income sources are identified in Table II Five. The table's Panel A reports poverty rates. The first row, labeled "Total CEO Income," gives the poverty rate using the full CEO income measure. This is followed by poverty rates calculated by omitting one of the non-pre-tax cash elements of CEO income. The poverty rates that are based on the omission of an item that adds resources to CEO income – beginning with the row for the housing adjustment and ending with the Home Energy Assistance Program (HEAP) – are higher than the total income rates. Likewise, the poverty rates that result from leaving out items that reduce resources – payroll taxes through medical out-of-pocket expenditures (MOOP) – are lower than the full resource poverty rate.

The effect of omitting each income element, reported in the table's Panel B, is the difference between the poverty rate without the income element and the full resource poverty rate. It gauges the percent of the City population that is moved in or out of poverty by the inclusion of the item in the CEO definition of income. For example, the 2011 poverty rate that is net of the housing adjustment to income is 27.5 percent. The difference between this poverty rate and the total income poverty rate of 21.3 indicates that, all else equal, the housing adjustment lifted 6.2 percent of the population over the CEO poverty threshold. (The marginal effect of each income element in 2011 is also illustrated in Figure II Three.)

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27. The difference between the two increases in extreme poverty from 2010 to 2011 is not statistically significant.

The table provides this information for 2005 to 2011, and allows us to look at change over time. During these years the rankings of the marginal effects are quite stable. The housing adjustment has the largest poverty-reducing effect in each year, followed by income taxes and Food Stamps. (The income tax system reduces poverty because so many low-income tax filers benefit from tax credits that not only eliminate their tax liability, but generate refunds that create a net addition to their after-tax income.) The other poverty-reducing income elements – school meals, the Supplemental Nutritional Program for Women, Infants, and Children (WIC), and HEAP – have relatively minor effects on the Citywide poverty rate, either because they are narrowly targeted (WIC) or because their benefit levels are so small (HEAP).

On the other side of the ledger, MOOP consistently has the largest poverty-increasing effect of the non-discretionary expenses that reduce family incomes.[28] This is followed by payroll taxes (FICA) and commuting costs, which have notable, and nearly equal, effects. Although

childcare costs can be a considerable drain on a family's resources, they are incurred by too small a share of the total population to have much effect on the Citywide poverty rate.

The stability of the rankings, however, does not mean that there were no important changes in these marginal effects. Income tax programs brought 2.9 percent of the population out of poverty in 2007, but this effect leapt to 4.3 percentage points in 2008 and stayed at this level through 2010. The drop off in the income tax effect in 2011 reflects the expiration of several income tax credit programs, particularly the Making Work Pay Credit. However, the change in the income tax effect was offset by a 2.0 percentage point reduction in the payroll tax rate. The marginal, poverty increasing, effect of payroll taxes fell from 2.1 percentage points in 2010 to 1.8 percentage points in 2011. The increasing importance of Food Stamps also began in 2007, rising from 1.8 percentage points in that year to 3.6 percentage points in 2011.

28. The marginal effect for medical out-of-pocket expenditures drops after 2007. This may be a result of a change in the ACS questionnaire as well as the implementation of prescription drug coverage for Medicare enrollees. See Appendix G for more discussion.

TABLE II FIVE
Marginal Effects of Non-Cash Resources on CEO Poverty Rates, 2005 - 2011
(Numbers are Percent of the Population)

	2005	2006	2007	2008	2009	2010	2011
A. Poverty Rates							
Total CEO Income	20.3	19.8	19.8	19.0	19.7	20.9	21.3
Net of:							
Housing Adjustment	25.5	25.2	25.4	24.6	25.5	26.4	27.5
Income Taxes	23.3	22.7	22.7	23.3	24.0	25.2	24.9
Food Stamps	22.3	21.8	21.6	21.2	22.3	24.4	24.9
School Meals	20.9	20.4	20.3	19.6	20.2	21.4	21.8
WIC	20.4	19.9	19.9	19.1	19.7	21.0	21.3
HEAP	20.3	19.8	19.8	19.0	19.7	20.9	21.3
FICA (Payroll Taxes)	18.5	17.6	17.7	17.0	17.6	18.8	19.5
Commuting	19.0	18.4	18.1	17.5	18.0	19.2	19.5
Childcare	20.1	19.5	19.6	18.8	19.5	20.6	21.1
MOOP	16.9	16.3	15.9	15.8	16.5	18.1	18.3
B. Marginal Effects							
Housing Adjustment	-5.2	-5.4	-5.6	-5.5	-5.8	-5.5	-6.2
Income Taxes	-3.0	-2.9	-2.9	-4.3	-4.3	-4.3	-3.6
Food Stamps	-2.0	-2.0	-1.8	-2.1	-2.7	-3.5	-3.6
School Meals	-0.6	-0.6	-0.5	-0.6	-0.5	-0.5	-0.5
WIC	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
HEAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FICA (Payroll Taxes)	1.8	2.2	2.1	2.0	2.0	2.1	1.8
Commuting	1.3	1.4	1.7	1.5	1.7	1.6	1.7
Childcare	0.2	0.3	0.2	0.2	0.2	0.3	0.2
MOOP	3.4	3.5	3.9	3.2	3.2	2.8	2.9

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

FIGURE II THREE
Marginal Effects of Income Elements on CEO Poverty Rate, 2011
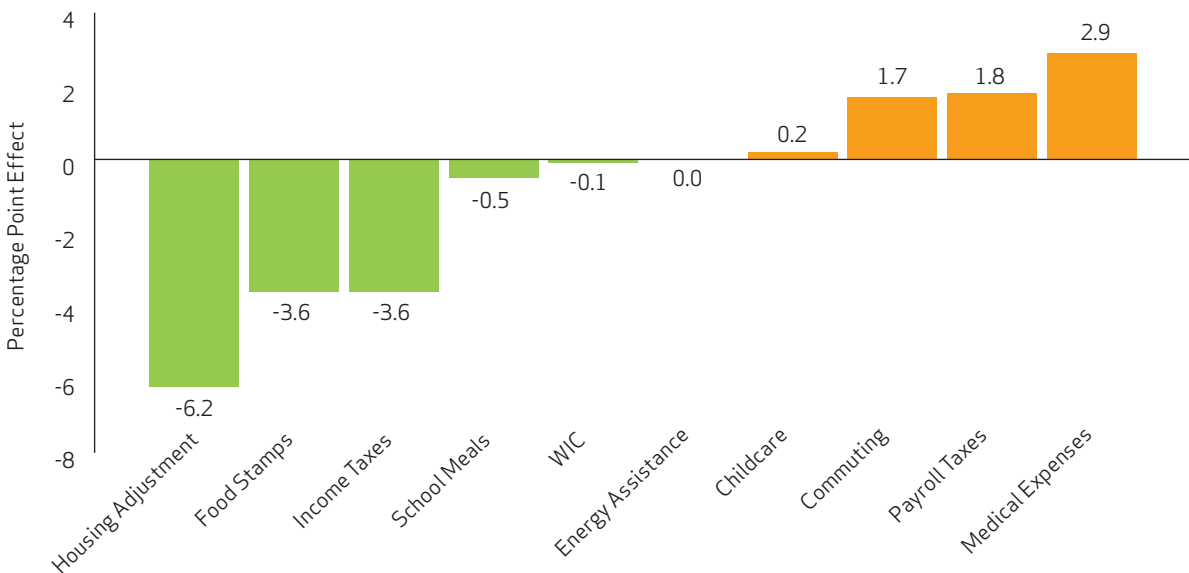
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: See Chapter I for definition of resources.

The growing effectiveness of tax credits and the Food Stamp programs are further explored in Chapter Five.[29] Before turning to these issues, the next chapter explores how poverty rates have changed across demographic groups and the City's five boroughs. This is followed by a comparison of poverty measures in New York City to similar measures for the United States.

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29. Table II Five also indicates a jump in the effect of the housing adjustment from 2010 to 2011. Unlike the changes we have noted for tax programs and Food Stamps, this does not appear to be driven by any change in policy. Rather, as we note in Appendix C, it is a reflection of several factors including a greater share of the population participating in means-tested housing programs in the 2011 versus the 2008 Housing and Vacancy Surveys.

CHAPTER III:
CEO POVERTY RATES IN DEMOGRAPHIC DETAIL, 2005 - 2011

As noted in Chapter One, CEO employs the American Community Survey as our principal data set because it provides a large annual sample of New York City residents, allowing us to track poverty rates for key population groups. This chapter reports poverty rates by demographic characteristic, family composition, work experience, and borough over the 2005 to 2011 period. Where they are statistically significant we note differences between groups, such as the disparity between poverty rates by race and Hispanic ethnicity. The chapter's text and tables also note changes over time. By and large the pattern of change for sub-groups of the City's population parallels the changes described in Chapter Two. Poverty rates fall from 2005 to 2008, then rise in the context of a weak labor market. Because so few of the changes from 2010 to 2011 are statistically meaningful, we focus on changes in poverty rates between 2008 and 2011. (Where there are significant changes from 2010 to 2011, they are noted in the text.) Table III One provides poverty rates by demographic characteristic. Table III Two reports poverty rates by family composition and work experience. Poverty rates by borough are given in Table III Three. Statistically significant changes are identified in the tables with bold type. The final column of each of the tables' rows provides context by giving the sub-group's share of the Citywide population.

3.1 Poverty Rates by Demographic Characteristic of the Individual

When they are statistically significant, changes in poverty rates from 2005 to 2008 and 2008 to 2011 almost always follow the cyclical pattern evident in the Citywide poverty rate. One exception was a rise in poverty among working age adults with some, but less than full-time, year-round work, which rose during the economic expansion. All the statistically significant changes in poverty rates between 2008 and 2011 have been increases.

Poverty Rates by Gender: Females are more likely to live in poverty than males. In 2011, for example, the poverty rate for female New Yorkers was 22.2 percent while it stood at 20.2 percent for their male counterparts. Both male and female poverty rates declined from 2005 to 2008, by 1.1 percentage points and 1.4 percentage points, respectively. From 2008 to 2011, both male and female poverty rates rose, by 2.3 percentage points for males and by 2.2 percentage points for females.

Poverty Rates by Age: Children are poorer than adults. In 2011, the poverty rate for children under 18 was 24.7 percent, significantly higher than the 19.9 percent rate for working-age (18 through 64 years of age) adults and the 22.4 percent rate for elderly (65 and older) adults. All three age groups experienced poverty rate declines from 2005 to 2008. From 2008 to 2011, the poverty rate for children and working-age adults increased by 1.6 percentage points and 3.0 percentage points, respectively.

Poverty Rates for Children by Presence of Parent: Children in single-parent families are almost twice as likely to be in poverty as children living in a two-parent family, 34.7 percent versus 18.7 percent in 2011. The poverty rate for children living with two parents fell from 2005 to 2008, while the poverty rate for children living with only one parent did not decline over this period. Since 2008 the poverty rate for children in two-parent families increased by 3.2 percentage points. The poverty rate for children in single-parent families was unchanged.

Poverty Rates by Race/Ethnicity: In 2011, the poverty rate for Non-Hispanic Whites was 15.4 percent, the lowest rate of any major race/ethnic group in the City. Non-Hispanic Blacks have the City's next lowest poverty rate, 21.4 percent in 2011. The poverty rates for Non-Hispanic Asians and Hispanics are statistically equivalent and are the City's highest, at 26.5 percent and 25.3 percent, respectively in 2011.

From 2005 to 2008, poverty rates declined for Non-Hispanic Whites (by 1.6 percentage points) and for Hispanics (by 2.0 percentage points). The poverty rates for Non-Hispanic Whites, Non-Hispanic Asians, and Hispanics rose from 2008 to 2011, by 2.2 percentage points, 4.1 percentage points, and 1.8 percentage points, respectively. Throughout the 2005 to 2011 period, the poverty rate for Non-Hispanic Blacks has been remarkably stable.

Race/Ethnicity

Race/Ethnicity categories are constructed as follows: First, individuals are categorized by Hispanic ethnicity into Non-Hispanic and Hispanic ethnic groups; Non-Hispanic individuals are then categorized by race. We use three racial categories: White, Black, and Asian. Each only includes persons who identify themselves as members of one racial group. This sorting of the population omits 2.5 percent of the City population that is Non-Hispanic and multi-racial or Non-Hispanic and a member of some other race, such as Native American. We omit this residual category from Table III One.

Poverty Rates by Nativity/Citizenship: The 2011 poverty rate for non-citizens was 28.9 percent, which is significantly higher than poverty rates for both citizens by birth (19.7 percent) and naturalized citizens (19.1 percent). During the 2005 to 2008 economic expansion, only citizens by birth recorded a decline in poverty (of 1.3 percentage points). From 2008 to 2011, citizens by birth and non-citizens experienced poverty rate increases of 2.1 and 4.2 percentage points, respectively.

Poverty Rates for Persons 18 through 64 by Educational Attainment: For working age adults, the probability of being in poverty is inversely proportional to educational attainment. Those with less than a high school education are over three times more likely to be in poverty than those with a bachelor's degree or higher (31.8 percent against 9.4 percent). The 2011 poverty rates for those with a high school degree and some college fell between these two extremes, at 24.6 percent and 16.7 percent, respectively.

Poverty rates by educational attainment were unchanged from 2005 to 2008. From 2008 to 2011, poverty rates rose for working age adults with only a high school degree (by 5.4 percentage points), those with some college (by 3.1 percentage points), and those with at least a bachelor's degree (by 1.8 percentage points).

Poverty Rates for Persons 18 through 64 by Work Experience: Poverty rates vary markedly by work experience. In 2011 the poverty rate for non-elderly adults that worked full-time, year-round was 7.5 percent; for those with no work it stood at 38.7 percent. Working age adults with some work had a poverty rate of 24.4 percent. Working age adults with some work was the only category whose poverty rate rose (3.0 percentage points) during the 2005 to 2008 economic expansion. All three work experience groups saw statistically significant increases from 2008 to 2011. The poverty rate for full-time, year-round workers rose by 1.2 percentage points; the poverty rate for non-elderly adults with some work rose by 1.7 percentage points; and the poverty rate for those with no work rose by 2.4 percentage points.

TABLE III ONE
CEO Poverty Rates for Persons, by Demographic Characteristic, 2005 - 2011

(Numbers are Percent of the Population)

	Year							Percentage Point Change		Group Share of 2011 Pop.
	2005	2006	2007	2008	2009	2010	2011	2005-2008	2008-2011	
Total New York City	20.3	19.8	19.8	19.0	19.7	20.9	21.3	**-1.3**	**2.2**	100.0
Gender										
Males	19.0	18.5	18.3	17.9	18.7	19.7	20.2	**-1.1**	**2.3**	47.5
Females	21.5	21.0	21.2	20.1	20.5	21.9	22.2	**-1.4**	**2.2**	52.5
Age Group										
Under 18	25.0	25.0	25.2	23.1	23.8	25.6	24.7	**-1.9**	**1.6**	21.9
18 through 64	17.8	17.3	17.4	16.9	17.7	19.3	19.9	**-0.9**	**3.0**	66.2
65 and Older	24.1	22.7	22.5	22.7	22.3	21.1	22.4	**-1.5**	-0.3	12.0
Children (under 18), by Presence of Parent										
One Parent	36.7	37.7	37.8	35.5	38.7	37.3	34.7	-1.3	-0.7	37.0
Two Parents	17.4	17.0	17.6	15.6	15.7	19.0	18.7	**-1.8**	**3.2**	63.0
Race/Ethnicity										
Non-Hispanic White	14.8	14.0	14.2	13.2	13.6	15.4	15.4	**-1.6**	**2.2**	33.0
Non-Hispanic Black	20.6	21.6	20.5	20.8	21.1	21.5	21.4	0.1	0.7	22.7
Non-Hispanic Asian	23.4	24.0	25.5	22.4	24.6	26.1	26.5	-1.1	**4.1**	12.8
Hispanic, Any Race	25.5	23.8	24.3	23.5	24.1	24.6	25.3	**-2.0**	**1.8**	28.9
Nativity/Citizenship										
Citizen by Birth	19.0	18.4	18.6	17.7	18.2	19.9	19.7	**-1.3**	**2.1**	62.5
Naturalized Citizen	18.6	18.0	18.2	18.2	18.3	17.8	19.1	-0.4	0.9	19.6
Not a Citizen	26.6	26.3	25.5	24.7	26.6	27.5	28.9	-1.9	**4.2**	17.9
Working Age Adults (18 through 64), by Educational Attainment[1]										
Less than High School	31.8	29.9	29.8	29.8	30.3	31.2	31.8	-1.9	2.0	18.2
High School Degree	20.1	20.7	21.0	19.2	21.1	23.1	24.6	-0.9	**5.4**	25.6
Some College	14.1	13.5	14.5	13.6	14.9	15.6	16.7	-0.5	**3.1**	20.8
Bachelor's Degree or Higher	7.2	6.9	6.9	7.6	7.6	9.2	9.4	0.3	**1.8**	35.4
Working Age Adults (18 through 64), by Work Experience in Past 12 Months[1,2]										
Full-Time, Year-Round	6.4	6.5	6.7	6.3	6.7	7.1	7.5	-0.1	**1.2**	53.1
Some Work	19.7	19.9	20.4	22.7	22.1	23.5	24.4	**3.0**	**1.7**	22.6
No Work	37.5	36.6	36.4	36.3	36.6	38.1	38.7	-1.2	**2.4**	24.3

1. Category excludes people enrolled in school.
2. A change in the 2008 ACS questionnaire regarding work experience affects the comparability of estimates for 2008 and after with those for prior years. See text for definition of work experience categories.
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Differences are taken from unrounded numbers; those in bold type are statistically significant. Shares may not sum to 100 percent due to rounding error or exclusion of small sub-groups in the population.

3.2 Poverty Rates by Family Characteristic

Table III Two provides poverty rates for persons based on the characteristics of the family unit in which they live. As described in Appendix A, "Family," from the perspective of the CEO poverty measure, is a broader concept than that used in the official poverty measure (persons who live together and are related by blood, marriage, or adoption). The CEO "Family" is the "Poverty Unit," persons living together who share costs and resources. This includes related persons, but extends to unmarried partners, their children, and other persons we believe to be economically dependent on other members of the household even if they are not kin. (See Appendix A.)

Panel A in Table III Two begins by categorizing people as living in families headed by a husband-wife/unmarried partner or in a single-head family. A third category is unrelated individuals. Each family-type category includes everyone that is a member of the family. If a husband and wife have two children and two in-laws living with them, for example, then all six family members would be characterized as living in a husband-wife/unmarried partner family. Single heads are "householders" who do not have a spouse or unmarried partner but are living in families, for instance, a single mother with her children.[30] Within each of these family types we distinguish between those that do or do not include children under 18. Because they have been a particular focus of public policy, we also provide the poverty rates for members of single-mother families (households headed by a single female with children under 18) as well as members of all families with children under 18 regardless of the number of parents in the family.

Not everyone is in a family or poverty unit with other persons. Unrelated individuals are people that do not have family members in their household. This would include persons that live alone (the typical case) and some persons living with others, such as roommates or boarders, who we treat as economically independent from the people they live with. Unrelated individuals are one-person poverty units.

Table III Two is organized in a similar fashion to Table III One, reporting poverty rates, the change in the poverty rate, and the group share of the population. The changes in the poverty rates from 2005 to 2008 and 2008 to 2011 in Table III Two are also consistent with the Citywide

pattern. From 2005 to 2008 all the statistically significant changes are declines, with the exception of persons living in families with the equivalent of less than one full-time, year-round worker. All the statistically meaningful changes in the poverty rate from 2008 to 2011 are increases.

Husband-Wife/Unmarried Partner: In 2011, the poverty rate for persons living in husband-wife/unmarried partner families without children under 18 was the lowest of any family type described in Panel A, 13.3 percent. The 2011 poverty rate for husband-wife/unmarried partner families with children was higher at 17.8 percent. Both husband-wife/unmarried partner family types experienced an increase in poverty between 2008 and 2011, with the former group rising by 1.3 percentage points and the latter by 3.5 percentage points.

Single Head: The poverty rate for single-headed households with no child under 18 was 19.8 percent in 2011, well below the 30.9 percent rate for single-headed households with children and the 32.6 percent poverty rate for families in which the single parent is female.[31] Single mother families experienced a statistically significant decline in poverty, of 2.9 percentage points, from 2005 to 2008. Single-head households without children under 18 saw their poverty rate rise by 3.7 percentage points from 2008 to 2011. Much of that increase was due to the rise in the group's poverty rate from 2010 to 2011. Although the 2011 poverty rate for persons living in single-headed families with children was statistically unchanged from 2008, this group did experience a 2.5 percentage point fall in its poverty rate from 2010 to 2011.

All Families with Children: The 2011 poverty rate for persons living in a family with children (a group that includes nearly half the City's population) was 22.4 percent. The trend in this group's poverty rate has been U-shaped. From 2005 to 2008, its poverty rate decreased by 2.1 percentage points. But this was mirrored by an increase of equal magnitude from 2008 to 2011.

Unrelated Individuals: Individuals in one-person "family" units are another high poverty group. In 2011, well over one quarter of this group was poor (28.5 percent). Unrelated individuals did not experience a decline in their poverty rate from 2005 to 2008. But from 2008 to 2011 their poverty rate rose by 2.8 percentage points.

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30. The householder is typically the person in whose name the dwelling is owned or rented.

31. Some 85 percent of single parent families are single mother families.

Work Experience of Family: Panel B in Table III Two groups individuals by the work experience of the family in which they reside. (Work Experience of Family categories are defined in the accompanying text box.)

Poverty rates are steeply graded by levels of work activity, ranging from 4.9 percent for families with the equivalent of two full-time, year-round workers, to 52.0 percent for persons in families with no work in 2011. However, even a considerable level of work does not always spare people from poverty. Consider the one-fourth of the City's population that lives in a family with the equivalent of one full-time, year-round worker; in 2011, over one-in-six (17.3 percent) of persons in this category were poor.

Of the five work experience categories, two experienced a statistically significant change from 2005 to 2008: less than one full-time, year-round (a 4.1 percentage point increase) and no work (a 2.1 percentage point decline). Poverty rates rose from 2008 to 2011 for persons living in families with the equivalent of two full-time, year-round workers (by 0.9 percentage points) and in families with the equivalent of one full-time and one part-time worker (by 1.8 percentage points).

Work Experience of Family

Work Experience of Family categories are constructed by summing the number of hours worked in the prior 12 months by persons 18 and older for each family. Families with over 3,500 hours of work are labeled as having the equivalent of "Two Full-Time, Year-Round Workers." Families with 2,341 through 3,499 hours are labeled "One Full-Time, Year-Round and One Part-Time Worker." Families with at least 1,750 through 2,340 hours are identified as "One Full-Time, Year-Round Worker." Families with at least one hour of work, but less than 1,750 hours, are called "Less than One Full-Time, Year-Round Worker." And finally, there are families that have "No Work."

TABLE III TWO
CEO Poverty Rates for Persons Living in Various Family Types, 2005 - 2011
(Numbers are Percent of the Population)

	Year							Percentage Point Change		Group Share of 2011 Pop.
	2005	2006	2007	2008	2009	2010	2011	2005-2008	2008-2011	
Total New York City	20.3	19.8	19.8	19.0	19.7	20.9	21.3	**-1.3**	**2.2**	100.0
A. Family Composition										
Husband Wife/Unmarried Partner[1]										
No Children under 18	11.7	11.6	12.1	12.0	12.7	12.8	13.3	0.2	**1.3**	21.4
With Children under 18	16.5	15.6	16.5	14.4	14.6	17.8	17.8	**-2.1**	**3.5**	32.3
Single Head of Household										
No Children under 18	16.8	16.4	15.4	16.1	16.5	17.8	19.8	-0.7	**3.7**	11.2
With Children under 18	33.4	33.2	33.1	31.1	34.0	33.4	30.9	-2.3	-0.2	17.3
Single Mother Family	35.7	35.0	35.2	32.8	34.8	35.2	32.6	**-2.9**	-0.2	14.8
All Families with Children under 18	22.4	21.9	22.4	20.3	21.0	23.0	22.4	**-2.1**	**2.1**	49.6
Unrelated Individuals	26.2	25.2	24.0	25.7	26.2	27.2	28.5	-0.5	**2.8**	17.8
B. Work Experience of the Family[2]										
Two Full-Time, Year-Round Workers	4.0	4.3	5.3	3.9	4.1	5.0	4.9	-0.1	**0.9**	31.6
One Full-Time, Year-Round, One Part-Time Worker	12.8	14.6	13.5	12.2	12.4	13.8	14.0	-0.6	**1.8**	15.8
One Full-Time, Year-Round Worker	14.8	14.1	16.1	16.1	16.5	16.3	17.3	1.2	1.2	25.2
Less than One Full-Time, Year-Round Worker	40.5	42.1	40.5	44.6	41.3	45.0	43.3	**4.1**	-1.3	12.3
No Work	52.9	51.8	49.8	50.8	52.1	51.2	52.0	**-2.1**	1.2	15.0

1. In the CEO measure, unmarried partners are treated as spouses. See text for explanation.
2. See text for explanation of work experience categories.
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Differences are taken from unrounded numbers; those in bold type are statistically significant. Shares may not sum to 100 percent due to rounding error. A change in the 2008 ACS questionnaire regarding work experience affects the comparability of estimates for 2008 and later with those for prior years.

3.3 Poverty Rates by Borough

The poverty rate in the Bronx is the highest in the City at 26.0 percent in 2011. Brooklyn, with a poverty rate of 23.9 percent in that year, has the second highest poverty rate. These two boroughs are followed by Queens (21.1 percent), Staten Island (15.3 percent), and Manhattan (14.7 percent). Manhattan was the only borough that saw a decline in its poverty rate (of 2.0 percentage points) from 2005 to 2008. From 2008 to 2011, poverty rates rose for Brooklyn (by 1.6 percentage points), Queens (by 4.8 percentage points), and Staten Island (by 3.9 percentage points).

This pattern of change has lowered the Manhattan poverty rate relative to Queens. In 2005 the two boroughs had statistically similar poverty rates. In 2011 Manhattan's rate was significantly lower than that of Queens. In 2005 Staten Island was the least poor borough in the City. By 2011 its poverty rate was statistically equivalent to Manhattan's. The poverty rate in the Bronx has remained stable from 2005 to 2011.

TABLE III THREE
CEO Poverty Rates by Borough, 2005 - 2011

(Numbers are Percent of the Population)

	Year							Percentage Point Change		Borough Share of 2011 Pop.
	2005	2006	2007	2008	2009	2010	2011	2005-2008	2008-2011	
Bronx	27.2	26.0	24.9	26.2	25.5	25.6	26.0	-1.0	-0.1	16.7
Brooklyn	23.7	23.6	24.1	22.3	23.1	24.4	23.9	-1.3	**1.6**	30.9
Manhattan	15.8	14.8	14.4	13.8	13.6	14.5	14.7	**-2.0**	0.9	19.1
Queens	17.3	17.0	17.3	16.4	17.6	20.0	21.1	-1.0	**4.8**	27.5
Staten Island	12.2	12.3	12.7	11.4	14.7	13.5	15.3	-0.8	**3.9**	5.7

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Differences are taken from unrounded numbers; those in bold type are statistically significant.
Shares may not sum to 100 percent due to rounding error.

CHAPTER IV:
ALTERNATIVE POVERTY MEASURES IN THE U.S. AND NEW YORK CITY

As the Introduction noted, CEO made a number of revisions to our methodology in light of the development of the Federal Supplemental Poverty Measure (SPM). The revisions make use of recent research to improve our measure.[32] Another important motive is to make the CEO poverty rates more comparable to those provided by the Census Bureau's new approach. Numbers become more meaningful when they are given context; now we can compare our portrait of poverty in the City to a U.S.-wide picture.

This chapter compares some of the principal findings in the Census Bureau's most recent report on the Supplemental Poverty Measure with our findings for New York City. The Bureau's report provided comparisons between the new SPM and the official poverty rates for the U.S., much as we have done with the CEO measure in Chapters I and II. We find that the pattern of differences between the official and National Academy of Sciences (NAS)-style poverty rates in the nation and the City are quite similar. Changes in the SPM and CEO poverty rates from 2010 to 2011 are also alike. The only notable difference between the CEO and SPM estimates lies in the absolute magnitude of their differences from the official measure. This is primarily a result of the geographic adjustment of the CEO poverty threshold. For 2011, the CEO threshold is $30,945 while the U.S.-wide SPM threshold is $24,999.

4.1 Poverty Rates by Age Group

Given the focus that policymaking has had on children, differences in poverty rates by age group are a particularly important set of comparisons. Table IV One provides 2011 poverty rates by age using the official and NAS-style measures. Panel A reports these for the U.S.[33]

The table's Panel B provides the New York City data. Differences between the official and SPM measures for the nation and differences between the official and CEO measures for the City follow the same pattern. The poverty rates for the total population using the alternative measures exceed the poverty rates using the official measure. For the U.S., the difference is 1.0 percentage points while the City's difference is 2.0 percentage points.

Another important difference between the official and alternative poverty measures – common to the City and the nation – is that, despite the higher poverty rate overall, the alternative measures yield poverty rates for children that are below the official poverty rates. The U.S. SPM poverty rate for children is 18.1 percent, 4.2 percentage points below the official rate of 22.3 percent. The New York City CEO poverty rate for children is 24.7 percent, 4.0 percentage points below the official rate of 28.7 percent. The lower poverty rate for children using the NAS-style poverty measures is a result of their more inclusive account of resources. The alternative measures capture the effect of tax credits and in-kind benefits, many of which are targeted toward families with children.[34]

Poverty is also markedly more prevalent among the elderly using the two NAS-style measures than it is under the official measure. This is primarily a result of the alternative measures' deduction of medical out-of-pocket expenditures (MOOP) from their measure of income. Without this deduction the NAS-based measures would yield poverty rates that are quite close to those from the official measure. For the U.S. SPM, the poverty rate for persons 65 and older would be 8.0 percent in 2011, close to the 8.7 percent derived from the official methodology. For the CEO measure, the 2011 elderly poverty rates net of MOOP is 17.1 percent while the official poverty rate is 17.5 percent.[35]

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32. See Appendices for details.

33. The U.S.-level poverty rates cited in this chapter are taken from Short, Kathleen. *The Research Supplemental Poverty Measure: 2011.* U.S. Bureau of the Census. November 2012. Available at: www. census.gov/hhes/povmeas/methodology/supplemental/research/Short_ResearchSPM2011.pdf

34. Although the SPM and CEO poverty rates for children are lower than the official rates, both the SPM and CEO child poverty rates exceed those of working age and elderly adults.

35. See Short, Table 3A, and Appendix H in this report for details about our model for estimating MOOP and for the impact of MOOP on the poverty rate.

TABLE IV ONE

Comparison of Poverty Rates by Age Group Using Different Measures, 2011

(Numbers are Percent of the Population.)

A. United States

	Official	SPM	Percentage Point Difference
Total	15.1	16.1	**1.0**
Under 18	22.3	18.1	**-4.2**
18 through 64	13.7	15.5	**1.8**
65 and Older	8.7	15.1	**6.4**

B. New York City

	Official	CEO	Percentage Point Difference
Total	19.3	21.3	**2.0**
Under 18	28.7	24.7	**-4.0**
18 through 64	16.5	19.9	**3.4**
65 and Older	17.5	22.4	**4.9**

Sources: U.S. Bureau of the Census and American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Differences are measured in percentage points and are taken from unrounded numbers; those in bold type are statistically significant.

4.2 Extreme Poverty

In Chapter Two we noted that the proportion of the population living in extreme poverty (below 50 percent of the poverty line) is smaller under the CEO poverty measure than it is with the official measure. Table IV Two reports extreme poverty rates for the U.S. and New York City by age. For the nation, as for the City, a smaller fraction of the population is in extreme poverty using the alternative poverty measure. For the U.S. as a whole the difference is 1.5 percentage points, not unlike the 2.3 percentage point difference in New York City. The pattern of differences across the age groups is also quite similar. For the nation and the City, the largest difference between the official and alternative measures of extreme poverty is for children, 5.2 percentage points and 7.6 percentage points, respectively. Differences between the measures for working age adults are more modest: 0.8 percentage points for the U.S. and 1.1 percentage points for New York City.

This pattern of lower rates of extreme poverty with the alternative measures, however, is reversed for the elderly. The alternative measures find a higher incidence of extreme poverty for persons 65 and older than do the official measures. For the U.S., the SPM extreme poverty rate is 2.0 percentage points above the official rate. For the City, the CEO extreme poverty rate for the elderly is 0.9 percentage points above the official rate.

TABLE IV TWO

Comparison of Extreme Poverty Rates by Age Group Using Different Measures, 2011

(Numbers are Percent of the Population.)

A. United States

	Official	SPM	Percentage Point Difference
Total	6.7	5.2	**-1.5**
Under 18	10.3	5.1	**-5.2**
18 through 64	6.3	5.5	**-0.8**
65 and Older	2.3	4.3	**2.0**

B. New York City

	Official	CEO	Percentage Point Difference
Total	7.9	5.6	**-2.3**
Under 18	12.8	5.2	**-7.6**
18 through 64	7.1	5.9	**-1.1**
65 and Older	3.5	4.4	**0.9**

Sources: U.S. Bureau of the Census and American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Differences are measured in percentage points and are taken from unrounded numbers; those in bold type are statistically significant.

4.3 Changes in the SPM and CEO Poverty Rates, 2009-2011

The Census Bureau's report provides poverty rates for 2009-2011. Table IV Three reproduces the Bureau's estimates for these years along with comparable data for New York City. From 2009 to 2011, the SPM rose by 0.9 percentage points, while the CEO poverty rate climbed by 1.6 percentage points. Poverty rates derived from these measures increased by 0.9 percentage points for children in the U.S. and by 0.8 percentage points for children in New York City (though the latter number was not statistically significant). For working age adults the poverty rates increased (1.0 percentage points in the U.S. and 2.2 percentage points in New York City). Changes in the poverty rates for the elderly were not statistically significant in either the nation or the City.

TABLE IV THREE
Change in Poverty Rates, U.S. SPM and NYC CEO, 2009 - 2011

(Numbers are Percent of the Population.)

A. United States, SPM

	2009	2010	2011	Percentage Point Change 2009 - 2011
Total	15.2	16.0	16.1	**0.9**
Under 18	17.2	18.0	18.1	**0.9**
18 through 64	14.5	15.2	15.5	**1.0**
65 and Older	14.9	15.8	15.1	0.2

B. New York City, CEO

	2009	2010	2011	Percentage Point Change 2009 - 2011
Total	19.7	20.9	21.3	**1.6**
Under 18	23.8	25.6	24.7	0.8
18 through 64	17.7	19.3	19.9	**2.2**
65 and Older	22.3	21.1	22.4	0.1

Sources: U.S. Bureau of the Census and American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Changes are measured in percentage points and are taken from unrounded numbers; those in bold type are statistically significant.

At the time of writing, the Census Bureau's Supplemental Poverty Measure remains a research project. Its initial reports have been limited in scope and detail. The SPM, furthermore, cannot be released at the same time as the official poverty rate because the Census Bureau and Bureau of Labor Statistics lack the resources to move the measure to full production mode. Perhaps the most serious limitation of the Census Bureau's work, from the perspective of New York City, is its lack of geographic specificity. Its 2012 report included state-level SPM poverty rates using a three-year moving average of data from the Current Population Survey. But as the report noted, Census recommends use of the American Community Survey (ACS) for state and sub-state poverty estimates. Until Census has the capacity to extend the SPM to the ACS, there will be few opportunities to compare poverty in New York City with poverty in other major cities in the nation. These limitations are a consequence of Congress's failure to provide the necessary funding.[36] The several million dollars that are required to enhance a major improvement in one of the nation's most important social indicators would be a wise investment.

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36. Short, Kathleen. *The Research Supplemental Poverty Measure: 2011.* U.S. Bureau of the Census. November 2012.

CHAPTER V: POLICY AFFECTS POVERTY

Chapter II noted the increased effect of income tax credits and the Food Stamp program on the CEO poverty rate since 2008. The larger effects were not only a reflection of an increase in program participation due to the economic downturn; they also resulted from deliberate policy choices. In response to the nationwide recession in late 2007, Federal policymakers took a variety of initiatives to stimulate the economy. These included programs that promoted consumer spending by directly bolstering family incomes. Often the initiatives targeted families that already were, or were in danger of becoming, poor. The expansion of Unemployment Insurance benefits, new and increased tax credit programs, and an increase in Food Stamp benefit levels fall into this category. With the exception of Unemployment Insurance, none of these income-supporting programs are reflected in the official poverty measure. Their absence explains why there was a sharp decline in pre-tax cash income from 2008 to 2010 (the resource measure used in the official poverty rate) while income in CEO's more inclusive definition (which accounts for all these programs) did not fall. The different trajectories of these two measures of income are also evident in the most recent data; from 2010 to 2011, pre-tax cash income was statistically unchanged, while CEO income rose by 2.5 percent.[37]

The purpose of this chapter is to measure the extent to which the expansion of the tax credit and Food Stamp programs offset what would have otherwise been a much sharper drop in income and an even more dramatic increase in the poverty rate. We do this by creating estimates of what Food Stamp benefits and tax programs would have contributed to family income in the absence of the new policies. These hypothetical (what would have happened) estimates can be compared against what actually did happen, allowing us to isolate the policy effects.

The first section of the chapter begins with an overview of the tax policy changes in the Bush and Obama stimulus programs. It then isolates the effect of the new tax credit programs. A second section measures the effect of the increased Food Stamp benefit levels and the City's outreach effort. Next, we compare estimates of CEO income absent the influence of the new policies against actual CEO income. We find that at the 20th percentile, CEO income would have fallen by 2.1 percent from

2008 to 2010 without the new policies. Over the same period, actual CEO income held steady from 2008 to 2010 and then rose from 2010 to 2011 by 2.5 percent. The difference in these income trends creates a much steeper rise for a hypothetical CEO poverty rate compared against the actual one; had it not been for the policy initiatives, the New York City poverty rate would have reached 23.6 percent in 2011 rather than 21.3 percent.

5.1 Measuring the Effects of New and Expanded Tax Credits

In February 2008, President Bush signed the Emergency Economic Stimulus Act. The act included or extended three income tax initiatives relevant to our poverty measure:

- The Economic Recovery Tax Rebate (Recovery Rebate), which provided up to $1,200 to married couple filers and $600 to individual filers. The Recovery Rebate was given to everyone that completed a 2007 tax return.[38]

- An additional standard deduction for real estate taxes that allowed filers to increase their standard deduction by the amount they pay in state and local property taxes, by up to $1,000 for married couple filers and $500 for single filers.

- A lower minimum income eligibility threshold for the Additional Child Tax Credit.

A year later, President Obama signed the American Recovery and Reinvestment Act (ARRA). The ARRA included:

- A continuation of the standard deduction for real estate taxes and a further expansion of the Additional Child Tax Credit.

- The establishment of a Making Work Pay (MWP) tax credit that provides a refundable $800 credit per worker, designed to offset payroll taxes in 2009 and 2010.

- An Economic Recovery Payment (ERP): a one-time $250 payment in 2009 to recipients of Social Security, Supplemental Security Income, Railroad Retirement benefits, and veteran's disability compensation.

- An expansion of the Earned Income Tax Credit (EITC) to include a third tier of benefits for families with three or more children. In addition, the maximum income for married couples to remain eligible for the credit increased.

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37. See Table II Two.

38. The CEO tax model assumes that all rebates were received in 2008.

• A change in college tuition tax credits to make them partly refundable.

The ARRA was followed by the Tax Relief Act of 2010 and Job Creation Act of 2010. This legislation extended the Child Care, Child Tax, Refundable Child Tax, and EITC expansions through 2012. The MWP credit was allowed to expire at the end of 2010. In its place all wage and salary earners received a Payroll Tax Cut (PTC), a two percentage point reduction in their FICA payroll tax rate. The 2010 income tax extensions were either made permanent or continued to 2017 under the American Taxpayer Relief Act (ATRA) of 2012. The PTC, however, expired at the end of 2012.

To illustrate the connection between tax policy and the poverty rate we focus on low-income tax filers – those with Federal adjusted gross income (AGI) no higher than $50,000 – that have dependents. Table V One shows mean tax program amounts for the roughly 790,000 filers in this group.[39] Panel A, labeled "Actual," contains CEO estimates for the years 2007-2011 and the percentage change over that time period. Panel B, labeled "Hypothetical," shows what the mean values would have been absent the changes in tax policy from 2008 through 2011, and the percentage change from actual 2007 to hypothetical 2011. Both panels show specific tax programs as well as a summary of tax liabilities and credits.

The average, per filer, addition to income after credits are applied against liabilities is found on the line, "Net Income Tax Effect." The total value of gains from net taxes across all filers is shown in the next line, "Sum of Net Income Tax Effect." The last two lines of each panel, "FICA Mean" and "FICA Total," illustrate the effect of the PTC implemented in 2011. Panel A shows the mean and total FICA payments after the tax cut, while Panel B shows what FICA payments would have been in the absence of a payroll tax cut.

The panels begin with Federal, State, and City Earned Income Tax Credits (EITC). The values in the panels diverge in 2009 as changes in EITC policy occur. Over the five years displayed in Panel A, the Federal EITC grew by 31.2 percent. Because they are percentages of the Federal Credit, the State and City EITC grew at a nearly identical pace. The remaining rows in the panel highlight other tax initiatives in this time period. The Making Work Pay credit, for example, generated an average tax credit of $464 in 2010.

The "Summary of Tax Effect" portion of Panel A makes two key points. First, tax liabilities declined as incomes shrank in the economic downturn. Second, the total of Federal, State, and City tax credits increased as stimulus programs responded to the decline in income. Total credits expanded by 28.6 percent from 2007 to 2011, and the Net Income Tax Effect increased by 60.3 percent. The only decline in credits occurred at the City level as a result of a decrease in the School Tax Credit (STAR) in 2009. Panel B shows what would have happened absent the tax policy changes that began in 2008. A smaller EITC combined with a lack of other stimulus credits generates a growth of only 20.5 percent in the Net Income Tax Effect.

A final difference between the actual and the hypothetical scenario is the amount of FICA taxes owed. The annual FICA tax payment is, on average, $418 less for taxpayers after the FICA cuts were implemented in 2011 ($1,318 for actual compared to $1,736 for hypothetical). The sum of FICA payments in Panel A (roughly $1 billion) is $323 million less than the sum in Panel B (over $1.3 billion).[40]

Tax credits under the stimulus program did not simply become more generous. The new policies also raised income eligibility ceilings in several cases, increasing the pool of filers who could claim the credit. Unemployed filers are not eligible for the wage-based EITC, but raising the income limit to claim the credit makes the EITC available to a greater number of wage earners. We see this effect in the Addendum to Table V One. The loss of filers who could no longer qualify for the EITC because they were jobless was more than offset by the increase in newly eligible EITC claimants near the top of the $50,000 AGI range.

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39. This is the number of filers estimated by CEO for 2011. Means are the total value of the tax item for this group of filers divided by number of filers in this group.

40. FICA payments in Table V One are shown with a negative sign to indicate they are a subtraction from the net income tax effect.

TABLE V ONE

Actual and Hypothetical Tax Program Effects, 2007 - 2011
Filers with Dependents and Federal AGI up to $50,000

(Numbers are Means for All Filers in this Group, Except Where Specified)*

A. Actual						Percentage Change
Selected Credits	2007	2008	2009	2010	2011	2007-2011
Federal EITC	$1,709	$1,803	$2,077	$2,160	$2,242	31.2%
State EITC	$488	$517	$598	$623	$648	32.8%
City EITC	$85	$90	$104	$108	$112	31.8%
Recovery Rebate	N.A.	$907	N.A.	N.A.	N.A.	N.A.
Making Work Pay	N.A.	N.A.	$459	$464	N.A.	N.A.
Summary of Tax Effect						
Total Pre-Credit Liability	$1,679	$1,664	$1,692	$1,577	$1,543	-8.1%
Federal Credits	$2,540	$3,632	$3,819	$3,868	$3,507	38.1%
State Credits	$797	$826	$898	$915	$949	19.1%
City Credits	$287	$289	$198	$200	$206	-28.2%
Total Credits	$3,624	$4,747	$4,915	$4,983	$4,662	28.6%
Net Income Tax Effect	$1,945	$3,083	$3,223	$3,406	$3,118	60.3%
Sum of Net Income Tax Effect (in $1,000s)	$1,530,173	$2,408,249	$2,502,095	$2,593,790	$2,423,820	58.4%
FICA Mean	N.A.	N.A.	N.A.	N.A.	-$1,318	
Sum of FICA (in $1,000s)	N.A.	N.A.	N.A.	N.A.	-$1,024,462	

B. Hypothetical						Percentage Change
Selected Credits	2007	2008	2009	2010	2011	2007-2011
Federal EITC	N.A.	$1,803	$1,929	$2,024	$2,090	22.3%
State EITC	N.A.	$517	$554	$582	$603	23.6%
City EITC	N.A.	$90	$97	$101	$105	23.5%
Recovery Rebate	N.A.	$0	N.A.	N.A.	N.A.	N.A.
Making Work Pay	N.A.	N.A.	$0	$0	N.A.	N.A.
Summary of Tax Effect						
Total Pre-Credit Liability	N.A.	$1,670	$1,684	$1,554	$1,530	-8.9%
Federal Credits	N.A.	$2,629	$2,640	$2,669	$2,746	8.1%
State Credits	N.A.	$832	$877	$898	$929	16.6%
City Credits	N.A.	$289	$190	$193	$198	-31.0%
Total Credits	N.A.	$3,750	$3,707	$3,760	$3,873	6.9%
Net Income Tax Effect	N.A.	$2,080	$2,023	$2,205	$2,343	20.5%
Sum of Net Income Tax Effect (in $1,000s)	N.A.	$1,625,107	$1,587,635	$1,709,155	$1,842,361	20.4%
FICA Mean	N.A.	N.A.	N.A.	N.A.	-$1,736	
Sum of FICA (in $1,000s)	N.A.	N.A.	N.A.	N.A.	-$1,365,074	

Addendum
Percent of Filers Receiving Earned Income Tax Credit**

	2007	2008	2009	2010	2011	Percentage Point Change 2007-2011
A. Actual	72.9%	74.8%	77.6%	80.7%	81.1%	8.2
B. Hypothetical	N.A.	74.8%	75.5%	78.9%	79.4%	6.5

*Means are aggregated values of each tax item divided by number of filers with income up to $50,000 and dependents.
**CEO's model assumes all Federal EITC claimers get State and City EITC.
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: N.A. - Not applicable in that tax year. Percentage change in hypothetical value is the change from Actual 2007 to Hypothetical 2011.

5.2 Measuring the Effect of Changes in Food Stamp Policy

Federal and local Food Stamp policy changed in two important ways since 2007: 1) a 13.6 percent increase in Food Stamp benefits included in the 2009 ARRA; and 2) an outreach initiative in New York City aimed at increasing program participation among eligible households. In order to identify the impact of these changes on CEO income and the CEO poverty rate, we separate them from the increase in Food Stamp benefit levels that would have occurred without the ARRA and from the growth in Food Stamp participation that would have occurred simply because of the deteriorating condition of the City labor market.

We do this by creating a hypothetical data series to go along with the actual ACS data.[41] In the hypothetical estimates, we first assume that Food Stamp benefit levels would have grown as prescribed by pre-ARRA Federal law. The mean Food Stamp benefit (per Food Stamp case) is shown in Table V Two. We find that actual Food Stamp benefit levels grew by 43.6 percent from 2007 to 2011. Without the ARRA, benefits per case would have been only 25.0 percent higher.[42]

We also constructed hypothetical estimates for the growth rate of the Food Stamp caseload, based on the historical relationship between program participation and labor market conditions. This data approximates the growth of caseloads absent the outreach effort and increase in benefit levels.[43] The actual Food Stamp caseload grew by 50.5 percent from 2007 to 2011. Absent the policy initiatives, the number of cases would have grown by 42.6 percent. Overall, these policies increased the aggregate level of Food Stamp benefits by over $600 million in 2011, compared with the hypothetical estimate.

TABLE V TWO
Actual and Hypothetical Food Stamp Estimates, 2007 - 2011

A. Actual

	2007	2008	2009	2010	2011	Percentage Change 2007-2011
Food Stamp Cases	695,494	771,225	873,127	1,025,575	1,046,968	50.5%
Mean Benefit per Case	$1,978	$1,966	$2,391	$2,774	$2,840	43.6%
Aggregate Benefits*	$1,290,000	$1,440,000	$2,005,275	$2,713,824	$2,860,000	121.7%

B. Hypothetical

	2007	2008	2009	2010	2011	Percentage Change 2007-2011
Food Stamp Cases	N.A.	751,974	836,576	968,153	991,639	42.6%
Mean Benefit per Case	N.A.	$1,968	$2,009	$2,406	$2,472	25.0%
Aggregate Benefits*	N.A.	$1,386,830	$1,619,758	$2,115,810	$2,259,314	75.1%

* In thousands.
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Percentage change in Panel B is the change from actual 2007 to hypothetical 2011.
N.A. - Not applicable because hypothetical not calculated in that year.

41. See Appendix E for a detailed description of the methods used to construct the hypothetical data.

42. Readers should bear in mind that the change in benefit levels reflects differences in the composition of the Food Stamp caseload as well as changes in the law.

43. A more generous benefit level would, all else equal, increase the Food Stamp participation rate.

5.3 Policy Affects Income

Our hypothetical estimates of tax and Food Stamp policy can be utilized to generate a hypothetical measure of CEO income. Table V Three reports CEO income from 2007 to 2011, and the percentage change from 2008 to 2010 and 2010 to 2011. As in Table II Two in Chapter II, incomes are stated at the family level and adjusted for family size and composition. Because our interest is in families vulnerable to poverty, we provide estimates here for the lower tail of the income distribution, below the 35th percentile. As in the previous tables, the data are displayed in two panels: A, which reports actual CEO income, and B, which shows CEO income absent the policy changes. For any given percentile the actual CEO incomes are higher than their hypothetical counterparts;

less generous tax credits and lower Food Stamp benefits translate into lower CEO income. At the 20th percentile of their respective distributions, for example, actual income was $1,491 higher than hypothetical income in 2011, $30,195 against $28,704.

The difference between actual and hypothetical incomes, it should be noted, has not been constant over the 2008 to 2011 period. Figure V One illustrates the difference between these two income measures at the 20th percentile. It jumps from $911 in 2008 to $1,496 in 2009 and then plateaus, suggesting that the Obama tax programs along with changes in the Food Stamp program had a greater effect on low-income families than the Bush tax initiatives.

TABLE V THREE

Actual and Hypothetical CEO Incomes, 2007 - 2011

A. Actual						Percentage Change	
Percentile	2007	2008	2009	2010	2011	2008-2010	2010-2011
15	$23,720	$25,867	$26,030	$25,732	$26,525	-0.5%	3.1%
20	$27,108	$29,417	$29,483	$29,465	$30,195	0.2%	2.5%
25	$30,102	$32,641	$32,439	$32,779	$33,403	0.4%	1.9%
30	$33,171	$35,758	$35,416	$35,835	$36,283	0.2%	1.3%
35	$36,224	$39,075	$38,596	$38,676	$39,312	-1.0%	1.6%

B. Hypothetical						Percentage Change	
Percentile	2007	2008	2009	2010	2011	2008-2010	2010-2011
15	N.A.	$24,949	$24,569	$24,222	$25,008	-2.9%	3.2%
20	N.A.	$28,506	$27,987	$27,904	$28,704	-2.1%	2.9%
25	N.A.	$31,644	$31,029	$31,240	$31,775	-1.3%	1.7%
30	N.A.	$34,498	$33,977	$34,256	$34,642	-0.7%	1.1%
35	N.A.	$37,777	$37,198	$37,169	$37,676	-1.6%	1.4%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: N.A. - Not applicable because hypothetical values were not calculated for 2007. Incomes are stated in family size and composition-adjusted dollars.
Percentage change in hypothetical panel for 2008-2011 is from actual 2008 to hypothetical 2011; change for 2010-2011 is from hypothetical to hypothetical value.

Difference Between Actual and Hypothetical CEO Income, 2008 - 2011
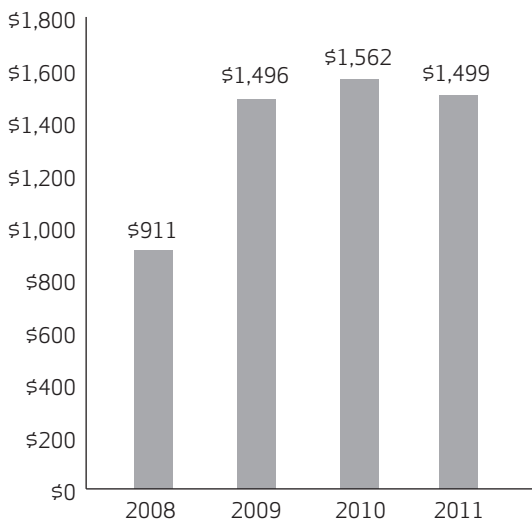
Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Incomes are measured in family size and composition-adjusted dollars at the 20th percentile of their respective distributions.

From 2008 to 2010, the period in which employment rates and earnings were falling, actual CEO income at the 20th percentile was unchanged. Hypothetical income fell; had it not been for the changes in tax and the Food Stamp program, CEO income would have declined at the 20th percentile, by 2.1 percent. From 2010 to 2011, the increases in the two income measures are nearly identical, by 2.5 percent for actual income and 2.9 percent for hypothetical income.

Figure V Two traces the path of actual and hypothetical CEO incomes over the 2007 to 2011 period. Each income is measured relative to actual income in 2007, the year prior to the first round of Federal stimulus programs. From 2007 to 2008 the two income measures rise; the recession had yet to come to the City and earnings were growing. The increase for hypothetical income is smaller than the actual increase in CEO income because it does not include the effect of the Bush stimulus programs. From 2008 to 2010 actual income held steady. By contrast, hypothetical income registers declines. Both CEO income measures increased from 2010 to 2011.

Comparison of Income Measures, 2007 - 2011
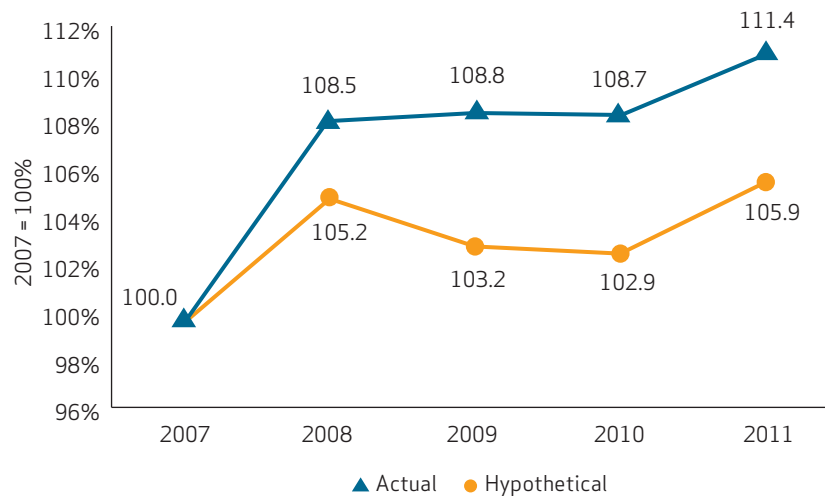
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

5.4 Policy Affects Poverty

The hypothetical income estimates we have developed can be used to create hypothetical CEO poverty rates. They tell us what the poverty rate would have been absent the increases in tax credits and Food Stamp initiatives. Panels A and B in Table V Four report actual and hypothetical poverty rates from 2007 through 2011. As in Table II Five, the marginal effects of tax and Food Stamp programs are also shown. We also show the marginal effects of the payroll (FICA) tax, and the combined effect of income and payroll taxes. The marginal effects are calculated by taking the difference between poverty rates derived from total CEO income and poverty rates based on CEO income without taxes and food stamps, respectively.

In 2011, income tax programs lifted 3.6 percent of the City population above the poverty line. This was the lowest marginal effect of tax relief since stimulus programs began in 2008, reflecting the expiration of several stimulus-related tax credits.[44] Had the stimulus programs never been implemented, the marginal effect of tax relief would have been even smaller, bringing only 2.7 percent of the population above the poverty threshold.

The recent decline in the effect of income tax credits on the actual poverty rate is offset by the cut in the FICA tax rate. FICA raised the actual poverty rate by 2.1 percentage points in 2010, but by only 1.8 percentage points in 2011. As Panel B indicates, without the 2011 rate cut FICA would have increased the poverty rate by 2.7 percentage points. The net effect of both forms of taxation on the actual poverty rate in 2011 is a 2.1 percentage point reduction, essentially the same as the 2.0 percentage point reduction for 2010. The combined effect of the tax programs absent the policy changes would have been a mere 0.6 percentage points.

The Food Stamp program had the same effect as income tax credits in 2011, also lifting 3.6 percent of the City population above the poverty line. In the absence of the expansion of the Food Stamp program, its marginal effect would have been a more modest 3.2 percent.

Actual and Hypothetical CEO Poverty Rates, 2007 - 2011

(Numbers are Percent of the Population)

A. Actual

	2007	2008	2009	2010	2011
Poverty Rates					
Total CEO Income	19.8	19.0	19.7	20.9	21.3
Net of:					
Income Taxes	22.7	23.3	24.0	25.2	24.9
Payroll Taxes	17.7	17.0	17.6	18.8	19.5
Combined Taxes	20.5	21.2	21.9	22.9	23.4
Food Stamps	21.6	21.2	22.3	24.4	24.9
Marginal Effects					
Income Taxes	-2.9	-4.3	-4.3	-4.3	-3.6
Payroll Taxes	2.1	2.0	2.1	2.1	1.8
Combined Taxes	-0.7	-2.2	-2.2	-2.0	-2.1
Food Stamps	-1.8	-2.1	-2.6	-3.5	-3.6

B. Hypothetical

	2007	2008	2009	2010	2011
Poverty Rates					
Total CEO Income	N.A.	20.5	22.0	23.2	23.6
Net of:					
Income Taxes	N.A.	23.3	24.6	25.9	26.3
Payroll Taxes	N.A.	18.2	19.6	21.0	20.9
Combined Taxes	N.A.	21.2	22.4	23.6	24.2
Food Stamps	N.A.	22.6	24.2	26.1	26.8
Marginal Effects					
Income Taxes	N.A.	-2.8	-2.6	-2.7	-2.7
Payroll Taxes	N.A.	2.3	2.4	2.2	2.7
Combined Taxes	N.A.	-0.7	-0.4	-0.4	-0.6
Food Stamps	N.A.	-2.1	-2.2	-2.9	-3.2

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: N.A. - Not applicable because hypothetical values were not calculated for 2007.

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44. See Appendix D for details regarding the timing of the various tax credit initiatives.

Figure V Three summarizes our analysis of the effects of policy on poverty. Both actual CEO and hypothetical CEO poverty rates are plotted for the years 2007-2011. The actual CEO poverty rate fell from 2007 to 2008, while the hypothetical rate rose. This was primarily due to Bush Administration tax initiatives. From 2008 to 2011, both rates have an upward trend. But the actual CEO poverty rate increases less than one percentage point from 2008 to 2009, an effect of the many stimulus credits enacted in the Obama Recovery Act; by contrast, the hypothetical rate increases 1.5 percentage points. From 2009 to 2011, both poverty measures increase at the same rate but the actual CEO poverty rate, at 21.3 percent, is a full 2.3 percentage points lower than the hypothetical rate of 23.6 percent at the end of this period.

FIGURE V THREE
Actual and Hypothetical CEO Poverty Rates, 2007 - 2011
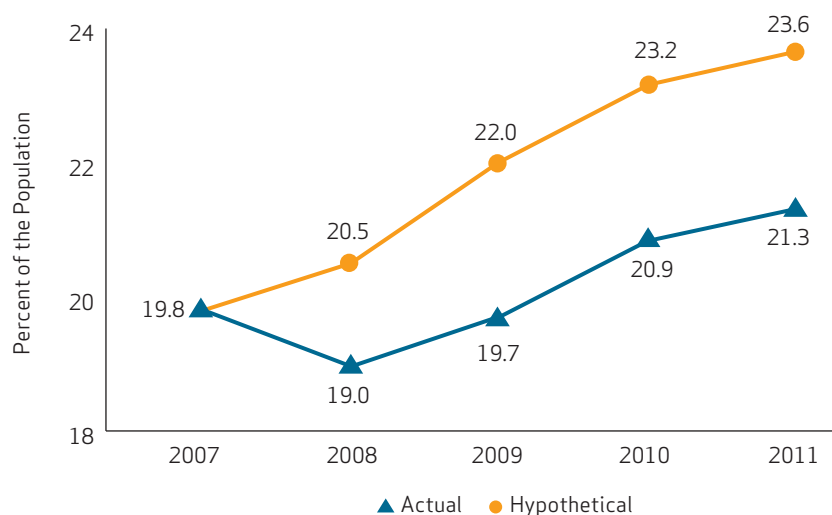
Source: American Community Survey Public Use Micro Sample as augmented by CEO.

CHAPTER VI:
IN CONCLUSION

This report marks a turning point. CEO's two prior annual reports on poverty in New York City documented the growing importance of the social safety net at a time when the job market was contracting and earned income was in decline. For many low-income families, the distance between their earnings and the poverty threshold widened. At the same time, the safety net expanded, filling some, but not all, of the gap. As a consequence, from 2008 to 2010, the poverty rate rose. It would be too simple, we have pointed out, to cite this increase as evidence that the Federal and City responses to the recession were failures. Our work also demonstrated how much higher the poverty rate would have climbed in the absence of the expansion of tax programs and Food Stamp benefits.

The 2011 data we presented in this report coincide with a shift in the economic and policy environments. After a two-year fall, the proportion of working age New Yorkers holding a job rose. Although earned income did not rise for families in the bottom half of the distribution, its sharp decline was arrested. The trend in earnings, coupled with expanded tax initiatives (especially the payroll tax cut in 2011) and a continuing increase in enrollment in the Food Stamp program, pushed our broadest measure of family resources – CEO income – higher. The increase was large enough to offset the year-to-year rise in the CEO threshold. As a result, the 2011 CEO poverty rate was statistically unchanged from the prior year. Looking ahead, there is good reason to expect that the 2012 American Community Survey will reveal further gains in jobholding, increasing the likelihood that a leveling off of the poverty rate in 2011 could be followed by a fall in 2012, all else equal.

But the turning point in the job market is not the only change we need to note. Along with the end of the slump in the job market is the end of the recession-related expansion of the safety net. Food Stamp benefit levels have not increased since 2009 and, as a result of legislation enacted in 2010, they will be reduced on November 1, 2013.[45] Some of the economic stimulus-related income tax credit programs expired at the end of 2010. The number of weeks that Unemployment Insurance is available to the long-term jobless was cut in 2012. The reduction in the payroll tax rate expired at the end of 2012.

The sequester – the cuts in Federal government spending that began on March 1, 2013 – also threatens programs important to low-income Americans. Unemployment Insurance benefit levels for the long-term jobless who are receiving Federally-funded benefits could fall by 11 percent.[46] The Center on Budget and Policy Priorities estimates that between 575,000 and 750,000 women and children will be denied WIC benefits by the end of the current Federal fiscal year.[47] Funding for Federal housing programs, the backbone of the means-tested housing assistance so vital to low-income New Yorkers, will also suffer stiff reductions.[48]

In sum, the dynamic that spurred, but also limited, the recent rise in poverty – declining earnings buffered by an expanded safety net – is shifting. In the context of political stalemate and a policy environment that is focused on reducing the Federal budget deficit, progress in reducing poverty will depend to a large degree on a rising economic tide lifting enough boats. Progress will also rest on the continued efforts by City policymakers to build "on-ramps" to the job market for those groups of New Yorkers that prosperity so often leaves behind.

45. Dean, Stacey and Dorothy Rosenbaum. *SNAP Benefits Will Be Cut for All Participants in November 2013*. Center on Budget and Policy Priorities. February 8, 2013. Available at: www.cbpp.org/files/2-8-13fa.pdf

46. *The Sequester's Devastating Impact on Families of Unemployed Workers and the Struggling Unemployment Insurance System*. National Employment Law Project. Briefing Paper. February 27, 2013. Available at: http://www.nelp.org/page/-/UI/2013/Briefing-Paper-Sequester-Unemployment-Insurance.pdf?nocdn=1

47. Neuberger, Zoe and Bob Greenstein. *The Impact of the Sequester on WIC: 575,000 to 750,000 Eligible Low-Income Women and Children at Nutritional Risk Could Be Denied Benefits*. Center on Budget and Policy Priorities. March 5, 2013. Available at: www.cbpp.org/files/2-26-13fa.pdf

48. *Estimated Cuts in Federal Housing Assistance and Community Development Programs Due to Sequestration, 2013*. Center on Budget and Policy Priorities. March 5, 2013. Available at: www.cbpp.org/files/1-28-13hous.pdf

APPENDIX A:
THE POVERTY UNIVERSE AND UNIT OF ANALYSIS

The Introduction to this report noted that a measure of poverty must establish a threshold, a line that demarcates the poor from the rest of society. It must also define what resources a family can draw on to meet its needs. Once these are in place, a method for measuring poverty needs to assess which groups in the population it can be meaningfully applied to. The "poverty universe" is the population whose poverty status can be determined.

Another important task is to create a "poverty unit of analysis." People live together for a variety of reasons. The ones that are relevant to poverty measurement are that they pool economic resources and satisfy material needs as a unit. As described below, CEO expands the definition of the unit of analysis beyond the family-based unit that is employed by the official measure.

Who Is Counted When Measuring Poverty?

Not everyone can be counted when measuring poverty. For example, the poverty universe used by the Census Bureau in its official poverty measure excludes most people living in "group quarters" such as college dormitories, nursing homes, military bases, and prisons.[1] It is easy to see why. Much of this population is in no position to earn income. At the same time, group quarters residents typically receive housing, meals, and other services that are provided by the institutions they reside in. The former condition could be used to judge that every individual in an institutionalized setting is poor. The latter condition could be used to judge that these persons' basic material needs are being met and that they are not poor. Either choice reveals that a concept of poverty as material deprivation is an awkward fit for this group.

An additional challenge to determining the poverty status of group quarters residents is the lack of information the American Community Survey (ACS) provides about them, particularly their relationship with others. A college student living in a dormitory, for example, may have little or no personal income, but might be comfortably supported by her parents. That information is unavailable in the survey. All of these reasons make it very difficult to determine the poverty status of group quarters residents. CEO, therefore, excludes the entire group quarters population from our measure.

1. For a definition of group quarters, see: www.census.gov/acs/www/ Downloads/data_documentation/SubjectDefinitions/2011_ ACSSubject Definitions.pdf

Another group that is excluded from the official poverty measure is unrelated persons living in households who are under 15 years of age. They are not assigned a poverty status because, as unrelated individuals, whether they would be poor or not poor would depend on their personal income. The ACS, however, does not collect data on the incomes of persons under 15 years of age. CEO, by contrast, includes this group in our poverty universe. As explained below, unrelated individuals under 15 are placed in a poverty unit with other members of the household they reside in and their poverty status is determined by the income of the unit as a whole.

In sum, the CEO poverty universe excludes the entire group quarters population, but includes the entire household population in the ACS sample for New York City. As Table A One illustrates, the universe for this study includes 8.071 million out of the 8.244 million City residents in 2011. All of the excluded, over 173,000 people or 2.1 percent of the population, are living in group quarters.

TABLE A ONE
The CEO Poverty Universe, 2011

	Number	Percent
Household Population	8,071,057	97.9%
Group Quarters Population	173,369	2.1%
Total Population	8,244,426	100.0%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

The Poverty Unit of Analysis: Who Is Sharing Income and Expenses?

From the perspective of the current official methodology, individuals are considered poor if the total income of the family they live in fails to reach the appropriate poverty threshold for their family's size and type. The rationale for this is straightforward: family members who reside in the same household share resources and living expenses. Spouses typically pool their income and make joint decisions about major expenditures. Parents provide financial support to their children. Treating family members as lone individuals whose poverty status is determined by their own income would place nearly every non-working spouse and child in poverty.

Families in the official poverty measure are composed of people who are related to the household head by blood,

marriage, or adoption.[2] CEO modifies this definition of the family unit in three ways:

1. People who are unmarried partners of the household head are considered part of that head's family rather than separate unrelated individuals.[3] Following a recommendation by the National Academy of Sciences (NAS) Panel, such people are treated as the householder's spouse.[4] If the household also includes children of the partner who have not already been identified as children of the reference person, they are included as children in the householder-unmarried partner family.

2. CEO creates additional family units, referred to as "unrelated subfamilies." These are family units within households that do not include someone who is related to the householder. An example of such a unit would be two persons who are married to each other and are boarders in someone else's home. Because of data limitations, unrelated subfamilies can only be observed when they are composed of married couple families, with or without their own children, or single persons with children.

3. We place other unrelated individuals who we identify as being claimed as dependents for tax filing purposes into the poverty unit of those claiming them. Individuals claimed as dependents are being supported by others in the household. Given that relationship, we judge that they should be members of the poverty unit of the person(s) whom they are dependent upon. This step assigns non-relative indigent adults and nearly all the unrelated children in private households to a poverty unit. In the few instances where the tax program cannot connect an unrelated child to a tax unit (see Appendix D describing the CEO tax model), the child joins the poverty unit of the household's reference person.[5]

Together, these three modifications bring slightly over 215,000 individuals who would have been treated as single-person poverty units or excluded from the poverty

universe in the official measure into multi-person poverty units in the CEO measure.

Thus, the poverty unit of analysis for this study is composed of:

1. Expanded families: all persons residing in the same household who are related to the household's reference person by blood, marriage, adoption, or are the reference person's unmarried partner (and any children and dependents of that partner not already identified as related to the reference person), or others who are claimed by the household head as dependents for tax filing purposes. As Table A Two reports, this group accounts for 83.4 percent of the total poverty universe. Persons living in families that include an unmarried partner, a subgroup within the expanded family category, comprise 5.5 percent of the poverty universe.

2. Unrelated subfamilies. This subgroup accounts for only 0.4 percent of the poverty universe.

3. The remainder of the poverty universe is composed of "unrelated individuals." These are people who are either living alone (12.2 percent of the universe) or are living in a household with others, but with whom they have no familial or obvious economic relationship (4.4 percent of the universe). Both groups of unrelated individuals are treated as "single-person families" and their poverty status is determined using their individual CEO incomes.

A poverty threshold is assigned to each unit based on its size and composition. (See Appendix B.) The sum of the resources of all the people in the unit is computed and compared to the appropriate threshold to determine whether the members of the unit are poor.

TABLE A TWO
The Unit of Analysis for Poverty Measurement, 2011

	Number of Persons	Share of Poverty Universe
People in CEO Expanded Families	6,727,675	83.4%
People in Unmarried Partner Families	443,962	5.5%
People in Unrelated Subfamilies	29,777	0.4%
Unrelated Individuals Living with Others	358,995	4.4%
Unrelated Individuals Living Alone	984,387	12.2%
Total Poverty Universe	8,071,057	100.0%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

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2. The ACS does not identify unrelated subfamilies. See below for a definition of this group.

3. The ACS Subject Definitions defines an unmarried partner as "a person age 15 years and over, who is not related to the householder, who shares living quarters, and who has a close personal relationship with the householder." The gender of the partners is irrelevant to this designation.

4. Citro and Michael, p. 306.

5. For a detailed description of how these units are created and evaluation of the accuracy of CEO's methods, see Virgin, Vicky. "Creating the CEO Poverty Unit: An Evaluation Using the CPS ASEC." June 2011. Available at: www.irp.wisc.edu/research/povmeas/Poverty_unit_analysis_CEO_2011.pdf

APPENDIX B:
DERIVING A POVERTY THRESHOLD FOR NEW YORK CITY

One of the primary goals of the CEO poverty measure is to establish a realistic standard of need for New York City. In our first three reports we created a poverty threshold that was based on the 1995 recommendations of the National Academy of Sciences (NAS). The Interagency Technical Working Group's (ITWG) March 2010 guidelines called for a similar, but not identical, approach to drawing the poverty line.[6] These recommendations are reflected in the Supplemental Poverty Measure (SPM) the Census Bureau first released in November 2011.[7]

For last year's and this year's report, CEO revised the method we use to construct a New York City-specific threshold in light of the ITWG's guidelines. Bringing our threshold into closer alignment with the SPM makes our poverty rates more commensurable with those issued by the Census Bureau. However, we have not followed the SPM in all respects. This appendix briefly describes the SPM threshold and the ways in which CEO has followed or diverged from the SPM method. It then provides the steps we take to create our New York City-specific threshold. Because year-to-year changes in the threshold are important to understanding changes in poverty rates over time, it also compares growth in CEO's New York City threshold with the U.S.-wide SPM and the official thresholds.

From NAS to SPM

The NAS recommended that the first step in creating the poverty threshold was to compute a nationwide threshold based on the distribution of expenditures on food, clothing, shelter, and utilities by a reference unit composed of two-adult, two-child families.[8]

An additional factor is included to account for miscellaneous expenses, such as non-work-related travel, household supplies, and personal care products. Expenditures are measured using a three-year moving average of data available in the Bureau of Labor Statistics' Consumer Expenditure Survey (CE).

The NAS did not recommend a specific poverty line; instead it suggested that the threshold fall between the 30th and 35th percentile of the distribution of what families spend on the items in the threshold. (These percentiles were equivalent to 78 percent and 83 percent of the median level of spending on these goods at the time of the report.)[9] The NAS also offered an upper and lower bound for the factor that accounts for miscellaneous necessities, a multiplier ranging from 1.15 to 1.25 times the food, clothing, shelter, and utilities expenditure estimate.[10]

The SPM threshold is also based on CE measures of expenditures on the same group of necessities. However, the SPM differs from the prior NAS method in four respects:

1. The SPM expands the reference family to include all Consumer Units in the CE with exactly two children, not just those with two adults.

2. The SPM is based on the 33rd percentile of the expenditure distribution, not a fixed percentage of the median of the distribution.

3. The SPM uses a five-year moving average of expenditure data. The NAS had proposed a three-year moving average.

4. The SPM creates separate thresholds to reflect differences in housing status for owners with a mortgage, owners free and clear of a mortgage, and renters. The NAS-based research had used a common threshold for these groups.[11]

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6. *Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure*. March 2010. Available at: www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf

7. Short, Kathleen. The Research Supplemental Poverty Measure: 2010. U.S. Bureau of the Census. November 2011. Available at: www.census.gov/hhes/povmeas/methodology/supplemental/research/Short_ResearchSPM2010.pdf

8. Two-adult, two-child units are referred to as the reference family because, as we discuss below, the thresholds for other families are calculated in reference to families of this type. This family was chosen by the NAS because it is the most common structure among families that include children less than 18 years of age.

9. The relationship between the percentiles of the distribution and the percentages of the median may have changed since the NAS Panel report.

10. Citro and Michael, p. 106.

11. The NAS report was aware of the limitations of this approach and suggested that one remedy would be to develop a separate threshold for homeowners with low or no housing costs. Citro and Michael, p. 245.

Accounting for Housing Status

CEO has adopted the first three of the changes listed above. CEO, however, does not follow the ITWG guidelines that call for the creation of separate thresholds by housing status. Instead, CEO continues to account for differences in housing status on the income side of the poverty measure, applying a housing status adjustment to all households that reside in "non-market rate" housing. This includes homeowners without a mortgage, renters living in rent-regulated units, and renters who do not pay cash rent, along with renters participating in means-tested housing assistance programs.

The different approaches reflect the availability of data that describe the unique features of the New York City housing market. The SPM method has been created for use with the Census Bureau's Current Population Survey (CPS). The CPS indicates whether respondents own or rent their housing. A newly added question identifies homeowners who make or do not make mortgage payments. The CPS, however, does not provide information about housing expenditures, and the Survey provides little other information (such as the size or condition of the housing unit) that would make estimating these feasible. The SPM's recourse is to create separate thresholds, by housing status, which are derived from the housing expenditure data available in the CE.

CEO, by contrast, uses the American Community Survey (ACS) as its principal data set. The ACS identifies homeowners who make mortgage payments, homeowners free and clear of a mortgage, renters who pay rent, and renters who do not pay cash for their shelter. In addition, the ACS provides data on what nearly all households pay out-of-pocket for their shelter and utilities.[12] The unique-to-New York City Housing and Vacancy Survey provides CEO with the ability to identify households that are participating in the wide variety and far-reaching array of housing affordability programs available to renters in the City. This creates the opportunity to account for the advantages of home ownership free of a mortgage and participation in housing affordability programs on a household-by-household basis without having to construct separate thresholds that try to capture them "on average." Given the wealth of data available to us, CEO concluded that we should take advantage of it. Our income-side

method for accounting for housing status is detailed in Appendix C.

Geographic Adjustment

The NAS argued that because living costs are not uniform across the United States, the poverty thresholds should be geographically adjusted. Since research indicates that the largest source of the disparity in inter-area living costs is a result of differences in housing costs, the Panel recommended that only the part of the threshold that is made up of shelter and utilities expenditures should be adjusted. It further suggested that the ratio of area-specific to U.S.-wide Fair Market Rents developed by the U.S. Department of Housing and Urban Development (HUD) could be used as the adjustment factor.[13]

Following the ITWG Guidelines, the SPM uses the ratio of median rents for two-bedroom units for its adjustment factor, but computes these from the ACS. CEO continues to use HUD's Fair Market Rents (FMR) for two-bedroom units. The FMR ratio for New York City differs from the ACS ratio (1.48243 vs.1.36786) because they measure different things. Fair Market Rents are representative of recently rented units of standard quality. The rent data from the ACS covers all rental units except the very small number that lack complete plumbing and kitchen facilities. Because rent regulation is so widespread in New York City, rents at the median of the ACS distribution are not an accurate reflection of the market rate rental housing market. This creates two inconsistencies. First, the SPM method compares a New York City median rent that is influenced by housing affordability programs against a U.S.-wide median that (because of the very narrow scope of these programs nationally) is not. The impact of rent regulation on the ACS-based rents for New York City creates a second inconsistency in that CEO is accounting for the effect of housing affordability programs on the income side of the poverty measure. CEO, therefore, continues to use the FMRs to create the adjustment factor.

Table B One provides the steps taken in creating the CEO threshold for 2011. The 2011 U.S.-wide SPM threshold (before the housing adjustment) is $24,999.[14] Housing (shelter and utilities) makes up nearly half (49.3 percent) of this threshold. The housing portion is multiplied by the ratio of U.S. to New York City Fair Market Rents

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12. The exception is renters participating in tenant-based subsidy programs. CEO imputes their expenditures by a statistical match with the New York City Housing and Vacancy Survey.

13. Citro and Michael, pp. 182-201. The NAS Panel regarded this approach as provisional, pending further research.
14. For 2011, the Bureau of Labor Statistics did not report a pre-housing status adjustment SPM threshold. CEO calculated it from the data provided at: www.bls.gov/pir/spmhome.htm#threshold

(1.48243) and comes to $18,270. This is added together with the (unadjusted) non-housing portion of the threshold, yielding a New York City-specific threshold of $30,945. This CEO threshold is 23.8 percent higher than the U.S.-wide SPM threshold. The geographic adjustment implies that a New York City resident needs $1.24 to obtain a standard of living equivalent to what $1.00 would obtain, on average, across the United States.

TABLE B ONE
Creation of CEO Threshold, 2011

U.S.-wide SPM Threshold	$24,999
Housing Portion of Threshold	49.3%
Geographic Adjustment Factor	1.48243
Adjusted Housing Portion of Threshold	$18,270
CEO Threshold	$30,945

Sources: U.S. Bureau of Labor Statistics and U.S. Department of Housing and Urban Development.
Note: See text for explanation of concepts.

Adjustment for Poverty Unit Size

Once a threshold for the reference family has been set, thresholds need to be calculated for families (or poverty units) of other sizes and compositions (i.e., number of children and number of adults). This study uses the three-parameter scale developed by David Betson after the release of the NAS report.[15] The scale has been used in the Census Bureau's NAS-based poverty reports and in the new SPM.

Table B Two provides a selection of family size adjustments using Betson's scale. These are known as equivalence scales because they are used to compute the amounts of income needed by families of different types to be equivalently well-off. The scales give the adjustments that are needed to convert the threshold for the reference family of two adults and two children to thresholds for other family sizes. For example, to calculate the threshold for a family of two adults and one child, the table indicates that the reference family threshold of $30,945 would have to be multiplied by 0.88, which would yield a threshold of $27,231.

TABLE B TWO
Factors Used by CEO to Adjust Reference Family Thresholds for Units of Other Sizes and Types

	Number of Children Under 18			
Number of Adults	None	One	Two	Three
One	0.463	0.699	0.830	0.953
Two	0.653	0.880	1.000	1.114
Three	1.000	1.114	1.223	1.328
Four	1.223	1.328	1.430	1.529

Source: Computed by CEO based on Betson, David. *Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement.* University of Notre Dame. 1996.

Table B Three lists the resulting CEO poverty thresholds for a variety of families and compares them to the official thresholds for families of corresponding sizes and compositions. The CEO thresholds are always higher, but not by the same factor. This reflects the differences between the Betson scale and the scale implicit in the official thresholds. An important difference between the scaling methods (not reported in the table) is that the official method creates a different, and lower, poverty threshold for individuals and some families with a householder who is age 65 or older. The official threshold for a single adult is $11,702 if he or she is under 65, but $10,788 if that person is older. The CEO threshold makes no distinction by age. While the CEO threshold for a single, non-elderly person is 1.224 times the official threshold, it is 1.328 times the official threshold for a single, elderly person.

TABLE B THREE
Comparison of Poverty Thresholds, 2011

Poverty Unit Composition	CEO	Official	CEO/ Official
One Adult*, No Child	$14,327	$11,702	1.224
Two Adults*, No Child	$20,207	$15,063	1.341
One Adult*, One Child	$21,630	$15,504	1.395
One Adult, Two Children	$25,684	$18,123	1.417
One Adult, Three Children	$29,490	$22,891	1.288
Two Adults, One Child	$27,231	$18,106	1.504
Two Adults, Two Children	$30,945	$22,811	1.357
Two Adults, Three Children	$34,472	$26,844	1.284

*Adult is non-elderly in official threshold.
Sources: U.S. Bureau of the Census and CEO calculations from Tables B One and B Two.

15. Betson, David. *Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement.* University of Notre Dame. March 1996. Available at: www.aspe.hhs.gov/poverty/papers/escale.pdf

Changes in the Poverty Thresholds Over Time

Measuring poverty is an exercise in comparing incomes to thresholds. Thus, part of understanding changes in poverty rates over time is tracking how the thresholds are changing from one year to the next. Table B Four provides the official, U.S.-wide SPM, and CEO reference family thresholds for 2005 through 2011. It also reports the percentage change in the thresholds from the prior year and the ratio of the SPM to official, CEO to official, and CEO to SPM thresholds. With the exception of the change from 2010 to 2011, the SPM and CEO thresholds grew at a faster rate than the official threshold during the 2005-2011 period. Over this time span the CEO threshold increased at a somewhat faster rate than the U.S.-wide SPM threshold. The ratio of the two alternative thresholds to the official threshold rose from 2005 to 2010 and the CEO poverty threshold rose relative to the U.S.-wide SPM threshold.

TABLE B FOUR
Poverty Thresholds, 2005 - 2011

Reference Family Thresholds

Year	Official	US-Wide SPM	CEO
2005	$19,806	$20,492	$24,532
2006	$20,444	$21,320	$25,615
2007	$21,027	$22,317	$26,979
2008	$21,834	$23,608	$28,822
2009	$21,756	$23,854	$29,265
2010	$22,113	$24,343	$30,055
2011	$22,811	$24,999	$30,945

Percentage Change from Prior Year

Year	Official	US-Wide SPM	CEO
2006	3.2%	4.0%	4.4%
2007	2.9%	4.7%	5.3%
2008	3.8%	5.8%	6.8%
2009	-0.4%	1.0%	1.5%
2010	1.6%	2.0%	2.7%
2011	3.2%	2.7%	3.0%

Ratio of Thresholds

Year	SPM/Official	CEO/Official	CEO/SPM
2005	1.035	1.239	1.197
2006	1.043	1.253	1.201
2007	1.061	1.283	1.209
2008	1.081	1.320	1.221
2009	1.096	1.345	1.227
2010	1.101	1.359	1.235
2011	1.096	1.357	1.238

Sources: U.S. Bureau of Labor Statistics and U.S. Department of Housing and Urban Development.

APPENDIX C:
ADJUSTMENT FOR HOUSING STATUS

Housing plays a central role in National Academy of Sciences (NAS)-type poverty measures. As noted in Appendix B, housing needs are represented in the creation of the threshold and account for nearly one-half of the U.S.-wide Supplemental Poverty Measure (SPM) poverty line. Differences in housing expenditures are also the basis for adjusting the SPM poverty thresholds to account for inter-area differences in living costs.

An ongoing concern among poverty researchers is how to account for differences in housing status. This has often been thought of as two distinct issues. One is the need to account for the lower spending needs that homeowners who are free and clear of a mortgage have relative to homeowners who are carrying a mortgage.[16] A second issue is how to value means-tested housing assistance, such as residence in public housing or participation in tenant-based subsidy programs.[17]

The Interagency Technical Working Group (ITWG) Observations addressed these concerns. The new SPM accounts for the first housing status issue by creating distinct thresholds for owners with a mortgage, owners without a mortgage, and renters. In addition, recent research by Census Bureau staff has established an approach to valuing means-tested housing assistance that has been incorporated into the SPM.[18]

Appendix B explained why CEO believes that a household-by-household adjustment on the income side of the poverty measure is the most appropriate way for us to measure the advantages of ownership free and clear of a mortgage, residence in rent-regulated housing units, or participation in a means-tested housing assistance program. This appendix begins with the conceptual issue of how best to define "advantage" in a way that can be measured in dollars that are added to a family's income. After describing our approach, the appendix details the steps we take to create the estimates needed to

implement it. We conclude with a note about the housing adjustment for homeowners without a mortgage.

Measuring Advantage

Not all New Yorkers require the same level of expenditure to obtain shelter of comparable size and quality. Renters in public housing or rent-regulated units, renters who receive a tenant-based subsidy, and homeowners free and clear of a mortgage have lower housing costs than residents of "market rate" housing. To account for this advantage, the CEO poverty measure makes an adjustment to the income of the non-market rate households.[19]

The housing adjustment for non-market rate renters is calculated as the lesser of:

Either,

(1) Adjustment = The estimated market rate gross rent of their housing unit minus their actual out-of-pocket housing expenditures.

Or,

(2) Adjustment = The housing portion of the threshold minus their actual out-of-pocket housing expenditures.

The estimated market rate gross rent of a rent-regulated or subsidized unit is what the household would be paying for the unit if its costs equaled that of a market rate unit of similar size and quality.

The housing adjustment for homeowners who are free and clear of a mortgage is always calculated using the second alternative. (The reason why we take a somewhat different approach for this group is taken up below.)

This approach rests on several judgments. The first is that the quality of non-market housing units is not inferior to market rate units of similar size and quality. If non-market housing residents were simply paying less for their housing because they were living in poorer quality

16. See, for example: Garner, Thesia I. and David Betson. *Housing and Poverty Thresholds: Different Potions for Different Notions.* March 2010. Available at: www.bls.gov/pir/spm/spm_pap_housing10.pdf
17. A variety of approaches to valuing housing subsidies are discussed in Renwick, Trudi. *Improving the Measurement of Family Resources in a Modernized Poverty Measurement.* U.S. Bureau of the Census. January 2010. Available at: www.census.gov/hhes/povmeas/publications/overview/RenwickSGE2010.pdf
18. Johnson, Paul D., Trudi Renwick, and Kathleen Short. *Estimating the Value of Federal Housing Assistance for the Supplemental Poverty Measure.* SEHSD Working Paper #2010-13. July 2011. Available at: www.census.gov/hhes/povmeas/methodology/supplemental/research/SPM_HousingAssistance.pdf

19. If more than one poverty unit resides in a household, the housing adjustment is prorated across the units according to their relative size.

homes, there would be little or no advantage to their housing status. As we demonstrate below, our modeling of market rate rents indicates that many non-market rate renters, particularly those that are participants in means-tested housing programs, are able to secure housing whose market value is well in excess of what they actually spend to meet their housing needs.

A second judgment is that residence in non-market rate housing can make resources which would have been devoted to housing available to meet other non-housing needs. However, the advantage of residence in non-market rate housing is not fully fungible. By its construction, the adjustment cannot exceed the value of the housing portion of the threshold. Even if a household is enjoying shelter that would cost many times the value of the housing portion of the threshold, the entire difference between what it is paying for its housing and the housing's market value does not represent a resource it can use for other purposes. Thus a family will be counted as poor if its income, after meeting its housing needs, is not sufficient to meet its non-housing needs.

Finally, we do not allow for negative adjustments. If out-of-pocket expenditures exceed the housing portion of the threshold, the difference is not deducted from the poverty unit's income. This rule rests on the judgment that housing of adequate quality is available at a level of expenditure equal to the housing portion of the threshold. Or, more simply put, that the housing portion of the threshold is not too low. Expenditures in excess of the housing portion of the threshold, therefore, are discretionary and do not belong in a measure of poverty.

In order to implement this approach we need to: 1) Distinguish market from non-market rate housing units; 2) Measure out-of-pocket housing costs; and 3) Estimate market rents for non-market rate units. We begin with a description of how we make use of the New York City Housing and Vacancy Survey (HVS) to create the necessary data.[20]

Identifying Housing Status and Out-of-Pocket Rents

Participants in means-tested housing assistance programs, tenants in rent stabilized/controlled apartments, tenants who pay no rent, and homeowners

free and clear of a mortgage receive a housing adjustment to their income. The American Community Survey (ACS) provides some of the information needed to identify these groups. The survey indicates which households own their home and whether or not they are carrying a mortgage. It also identifies those renter households who do not pay any cash rent.

There are, however, two crucial pieces of information that the ACS does not contain, both of which pertain to renters. First, the ACS does not indicate whether the household resides in public housing, a rent-regulated unit, or is receiving a tenant-based subsidy. The second piece of missing information is that the ACS does not identify a tenant-based subsidy recipient's out-of-pocket expenditures for shelter and utilities. There are two rent variables in the ACS – contract rent and gross rent. Contract rent is the rent received each month by the landlord. Gross rent is contract rent plus utility payments. These two variables do not represent renter out-of pocket expenditures for shelter and utilities, if the household is participating in a rental subsidy program.[21]

To address these deficiencies we turn to the HVS, which collects detailed information on geographic, demographic, and housing-related characteristics of housing units and their occupants. By matching renter households in the ACS to renter households in the HVS we are able to impute the missing housing program status and the out-of-pocket expenditures data to the ACS. Our matching routine is based on a set of household and head-of-household characteristics that identify corresponding households between the ACS and HVS. Listed below are characteristics used for matching renter households in the matching algorithm:

1. Neighborhoods: Community District (CD) or Public Use Microdata Area (PUMA).

2. Race/Ethnicity of the householder (Non-Hispanic White, Non-Hispanic Black, Hispanic, Non-Hispanic Other Race).

3. Whether the householder was 65 or older.

4. Equivalized household income as a ranking based on the distribution. (Income is banded into septiles, sextiles, quintiles, and quartiles calculated for each respective data set.)

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20. A complete description of the HVS can be found at: www.census.gov/hhes/www/housing/nychvs/nychvs.html

21. Although ACS respondents are instructed to provide the rent received by the landlord, it is unclear whether subsidy recipients include the portion of the rent they do not pay in their answers. See: Parker, Julie. "Rent: A Story of Misreporting?" NAWRS 2010. Available at: www.nawrs.org/LA2010/Papers/t1c3.pdf

5. Contract rent as a ranking based on the distribution. (Contract rent is also banded similarly to equivalized household income.)

6. Number of bedrooms in the household (studio, 1 through 4+).

7. Household composition (husband and wife with and without children, male and female-headed single households with and without children, households of unrelated people, and single person households).

8. Whether or not the household had wage income.

Our initial match is an attempt to match on all eight household characteristics. If we do not find a matching household in the HVS, we incrementally remove or relax characteristics and attempt to match again. Our goal is to preserve the geographical, racial, and family composition distribution of the housing statuses found in the HVS. Because the distribution of participation in means-tested housing assistance (in particular the location of public housing) varies by neighborhood, we attempted to match as many households as possible within the same neighborhood. We then move to adjacent neighborhoods and finally, to neighborhoods within the same borough.

Once the ACS and HVS renter households are matched, we create a housing status variable to categorize the ACS households. This categorical scheme is derived from variables that are unique to the HVS[22] and variables that are common to the ACS and HVS: renter with no rent, homeowner free and clear of a mortgage, and homeowner with a mortgage. The housing status categories are summarized in Table C One. It's important to note that if a household lived in public housing or Mitchell-Lama rental housing and received tenant-based subsidies, it is characterized as a tenant-based subsidy household. We use housing expenditures reported in the ACS for all housing statuses except subsidy recipients, whose out-of-pocket rent is derived from variables in the HVS. A more detailed description of our ACS-HVS match can be found in the housing appendix of our 2011 report.[23]

TABLE C ONE
Definition of CEO Housing Status

Renter	
Public Housing	Living in a building that is NYCHA-operated public housing.
Mitchell-Lama	Living in Mitchell-Lama rental housing.
Tenant-Based Subsidy	Receiving Federal Section 8, Public Assistance Shelter Allowance, Senior Citizen Rent Increase Exemption, "Jiggets" rent supplement program, Employee Incentive Housing Program, Work Advantage Housing program for the homeless, or some other Federal, State, or City subsidy program.
Stabilized/Controlled	Living in an apartment under rent control or rent stabilization status.
Other Regulated	Living in an apartment under Article 4 or 5, HUD or Loft Board regulated building, or building owned by the City in "In Rem" status.
Market Rate	Living in a rental apartment that is neither public housing nor stabilized/controlled, and whose occupants do not receive a subsidy.
No Cash Rent	Does not pay cash rent to occupy apartment.
Owner	
Owned Free and Clear	Living in a housing unit that is owned with no mortgage.
Paying Mortgage	Living in a housing unit that is owned and has a mortgage.
No Mortgage Status Reported	There is no mortgage status reported in the HVS.

Sources: New York City Housing and Vacancy Survey and American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Tenant-based subsidy takes precedence over all other housing statuses. For example, if someone lives in public housing and also receives a subsidy, they are categorized as receiving a subsidy.

22. The variables used were Control Status, which indicates what type of housing development the unit is in, and a set of variables that identify whether or not that household participated in at least one of the several tenant-based subsidy programs that are available to low-income renters.

23. Available at: www.nyc.gov/html/ceo/downloads/pdf/poverty_measure_2011.pdf

Table C Two provides the results of the match between the 2011 HVS and 2011 ACS. The percentage distribution of households between the donor HVS and the recipient ACS by housing status categories is extremely close. In no case does the difference between the distributions exceed 1.3 percentage points.

sense of market value is what we need to measure.

To estimate market rate rents, we rely on the 2005, 2008, and 2011 New York City Housing and Vacancy Surveys, which contain detailed information on the location and physical condition of rental units. For these years, we estimate a regression model on the subset of observations

TABLE C TWO
Comparison of Housing Status Between 2011 HVS and 2011 ACS

Housing Status	2011 HVS		2011 ACS		Percentage Point Difference
	Frequency	Percent	Frequency	Percent	
Renter					
Public Housing	161,519	5.2%	166,207	5.5%	-0.3
Mitchell-Lama Rental	30,925	1.0%	36,761	1.2%	-0.2
Tenant-Based Subsidy	267,374	8.7%	229,684	7.6%	1.1
Stabilized/Controlled	840,077	27.2%	830,301	27.5%	-0.3
Other Regulated	35,069	1.1%	72,900	2.4%	-1.3
Market Rate	723,664	23.4%	689,035	22.8%	0.6
No Cash Rent	46,188	1.5%	50,340	1.7%	-0.2
Owner					
Owned Free and Clear	351,095	11.4%	351,426	11.6%	-0.3
Paying Mortgage	632,970	20.5%	596,678	19.7%	0.8
Total	3,088,881	100.0%	3,023,332	100.0%	

Sources: New York City Housing and Vacancy Survey and American Community Survey Public Use Micro Sample as augmented by CEO.

Estimating Market Rents

Market value is a hypothetical level of expenditure that must be estimated. In the economics literature the value of housing services is often thought of as a bundle of different physical and location-specific characteristics of a given unit.[24] We can, therefore, estimate the market rent of non-market rate housing by fitting a regression model accounting for these factors to a sample consisting of market rate units, and then apply the resulting coefficients to the same set of characteristics of non-market rate units.

Before describing the model, a clarification should be made. The dependent variable in the regression is the gross rent currently paid for the unit. Thus, market value is not necessarily equal to what a unit would rent for if it were placed on today's market. Since our concern is differences in current spending needs between residents of market and non-market housing units, the former

that are in market rate rental units. We employ variables that measure housing quality at three levels: the unit/tenant, the building, and the neighborhood. The unit/tenant-specific indicators are the number of rooms and the length of the tenant's tenure, which captures the negotiating power accrued by long-term tenants. At the building level, we use measures of building conditions, building size, building age, and whether the owner lives in the building. To capture neighborhood effects, we include a subjective "neighborhood quality" measure as reported by the tenant, as well as median PUMA income and dummy variables for the super-PUMA in which the building is located.[25] We use super-PUMA dummies rather than PUMA dummies due to the limited number of market-rate units in some of the PUMAs. By including median PUMA income in the model, however, we are able to capture some of the variation in neighborhood effects at the PUMA level.

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24. An application of this approach in New York City can be found in Roistacher, Elizabeth A. "Rent Regulation in New York City: Simulating Decontrol Options." *Journal of Housing Economics* 2, pp.107-138. 1992.

25. Super-PUMAs are Census-defined geographic units that represent approximately 400,000 residents. In their level of geographic detail, New York City's 15 super-PUMAs stand between the City's five boroughs and its 55 PUMAs.

The relationship between gross rent and many of its predictor variables is complex and non-linear. In order to achieve the best possible fit to the data, we employ non-parametric techniques via a Generalized Additive Regression Model (GAM). A GAM is a regression model that allows different functional forms for each independent variable. Some of the variables used in the regression are included as dummy variables, while others are fit non-parametrically, using smoothing spline functions.[26] The regression variables are defined in Table C Three.[27]

TABLE C THREE
Regression Variables

Variable	Description	Variable	Description
Tenant Tenure	Years in Apartment	Units	Number of Units
Rooms	Number of Rooms		Northern Bronx Omitted
4+ Stories, No Elevator	Dummy (1= Four or More Stories and No Elevator)		Southern Bronx
			Northern Kings
Median PUMA Income	Median Income within PUMA, in Thousands of Dollars		Western Kings
Tenant Rating Indicators	Rated Fair Omitted		Central Kings
			Eastern Kings
Rated Excellent	Buildings in Neighborhood Rated by Tenant		South Kings
Rated Poor	Buildings in Neighborhood Rated by Tenant	Super-PUMA Indicators	Eastern Manhattan
			Northern Manhattan
	Built before 1947 Omitted		Western Manhattan
	Built 2000+		Richmond
	Built 1990-1999		Northern Queens
	Built 1980-1989		Eastern Queens
	Built 1970-1979		South Eastern Queens
Year Built Indicators	Built 1960-1969		Southern Queens
	Built 1947-1959		
	Built 1930-1946		
	Built 1920-1929		
	Built 1901-1919		
	Built 1900 and earlier		

26. Smoothing splines are a particular type of non-parametric smoothing technique. For an overview of smoothing spline functions and GAM, see Keele, Luke John. *Semiparametric Regression for the Social Sciences*. West Sussex, England. John Wiley and Sons, Ltd. 2008.
27. Non-parametric variables do not have reported coefficients, but rather have smoothed bivariate plots. These plots are available from the authors upon request.

The results of the regression for 2011 are shown in Table C Four. The models for 2005 and 2008 (not shown) have a similar fit. The widest divergence in the coefficients across the years is in variables that are not statistically significant. In particular, the relationship between gross rent and median PUMA income in all three years' models is quite close and highly significant.

TABLE C FOUR
Regression Models of Market Rate Rents, 2011

Dummy Variables	Estimate	t-Statistic
Intercept	1441.14	25.81
4+ Stories, No Elevator	-241.95	-3.81
Rated Excellent	127.94	4.08
Rated Poor	143.18	1.63
Southern Bronx	77.98	0.55
Northern Kings	162.91	2.25
Western Kings	410.57	5.73
Central Kings	84.42	1.10
Eastern Kings	-31.48	-0.45
South Kings	73.80	1.03
Northern Manhattan	745.58	7.92
Eastern Manhattan	1299.22	13.92
Western Manhattan	1501.90	15.40
Richmond	-331.98	-3.77
Northern Queens	145.70	2.15
Eastern Queens	-68.88	-0.89
South Eastern Queens	-262.35	-3.25
Southern Queens	-130.51	-1.73

Non-Parametric Variables	EDF	F-Statistic
Log of Median PUMA Income	6.78	7.15
Tenant Tenure	2.06	59.23
Year Built	8.32	8.40
Number of Rooms	6.69	126.55
Number of Units	11.56	11.88
N		3,715
R^2		0.574

Source: 2011 New York City Housing and Vacancy Survey.
Notes: Dependent variable is monthly gross rent. Data weighted with the New York City Housing and Vacancy Survey household weight.

We then use the regression models to compute estimated market rate rent values for the non-market rental units. Table C Five shows the reported gross rent, estimated market rent, and their difference for various categories of renters in the 2011 HVS. The data are presented as rent per number of bedrooms since the average number

of bedrooms tends to vary across rental groups. The small difference between the reported and estimated rents for market rate units highlights the quality of the model's fit. By contrast, there are large per-bedroom differences between the reported out-of-pocket rent and the estimated market rate rents for all the non-market rate groups. This is especially the case for public housing units, with a mean per-room difference of $461 in 2011. The considerably higher market rate estimates are consistent with our assumption that non-market renters are, indeed, advantaged relative to market rate renters.

TABLE C FIVE
Mean Reported Gross Out-of-Pocket Rent and Estimated Market Rate Rent, Per Bedroom, 2011

Housing Status	Gross Out-of-Pocket Rent	Estimated Market Rent	Difference
Market Rate	$756	$765	-$8
Public Housing	$177	$638	-$461
Mitchell-Lama Housing	$472	$837	-$365
Tenant-Based Subsidy	$490	$587	-$97
Stabilized/Controlled	$600	$752	-$152
Other Regulated	$442	$920	-$478
No Cash Rent	$0	$583	-$583

Source: 2011 New York City Housing and Vacancy Survey.

Table C Six reports the mean difference between households' out-of-pocket housing expenditures and two values: 1) the housing portion of the threshold and 2) the estimated market rent. These two differences correspond to the two income adjustment equations described previously. The differences that are based on the estimated market rate rents are uniformly higher (on average) than those using the housing portion of the threshold for all groups.[28] When we apply the rule of taking the smaller of the two differences to compute the housing adjustment to income, Equation (1) is used in the majority of cases, ranging from 61.4 percent of the time for renters in stabilized/controlled units to 85.4 percent of the time for renters in Mitchell-Lama housing. This indicates that, for the most part, renters of non-market units are not "paying" for their cheaper rents by living in housing that is of such low quality that it would rent for less than the housing portion of the threshold.

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28. The mean adjustment using the housing portion of the threshold for rent-stabilized and controlled units is negative, indicating that a majority of these households' housing expenditures exceed that standard. This is not surprising as rent control and stabilization are not means-tested programs.

TABLE C SIX

Housing Portion of the Threshold vs. Estimated Market Rate Rent, 2011

Housing Status	Adjustment using Housing Portion of the Threshold		Adjustment using Estimated Market Rate		Share using Housing Portion of the Threshold
	Mean	Median	Mean	Median	
Public Housing	$7,043	$5,827	$14,461	$12,712	81.0%
Mitchell-Lama Housing	$734	$779	$10,972	$9,349	85.4%
Tenant-Based Subsidy	$7,835	$6,967	$11,101	$10,250	63.6%
Rent-Stabilized/Controlled	-$1,415	-$893	$4,467	$3,051	61.4%
Other Regulated	$4,242	$4,987	$10,980	$11,404	75.9%
No Cash Rent	$11,297	$10,139	$17,731	$16,236	75.1%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Note: Data weighted by the ACS household weight.

Impact of the Housing Adjustment on the Poverty Rate

The housing adjustment continues to have the largest impact on the CEO poverty rate of all the non-cash resource components. In 2011, it reduced the Citywide poverty rate by 6.2 percentage points. As Table C Seven indicates, the reductions for recipients of means-tested assistance are particularly large. For example, valuing housing assistance reduces the poverty rates for individuals in public housing and those receiving tenant-based subsidies by 26.7 and 26.9 percentage points, respectively.

TABLE C SEVEN

Effect of Housing Adjustment on the Poverty Rate, 2011

	Poverty Rate Based on Total CEO Income	Poverty Rate without Housing Adjustment	Percentage Point Difference
Total Population	21.3%	27.5%	-6.2
Renter			
Public Housing	28.7%	55.3%	-26.7
Mitchell-Lama Rental	26.4%	31.8%	-5.4
Tenant-Based Subsidy	37.3%	64.2%	-26.9
Stabilized/Controlled	24.0%	29.0%	-5.0
Other Regulated	28.3%	46.8%	-18.5
Market Rate	24.6%	24.6%	0.0
No Cash Rent	20.9%	38.0%	-17.2
Owner			
Owned Free and Clear	10.0%	17.1%	-7.1
Paying Mortgage	12.2%	12.2%	0.0

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

As we noted in Chapter One, the effect of our housing status adjustment on the Citywide poverty rate grew markedly from 5.5 percentage points in 2010 to 6.2 percentage points in 2011. The increase reflects a 6.9 percent rise in the value of the housing status adjustment over that time period. What would have accounted for such a large increase? One possible explanation for the rise is that there was an unusual jump in the housing portion of the CEO threshold between the two years. Since the threshold caps the value of the housing adjustment, an unusually large rise in this part of the poverty threshold might explain a rise in the value of the housing adjustment and its effect on the poverty rate. However, no such jump occurred. From 2010 to 2011 the housing portion of the threshold for the reference family increased by 2.7 percent. This is smaller than the 3.4 percent increase from 2009 to 2010.

A second explanation might be found in our use of the 2011 Housing and Vacancy Survey (HVS) for our 2011 estimates. The HVS is conducted every three years by the Census Bureau. We use the 2008 HVS for imputing housing status for the 2008, 2009, and 2010 ACS. The 2011 HVS is matched with the 2011 ACS. This creates the risk that a new survey would create an abrupt shift in the distribution of housing statuses and generate a marked change in the influence of the housing status adjustment on the poverty rate. To investigate this possibility we matched the 2008 HVS to the 2011 ACS and computed the before and after housing status adjustment poverty rates. We found that there was only a 0.1 percentage point difference (6.1 percentage points compared to 6.2 percentage points) in the effect of the adjustment on the New York City poverty rate.

This suggests that the jump in the housing status adjustment effect is the result of something intrinsic to

our method for valuing housing status, that there was a growing gap between the market-equivalent value of the non-market rate rental units and what these renters are paying out of pocket for their housing. We see evidence of this in Table C Eight. Across nearly all of the renter groups that receive a housing status adjustment the growth in the market value of their housing exceeds any increase in what they are paying out of pocket for their housing.

TABLE C EIGHT
Mean Actual Gross Out-of-Pocket Rent and Estimated Market Rate Rent

	2010			2011			Percentage Change from 2010		
Housing Status	Actual Out-of-Pocket Gross Rent	Estimated Market Rent	Difference	Actual Out-of-Pocket Gross Rent	Estimated Market Rent	Difference	Actual Out-of-Pocket Gross Rent	Estimated Market Rent	Difference
Public Housing	$513	$1,607	$1,094	$537	$1,766	$1,229	4.6%	9.9%	12.4%
Mitchell-Lama Housing	$944	$1,840	$896	$995	$1,957	$962	5.4%	6.4%	7.4%
Tenant-Based Subsidy	$444	$1,430	$986	$464	$1,443	$979	4.5%	0.9%	-0.7%
Stabilized/Controlled	$1,201	$1,578	$376	$1,223	$1,630	$407	1.8%	3.3%	8.2%
Other Regulated	$642	$1,513	$871	$714	$1,668	$954	11.3%	10.2%	9.5%
No Cash Rent	$144	$1,668	$1,524	$116	$1,673	$1,558	-19.6%	0.3%	2.2%

Sources: 2011 and 2010 American Community Survey as augmented by CEO.

A Note on Accounting for the Advantage of Home Ownership Free and Clear of a Mortgage

As noted above, CEO does not take the same approach to valuing the advantage of owning a home free and clear of a mortgage as we do for non-market rate renters. We only use Equation (2), the difference between the housing portion of the threshold and out-of-pocket housing expenditures, to make the housing adjustment for this group. In effect we are assuming that the market value of the units that are owned free and clear would at least be equal to the housing portion of the threshold.

We attempted to test this assumption by applying our hedonic regression model to the housing units that are owned free and clear. The results we obtained were not credible. Table C Nine provides the distribution of estimated market rate rents for market rate units and units that are owned free and clear.

TABLE C NINE
Distribution of Per-Bedroom Estimated Market Rent by Housing Status, 2011

	Renters Market Rate	Owners Free and Clear	Difference
Mean	$765	$622	-$143
Percentile			
5	$311	$312	$1
10	$353	$346	-$7
25	$424	$404	-$20
50	$539	$494	-$45
75	$920	$667	-$254
90	$1,581	$1,137	-$445
95	$1,851	$1,463	-$389

Source: CEO estimates from the 2011 NYC HVS.

The monthly, per-bedroom market rate rent estimates for the free-and-clear homeowners are below those for the market rate renters, by $143 for the mean and $45 for the median. This would suggest that the housing services consumed by these New York City homeowners are inferior to market rate renters. There are reasons to be skeptical of this result. As a group, the homeowners enjoy higher incomes than do renters. Table E Ten shows the distributions of family-size and composition-adjusted CEO Income (net of the housing adjustment) for market rate renters and homeowners without a mortgage.

TABLE C TEN
Distribution of Family-Size Adjusted CEO Income by Housing Status, 2011

	Renters Market Rate	Owners Free and Clear	Difference
Mean	$68,956	$88,778	$19,822
Percentile			
5	$10,353	$16,948	$6,595
10	$19,449	$24,175	$4,726
25	$31,130	$38,151	$7,020
50	$46,767	$63,530	$16,763
75	$77,521	$101,435	$23,913
90	$135,040	$167,138	$32,098
95	$197,005	$249,112	$52,107

Source: American Community Survey Public Use Microsample as augmented by CEO.
Note: Income is measured before the addition of the housing adjustment.

The free-and-clear homeowners enjoy considerably higher incomes than do market rate renters, by $19,822 for the mean and $16,763 at the median. Despite this, the hedonic model predicts that the rental value of their housing is inferior to the renters.

This seems highly implausible, suggesting that the hedonic model does not produce valid market rate rent estimates for this group. Hedonic models will only yield accurate estimates if the market rate apartments are sufficiently similar in their physical characteristics and geographic distribution to those owned free and clear in the City. This does not appear to be the case. For example, only five percent of the market rate rental units are in single-unit buildings, compared to 35 percent of homeowners free and clear of a mortgage. That five percent of market rate renters translates into only 181 unweighted observations in the HVS. A second important difference is geographic. As indicated in Table C Eleven, homes that are owned free and clear tend to be located in the periphery of the City in Staten Island,

Queens, etc., while market rate rental units are more likely to be located in the City's core in Manhattan. Given the limitations of our model, we conclude that simply using the difference between the housing portion of the threshold and out-of-pocket housing expenditures is a less error-prone approach to the housing adjustment for the free-and-clear owners than the method we use for the non-market renters.

TABLE C ELEVEN
Geographic Distribution of Single-Unit Housing by Housing Status, 2011

	Renters Market Rate	Owners Free and Clear	Percentage Point Difference
Northern Bronx	12.5%	6.0%	-6.5
Southern Bronx	2.2%	0.7%	-1.5
Northern Kings	5.2%	1.0%	-4.2
Western Kings	8.9%	4.5%	-4.4
Central Kings	4.4%	2.6%	-1.8
Eastern Kings	8.7%	8.1%	-0.6
South Kings	7.4%	4.2%	-3.2
Northern Manhattan	0.7%	0.6%	0.0
Eastern Manhattan	1.1%	0.3%	-0.8
Western Manhattan	0.5%	0.6%	0.1
Richmond	15.6%	19.2%	3.6
Northern Queens	4.7%	4.6%	-0.1
Eastern Queens	9.1%	19.7%	10.6
South Eastern Queens	11.2%	14.9%	3.6
Southern Queens	7.9%	13.1%	5.1

Source: CEO estimates from the 2011 NYC HVS.

APPENDIX D:
THE CEO TAX MODEL

The expansion of tax credits has been a key component of Federal economic stimulus programs since 2008. As a result, tax programs have become an increasingly important component of the resources available to families to meet their needs. Families with income above a minimal level incur income tax liabilities, but low-income families – especially if they have children – often find their tax credits are refundable in an amount greater than the taxes they owe. The result is that many low-income families have a negative tax rate – they receive more from the income tax system than they pay into it.

All working families are also subject to payroll taxes under the Federal Insurance Contribution Act (FICA). FICA offsets some of the gains derived from income tax credits. But even when payroll taxes are accounted for, the total tax effect on income leads to a reduction in the CEO poverty rate. The negative effect of FICA on after-tax income was reduced in 2011, the most recent year of our analysis, due to implementation of a two percentage point payroll tax cut.

The Tax Model

The American Community Survey (ACS), our primary source of data, does not include information about taxes. CEO, therefore, has created a tax model. The model's first task is to create tax filing units within the ACS's households. Then it applies the tax code to estimate the taxes owed and tax credits received for New York City tax filers.

Creating Tax Filing Units

ACS households consist of all persons residing in the same housing unit. Within the household, each member is identified only through their relationship to the person answering the ACS questionnaire. This person is designated as the reference person and is usually, but not always, the primary owner or renter of the household. The remaining residents of the household may form a complex network of relationships. Occupants can include a family embodying several generations; families unrelated to the respondent; and one or more unrelated individuals, including roomers and boarders. Because residents are only identified in relation to the reference person, we cannot always see how they may be related to each other.

For tax purposes, this presents a challenge. We need to use the information available in the ACS to estimate how many tax returns are filed from each household, and identify who on each return is the filer (along with their spouse and dependents). CEO addresses this problem by first dividing ACS households into Minimal Household Units (MHUs) that create a richer set of information about how persons in the household are related to each other. For example, two boarders individually listed as married will be linked together, using age and other demographic characteristics. The children of unmarried partners (unless they are coded as children of the respondent) are identified in a similar manner and are then coded as the child of a specific parent.[29]

The tax model then identifies MHU members who are tax filers, along with their spouse or dependent(s). Additional decisions are made about allocating children and indigent household members to filers as dependents.[30] Based on these decisions, each tax filer is then given a status of Married Filing Joint, Head of Household, Single, or Married Filing Separate.[31]

The Tax Calculator

A simulated Federal, New York State, and New York City tax return is prepared for each tax filing unit based on income and other data provided in the ACS.[32] We identify adjusted gross income (AGI) for the tax unit, which is the sum of all earned income, interest income, and other income sources. Social Security income is included to the extent it is taxable. Personal exemptions and standard deductions are then subtracted from AGI to find taxable income. The Federal tax liability on that income is calculated and then – going through the steps of a Federal 1040 tax return – we compute each of the tax credits for which filers are eligible. Once the 1040

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29. The MHU methodology is derived from Jeffery Passel. "Editing Family Data in Census 2000 Public-Use Microdata Samples: *Creating Minimal Household Units (MHUs)*." August 23, 2002. The application of Passel's method to the CEO model is explained in Virgin, Vicky. "Creating the CEO Poverty Unit: An Evaluation Using the CPS ASEC." June 2011. Available at: www.irp.wisc.edu/research/povmeas/ Poverty_unit_analysis_CEO_2011.pdf

30. The methodology used to create tax filing units is discussed at length in NYC Center for Economic Opportunity. *The CEO Poverty Measure, 2005-2008*. New York, NY. Center for Economic Opportunity. 2010.

31. The ACS does not provide enough information to identify widows, the other filing status used by the IRS.

32. Due to a lack of data in the ACS, tax estimates for middle to higher income households are less accurate than estimates for lower income households. We do not estimate itemized deductions, capital gains, and other tax items more common to higher income returns. For this reason, we confine our analysis to filers with AGI under $50,000.

is completed, an IT-201 New York State tax return is created, which relies on income and credit calculations from the Federal return. The IT-201 generates New York State and City tax liabilities and credits. In a final step, FICA payroll taxes are applied to all wage and salary income, and self- employment taxes are deducted from self-employment earnings.

Tax Policy

Estimates for the years 2008 to 2011 contain deductions, credits, or expansion of existing credits that were a key feature of the Bush and Obama Administrations' economic stimulus programs. We describe these policy initiatives in detail below. Table D One lists these tax programs and notes the years they were in effect.

- **Recovery Rebate Tax Credit for Individuals**: A one-time tax rebate included in the Economic Stimulus Act of 2008. The credit was based on information provided in the 2007 tax return, to be paid out in 2008. The maximum payment was $600 for single filers, $1,200 for married filers, and an additional $300 per qualifying child.[33]

- **Additional Standard Deduction for Real Estate**: Passed as part of the Housing Assistance Act of 2008 and extended for 2009 by the Emergency Economic Stabilization Act of 2009. Filers who took the standard deduction (all filers in the CEO tax model) and were homeowners could claim an additional standard deduction of up to $500 ($1,000 for married filers) against their local property taxes.

- **Additional Child Tax Credit**: The Additional Child Tax Credit is a refundable supplement to the Child Tax Credit. Prior to passage of the Emergency Economic Stabilization Act of 2008, the credit required a minimum earned income of over $12,050 in 2008 and $12,550 in 2009. The Act lowered the income threshold to $8,500 for 2008 and reduced it again to $3,000 in 2009. The result is that more filers with lower incomes receive a refundable credit.

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33. The Stimulus Act became law in early 2008, just as returns were being filed for 2007 taxes. It was paid as a tax refund, using 2007 income as an estimate for 2008 income. Filers who had already sent in a tax return could claim it retroactively, carrying their rebate into calendar year 2009. Filers whose 2008 income generated a different credit than that based on their 2007 return had to reconcile the difference in their 2008 return, filed in early 2009. We assume that all filers received the credit in calendar year 2008, at an amount based on the model's 2008 returns. We include no rebate credit in 2009. We assume this overestimates the amount of credit that was actually awarded in 2008 and underestimates it for 2009.

- **Making Work Pay Tax Credit (MWP)**: A credit of up to $400 ($800 for married filers). The CEO model added it as a refundable tax credit in 2009 and 2010. In 2009, the Economic Recovery Payment was deducted from the MWP for eligible recipients (see below).

- **Economic Recovery Payment**: A payment of $250 distributed in 2009 to recipients of Social Security or Supplemental Security Income (SSI) payments and Veterans or Railroad Retirement benefits. The ACS allows us to identify only Social Security and SSI recipients. Although not technically a tax credit, we included this payment as a tax offset.

- **Expansion of the Earned Income Tax Credit (EITC)**: Two changes occurred in 2009. First, the maximum credit for married filers increased in an acceleration of the already ongoing elimination of the marriage penalty in the EITC. Second, a third tier of credits was added to allow filers with more than two children to claim a larger credit. The maximum possible credit for a married couple with three children was $4,824 in 2008. In 2011, the maximum credit for this family rose to $5,751.

- **College Tuition Credits**: The tuition credit in the CEO model combines the Lifetime Learning Credit and, prior to 2009, the Hope Credit for college students in the tax unit. In 2009 the Hope Credit was replaced by the American Opportunity Credit. The new credit is up to 40 percent refundable.

- **Payroll Tax Cut**: The Making Work Pay Tax Credit expired and was replaced by a two percentage point cut in the payroll (FICA) tax in 2011. For most filers in the CEO model, this represented a cut in the tax rate for the Social Security portion of FICA from 6.2 to 4.2 percent of earned income.

Other changes occurred at the State and City level.

- **School Tax Relief Credit**: A credit against the income tax for New York City residents and funded by New York State. The credit was reduced significantly in 2009.

- **New York State and City Earned Income Credit**: No legislative change was made to these credits, but they are calculated at 30.0 percent and 5.0 percent of the Federal EITC, respectively. Thus, changes at the Federal level beginning in 2009 resulted in an expansion of the State and City EITC.

TABLE D ONE
Timing of Stimulus Tax Credits, 2008 - 2011

Tax/Credit	Years in Effect			
	2008	2009	2010	2011
Recovery Rebate Credit	X			
Additional Standard Deduction for Real Estate	X	X		
Additional Child Tax Credit Expansion (Refundable Part of Child Tax Credit)	X	X	X	X
Making Work Pay Credit		X	X	
Economic Recovery Payment		X		
EITC Marriage Penalty Elimination		X	X	X
EITC Third Child Tier		X	X	X
American Opportunity Credit (Refundable Tuition Credit)		X	X	X
Payroll Tax Cut				X

Taxes in Detail

This section compares tax liabilities and tax credits from 2007 to 2011. Tables D Two and D Three divide tax filers into two groups: Panel A consists of those filers with AGI from $1 to $25,000 and Panel B consists of filers with AGI from $25,001 to $50,000. This divides filers into those who are most likely to be poor, with incomes close to or below the poverty threshold, and those filers with incomes close to or somewhat above the poverty line. The division roughly illustrates the impact of tax programs as income rises.

Major Tax Components

Table D Two shows the major components of the tax model. Taxable Income is Adjusted Gross Income after standard deductions and exemptions. Pre-Credit Liability is the total Federal, State, and City income tax due on Taxable Income before any credits are applied. Federal, State, and City credits are the sum of tax credits received from each level of government. The Net Income Tax Effect is the total effect of the income tax system on resources. *A positive value for Net Income Tax Effect indicates that tax credit refunds are greater than the taxes owed.* In other words, the tax system generates a net gain to the taxpayer. *A negative number indicates a net loss to the taxpayer, since taxes paid are greater than taxes refunded.* In the case of FICA, we also use a negative sign indicating that payroll taxes are a subtraction from household resources.

Table D Two shows a decline in AGI from 2008 to 2011 in both panels. This in turn generates a lower Taxable

Income and a lower Pre-Credit Liability.[34] The table also shows a downward drift in the total value of tax credits received for all filers. Because credits are tied to the level of earnings, this is not surprising. The effect is compounded by the elimination of many stimulus credits by 2011, as shown in Tables D One and D Three.

Panel A of Table D Two shows that filers with AGI up to $25,000 have a positive value for their Net Income Tax Effect for each of the years shown, representing a net gain to CEO income after taxes. Prior to the expansion of tax credits in 2008, most filers in our lower income bracket had a relatively slight gain from total taxes. The Net Income Tax effect peaks in 2010.

Filers with AGI over $25,000 and up to $50,000, shown in Panel B, have an annual net loss to their household resources in all years after income taxes. This loss was greatest, $3.6 billion, in 2009, our peak wage year for this group.

In addition to income taxes, FICA (payroll taxes for Social Security and Medicare) is another piece of the total tax picture. The combined rate for both is 7.65 percent of wages, with the exception of 2011 when the combined rate was 5.65 percent.

The final line of each panel, Net Income Tax + Net FICA Effect, shows the combined effect of income and payroll taxes, including tax credits. Again, a positive number represents a net gain to the taxpayer and a negative number a net loss to the taxpayer. The greatest net gain

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34. The Real Estate Standard Deduction, applicable in 2008 and 2009, is the only tax policy in our model that impacts Taxable Income and Pre-Credit Liability.

for lower income tax payers occurred in 2010. Taxpayers in the higher income panel sustained the greatest loss of income in 2007 due to combined FICA and income taxes before the stimulus credits were in effect.

Changes in each of the individual tax credits from 2008 to 2011 are detailed in Table D Three. Total Tax Relief is the sum of all credits. Table D Three illustrates the

timing of each of the Federal stimulus tax credits. The Recovery Rebate Credit, Economic Recovery Payment, Making Work Pay Credit, and Real Estate Standard Deduction all expired by 2011. In 2011 what remained of the stimulus was the expanded and partly refundable Education Credit, Earned Income Tax Credit, and Additional Child Tax Credit – in addition to the FICA tax cut. At the City level, the School Tax Credit (STAR)

TABLE D TWO
Components of Net Income Tax Effect, 2007 - 2011

Total Dollar Value (in $1,000s)

A. Adjusted Gross Income, $1 - $25,000

	2007	2008	2009	2010	2011	Percentage Change 2007-2011
Adjusted Gross Income	16,036,286	15,731,659	16,865,640	15,636,576	15,620,526	-2.6%
Taxable Income	4,527,177	4,227,371	4,518,635	3,976,937	3,826,554	-15.5%
Pre-Credit Liability	904,764	855,792	941,983	821,874	807,557	-10.7%
Federal Credits	1,310,765	1,978,182	2,132,280	2,035,463	1,764,221	34.6%
State Credits	456,504	467,508	491,610	488,840	510,781	11.9%
City Credits	257,107	253,949	155,999	151,107	154,534	-39.9%
Net Income Tax Effect**	1,119,612	1,843,847	1,837,907	1,853,537	1,621,979	44.9%
Payroll Tax (FICA)	-1,079,970	-1,049,073	-1,129,458	-1,039,471	-1,050,292†	-2.7%
FICA Tax Cut	N.A.	N.A.	N.A.	N.A.	228,535	N.A.
Net Income Tax + Net FICA Effect	**39,642**	**794,774**	**708,449**	**814,066**	**800,222**	**1918.6%**

B. Adjusted Gross Income, $25,001 - $50,000

	2007	2008	2009	2010	2011	Percentage Change 2007-2011
Adjusted Gross Income	37,918,283	38,328,575	39,634,232	36,384,290	34,888,967	-8.0%
Taxable Income	23,812,653	23,988,192	24,546,518	21,994,918	20,670,389	-13.2%
Pre-Credit Liability	5,260,524	5,319,350	5,517,927	4,883,460	4,599,268	-12.6%
Federal Credits*	785,936	1,687,474	1,507,986	1,492,909	1,078,601	37.2%
State Credits	235,789	246,770	281,553	286,127	297,151	26.0%
City Credits	201,610	201,101	100,932	98,177	97,800	-51.5%
Net Income Tax Effect**	-4,037,189	-3,184,006	-3,627,456	-3,006,246	-3,125,716	-22.6%
Payroll Tax (FICA)	-2,767,443	-2,783,842	-2,880,777	-2,629,931	-2,540,607†	-8.2%
FICA Tax Cut	N.A.	N.A.	N.A.	N.A.	597,094	N.A.
Net Income Tax + Net FICA Effect	**-6,804,632**	**-5,967,847**	**-6,508,233**	**-5,636,177**	**-5,069,229**	**-25.5%**

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
* Includes Economic Recovery Payment to Social Security Recipients in 2009.
**Net Income Tax differs slightly from pre-credit liability net of credits due to rounding and limits on some non-refundable credits by tax liability.
†Payroll Tax in 2011 is estimated as if there were no tax cut; the tax cut is then estimated separately and included in the Net Income Tax and FICA Effect. The sign of net income tax effect indicates effect of taxes on household income.

TABLE D THREE
Selected Tax Credits, 2007 - 2011

Total Dollar Value (in $1,000s)

	A. Adjusted Gross Income $1 - $25,000						B. Adjusted Gross Income $25,001 - $50,000					
	2007	2008	2009	2010	2011	Percentage Change 2007-2011	2007	2008	2009	2010	2011	Percentage Change 2007-2011
Federal												
Child and Dependent Care Credit	2,767	1,984	2,305	1,248	2,245	-18.9%	16,237	15,119	17,796	13,460	14,701	-9.5%
Child Tax Credit (+ACTC)*	157,010	216,132	332,651	319,396	337,169	114.7%	398,617	394,021	407,915	390,837	397,920	-0.2%
Elderly and Dependent Credit	1,150	816	918	1,025	1,096	-4.7%	0	0	0	0	0	N.A.
Education Credit**	32,407	34,284	114,527	115,118	115,687	257.0%	132,295	149,021	217,178	217,692	213,838	61.6%
Earned Income Credit Federal	1,117,430	1,146,788	1,256,403	1,244,591	1,309,275	17.2%	238,788	275,084	374,439	415,528	452,141	89.3%
Real Estate Standard Deduction	N.A.	92,361	94,848	N.A.	N.A.	N.A.	N.A.	89,740	96,180	N.A.	N.A.	N.A.
Recovery Rebate Credit	N.A.	619,728	N.A.	N.A.	N.A.	N.A.	N.A.	854,228	N.A.	N.A.	N.A.	N.A.
Economic Recovery Payment	N.A.	N.A.	98,267	N.A.	N.A.	N.A.	N.A.	N.A.	21,292	N.A.	N.A.	N.A.
Making Work Pay Credit	N.A.	N.A.	363,561	356,024	N.A.	N.A.	N.A.	N.A.	469,366	455,391	N.A.	N.A.
Payroll Tax Cut	N.A.	N.A.	N.A.	N.A.	251,411	N.A.	N.A.	N.A.	N.A.	N.A.	597,094	N.A.
New York State												
Household Credit	37,432	36,712	40,554	37,495	38,009	1.5%	7,141	7,016	6,192	6,751	6,830	-4.4%
Child and Dependent Care Credit	3,044	2,182	2,535	1,372	2,470	-18.9%	16,787	15,632	18,310	13,914	15,195	-9.5%
Child Tax Credit	40,690	33,858	23,853	20,581	20,797	-48.9%	89,461	88,979	88,321	77,628	79,048	-11.6%
Tuition Credit	70,850	84,267	87,184	94,795	101,881	43.8%	55,439	57,173	60,357	67,642	64,949	17.2%
Real Property Tax Credit	1,685	1,819	1,983	1,786	2,136	26.8%	0	0	0	0	0	N.A.
Earned Income Credit NYS	318,430	327,168	358,171	356,423	375,108	17.8%	66,961	77,969	108,372	120,193	131,129	95.8%
New York City												
Household Credit	9,733	9,613	9,919	9,513	9,829	1.0%	0	0	0	0	0	N.A.
School Tax Credit (STAR)	234,559	231,392	103,792	101,783	104,232	-55.6%	189,032	186,488	81,447	77,137	74,567	-60.6%
Child and Dependent Care Credit	1,108	713	989	259	1,038	-6.3%	639	859	763	264	626	-2.1%
Earned Income Credit NYC	55,871	57,339	62,820	62,230	65,464	17.2%	11,939	13,754	18,722	20,776	22,607	89.3%
Total Tax Relief	2,084,167	2,897,157	2,955,280	2,723,638	2,737,847	31.4%	1,223,335	2,225,084	1,986,651	1,877,214	2,070,646	69.3%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
*Includes refundable additional child tax credit.
**Combines American Opportunity Credit and Hope Credit in 2008; American Opportunity Credit and Lifetime Learning Credit in 2009 and 2010.
Notes: N.A. - Not applicable in that tax year. The sum of nonrefundable credits may be limited by total tax liability at the level of individual filers.

was cut nearly in half in 2009. Only New York State tax credits continued to rise. There were no changes in State tax policy, but the State (and City) EITC grew as a function of the rise in the Federal EITC.

For lower income taxpayers in Panel A, the greatest assistance from tax credits occurred in 2009 at nearly $3 billion in total credits from Federal, State, and City sources. For the higher income group in Panel B, tax relief peaked in 2008 at over $2 billion. The most notable increases in tax credits were the changes in the Federal EITC described above and the tuition credit, which was no longer capped by tax liability and instead was made partially refundable.[35]

Comparing the Make Work Pay Credit to the Payroll Tax Cut

In 2011 the Making Work Pay Credit was replaced with the Payroll Tax Cut. The MWP credit was designed to provide greater after tax income in 2009 and 2010. Most wage earners received the maximum allowable MWP Credit of $400 per person ($800 for married couples filing a joint return). But the lowest earning filers received less. The maximum credit only occurs when income reaches $6,451 ($12,903 if married). Below this amount, the credit phased in at a rate of 6.5 percent of income.[36]

The Payroll Tax Cut (PTC) was not a cut in income taxes. Instead, it affected Social Security payments. The Social Security component of FICA withholding is normally 6.2 percent of wages. In 2011 this was temporarily lowered to 4.2 percent. In essence the PTC was a two percentage point tax cut on all earned income under $106,800 (the point where Social Security taxable income was capped in 2011). The maximum cut was $2,136.

For tax filers, the shift in tax programs constituted a difference between a tax credit equal to 6.5 percent of earned income, up to $400 per person, and a credit equal to two percent of earned income but not capped until income reached $106,800. For filers near the poverty threshold, the Payroll Tax Cut was less generous than the Making Work Pay Credit.

We illustrate the difference between the MWP and PTC by estimating a hypothetical MWP Credit for 2011. This allows us to use the same earnings data to compare the two tax programs. Table D Four compares the mean value of the two credits. Earned income is shown in $5,000 increments for each type of filer. For married couples, the payroll tax cut is consistently smaller until household combined income passes $45,000. Single parent households don't benefit from the program change until income passes $20,000. Single filers need income over $25,000 to reap more benefit from the change.

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35. This is solely an increase in the tuition tax credit and does not include the itemized tuition deduction. The CEO tax model does not include itemized deductions.
36. Those with earnings over $75,000 ($150,000 if married) also received less. The MWP phased out to zero as incomes rose.

TABLE D FOUR

Comparing a Hypothetical Make Work Pay Credit to Actual Payroll Tax Cut by Type of Filer, 2011

Bold type indicates point where payroll tax cut exceeds Making Work Pay Credit.

	Mean Payment ($)							
	Married Filing Joint		**Head of Household**		**Single**		**Total**	
Earned Income ($)	Making Work Pay Credit	Payroll Tax Cut	Making Work Pay Credit	Payroll Tax Cut	Making Work Pay Credit	Payroll Tax Cut	Making Work Pay Credit	Payroll Tax Cut
0-5,000	158	6	155	17	162	9	160	10
5,000-10000	455	132	381	122	379	135	388	130
10,000-15,000	739	211	400	226	400	216	455	218
15,000-20,000	800	299	399	318	400	308	484	308
20,000-25,000	800	422	**400**	**421**	399	401	492	411
25,000-30,000	799	498	400	511	**400**	**493**	**491**	**499**
30,000-35,000	800	605	400	618	400	602	488	606
35,000-40,000	800	694	400	710	400	701	505	702
40,000-45,000	800	772	400	823	400	810	508	802
45,000-50,000	**798**	**885**	397	922	399	879	511	887
50,000 +	754	2,838	357	1,723	343	2,009	553	2,379
Total	752	1,741	373	590	369	819	488	1,055

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

Taxes and the Poverty Rate

The poverty rate would be higher in the absence of net taxation. For low income New Yorkers, payroll and income taxes are offset by tax credits large enough that the tax system creates an addition to their total resources. Table D Five illustrates the impact of taxation on the poverty rate. The table compares poverty rates that are calculated net of the tax effect to poverty rates calculated with total CEO income including a tax effect. The benefit of stimulus programs is apparent. The effect of income tax credits was consistent during the years of peak stimulus credits, 2008-2010, generating a 4.3 percentage point effect on the poverty rate in each year. This fell to a 3.6 percentage point effect by 2011. Compare this to the years 2005-2007, before the enactment of tax stimulus programs. In those years, the marginal impact of income taxes in offsetting poverty averaged 2.9 percentage

points. Chapter Five of this report provides more details on the effect of the stimulus-related credits.

Some of the income tax benefit is offset by mandatory payroll taxes. The marginal effect of FICA reduces the poverty rate on average by 2.0 percentage points from 2005 to 2011, yet taxes still have an overall positive effect on household resources. The FICA tax cut in 2011 provided some relief from the payroll tax, as shown in Tables D Two and D Three. Thus the effect of FICA on the poverty rate declines from 2.1 percentage points in 2010 to 1.8 percentage points in 2011. The net effect on the poverty rate was minimal. Measuring the combined effect of payroll and income taxes we find that taxes account for a 2.1 percent decline in the CEO poverty rate in 2011. In the absence of payroll and income tax, the CEO poverty rate of 21.3 percent in 2011 would have been 23.4 percent.

TABLE D FIVE
Impact of Net Taxes on Poverty Rates, 2005 - 2011
(Numbers are Percent of the Population)

	2005	2006	2007	2008	2009	2010	2011
A. Poverty Rates							
Total CEO Income	20.3	19.8	19.8	19.0	19.7	20.9	21.3
Net of:							
Income Taxes	23.3	22.7	22.7	23.3	24.0	25.2	24.9
FICA (Payroll Taxes)	18.5	17.6	17.7	17.0	17.6	18.8	19.5
Income Taxes and FICA	21.5	20.7	20.5	21.2	21.9	22.9	23.4
B. Marginal Effects							
Income Taxes	-3.0	-2.9	-2.9	-4.3	-4.3	-4.3	-3.6
FICA (Payroll Taxes)	1.8	2.2	2.1	2.0	2.0	2.1	1.8
Income Taxes and FICA	-1.2	-0.9	-0.7	-2.2	-2.2	-2.1	-2.1

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

APPENDIX E: ESTIMATING THE VALUE OF NUTRITIONAL ASSISTANCE

Food Stamps

Data in the American Community Survey (ACS) about Food Stamp participation are very limited. First, as of 2008, the ACS only indicates whether a member of a household received Food Stamps at any time in the prior 12 months, providing no information on the value or duration of the benefit.[37] This must be estimated. CEO's decision to make use of New York City administrative data as its source for imputing the value of Food Stamps received leads to a second problem: Food Stamp participation in the ACS is reported at the household level, which differs from a typical Food Stamp case. A household is comprised of persons who share residence in a housing unit. A Food Stamp case, in contrast, includes household members who purchase and prepare food in common. The distinction shows up clearly in the data. In 2011, for example, the average New York City Food Stamp case had 1.85 members, while the average ACS household reporting Food Stamp receipt had 2.99 members. A third problem is underreporting of program participation.

CEO's method for imputing the yearly value of Food Stamps thus entails three steps: 1) creating Food Stamp units within ACS household units; 2) estimating the value of yearly Food Stamp receipt; and 3) adjusting the number of Food Stamp cases created in the ACS data to correct for underreporting.

To create commensurable units, CEO developed a program to divide ACS households into the maximum number of "Food Stamp units" that the program rules allow. The Supplemental Nutrition Assistance Program (SNAP) uses the following rules to determine who in a household must be in the same Food Stamp case:

1. Spouses.

2. Parents and children under 22, including spouses of these children, and grandchildren.

3. A child under 18 living with, and under the parental control of, an adult that provides 50 percent or more of the minor child's support.

4. Anyone else in the household that purchases and prepares food together.

The first three of these rules are based on relationships within the household. Some of these are readily described by variables in the ACS. Others are not and must be created. To construct these relationships, we used the minimal household unit (MHU) program, which was originally written by Jeff Passel, Senior Demographer at the Pew Hispanic Center. The MHU program is designed to parse an ACS household into its smallest family units.[38] The program loops through the data, linking individuals within the household by kinship and marriage. This work creates Food Stamp units that conform to the first three rules listed above.

Because CEO does not attempt to infer who else in the household is purchasing and preparing food together, the program creates the maximum number of Food Stamp units within each household allowable under SNAP rules. The size and composition of the Food Stamp cases produced with this method accurately reproduce that of the cases in the administrative data. In 2011, for example, the proportion of single-person Food Stamp cases created in the ACS (57.4 percent) is quite close to the proportion of single-person cases in the administrative data (56.7 percent). Using the Food Stamp unit rather than the ACS household also increases the estimated number of Food Stamp cases in the 2011 ACS from 620,132 (55 percent of the administrative total) to 954,310 (85 percent of the administrative total).

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37. The decision to drop the question about the value of Food Stamps received was influenced by the Census Bureau's testing of the ACS questionnaire, which revealed that respondents were more likely to indicate receipt of the benefit if the follow-up question about the value of the benefit did not appear in the survey instrument. See: www.census.gov/acs/www/Downloads/methodology/content_test/H6_Food_Stamps.pdf

38. Passel, Jeffrey. "Editing Family Data in Census 2000 Public-Use Microdata Samples: Creating Minimal Household Units (MHUs)." August 2002.

TABLE E ONE
Percentage Distribution of Food Stamp Cases by Size, 2011

Size	ACS Households		CEO Food Stamp Units		Administrative Cases	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	168,078	27.1%	547,456	57.4%	635,229	56.7%
2	129,641	20.9%	165,872	17.4%	230,933	20.6%
3	105,170	17.0%	103,665	10.9%	133,215	11.9%
4	98,747	15.9%	76,410	8.0%	70,536	6.3%
5	56,357	9.1%	34,143	3.6%	29,283	2.6%
6	31,654	5.1%	13,810	1.4%	11,561	1.0%
7	15,612	2.5%	6,721	0.7%	4,739	0.4%
8	6,902	1.1%	2,683	0.3%	2,531	0.2%
9	3,488	0.6%	1,597	0.2%	1,356	0.1%
10 or More	4,483	0.7%	1,953	0.4%	1,481	0.1%
Total	620,132	100.0%	954,310	100.0%	1,120,864	100.0%

Sources: American Community Survey Public Use Micro Sample as augmented by CEO and New York City Human Resources Administration.

Once commensurable units are created, we begin the Food Stamp value estimation process by compiling administrative data on Food Stamp cases in New York City from the Human Resources Administration's internal database. The data includes all cases in New York City that were active for any period between July and June of the appropriate year. This period is chosen because it represents the mid-point in the ACS rolling sample, helping to ensure that the administrative data is comparable to the ACS data. To preserve comparability with our poverty universe, individuals in group quarters are removed from both the administrative data and the ACS sample.

The administrative data set contains demographic information about the Food Stamp case heads and families, as well as relevant budget information such as household income. For each case, we sum the total of Food Stamp payments over the previous year. Using this data, we developed a regression model using the demographic characteristics present in both the administrative and ACS data sets in order to predict the yearly value of Food Stamp payments to families in New York City.

We focus on variables that are strongly predictive of Food Stamp benefits and for which high quality data exists in both the ACS and administrative data sets. Case size is, unsurprisingly, the strongest predictor of benefit level. Further, the number of children, and the dummy variables for elderly case head and elderly or disabled member in the case are also predictive of the benefit level. This is likely due to the fact that it is easier for these groups to remain on Food Stamps longer since they are not subject to work requirements. Age of the case head is included as a proxy for factors such as work status.[39] The coefficient on the age of the case head is positive in all four years, even controlling for elderly status. This may be because the probability of employment among low-income New Yorkers declines after age 50, which would lead to an increasing benefit with age in the administrative data that is independent of elderly status.

The ACS and administrative data are constructed differently and are utilized for very different purposes, a fact that complicates the development of a regression model. This is a particular issue with regard to measuring income, an important determinant of benefit levels. While the ACS reports yearly cash income from all sources, the administrative data only contain the monthly income reported on the Food Stamp application. This creates two challenges. First, families often apply for Food Stamps after an income shock, such as a job loss, yielding a potentially biased estimate of the family's income over the past year. Second, Food Stamp applicants are allowed to make deductions from their gross income to qualify for the program, further complicating comparisons of the two variables.

39. While the New York City administrative database does contain information on work status of Food Stamp recipients, this data is generally low quality and contains large numbers of missing observations. As a result, we decided to use the age proxy in the regression model.

In order to address this comparability issue, we construct a net income measure in the ACS that represents an estimate of what a Food Stamp unit would report on a Food Stamp application. We aggregate personal income to the Food Stamp unit and divide it by 12 to get a monthly estimate. We then apply the various income deductions allowed on the Food Stamp application, including a standard deduction and deductions for childcare expenses and medical expenses for elderly applicants.

This constructed net income measure has a similar distribution to that of the income reported in the administrative data, with positive values beginning at the 75th percentile. Given the highly skewed nature of this distribution, where most observations have a value of zero, we feel that a linear model would produce incoherent results. Instead, we convert the income data into a categorical variable with three categories: 1) income between zero and the 74th percentile; 2) income between the 75th and 89th percentile; and 3) income at or above the 90th percentile. We tested numerous regression specifications, evaluating them on the basis of fit. The final model is generally consistent over the years 2005-2011.

As noted above, the ACS contains data on whether a household received Food Stamps for some period over the previous year, but does not contain data on how many months the household participated in the program. This is, potentially, a source of unexplained variation, as a household receiving Food Stamps for six months will have a lower yearly value than a household receiving them for the full year, holding other factors constant. However, using a model that cannot include a months-of-receipt variable is justified for two reasons. First, the variables included in regression correlate with the months-of-receipt variable in the administrative sample. As a result, a good deal of the variation in the months-of-receipt variable is captured by the coefficients in the included variables. Second, since this model is used for prediction rather than inference, we are less concerned with potential omitted variable bias in the individual coefficients.

TABLE E TWO
Regression Model of Yearly Food Stamp Value, 2005 - 2011

Variable	2005	2006	2007	2008	2009	2010	2011
Intercept	-352.64 [-6.93]	-473.88 [-9.15]	-538.12 [-10.94]	-498.71 [-10.16]	-514.70 [-11.41]	-483.60 [-8.80]	-779.10 [-16.00]
Income between 75-89th Percentile	-179.44 [-10.12]	-117.88 [-6.35]	-166.38 [-8.93]	-162.43 [-8.19]	-478.60 [-27.41]	-120.73 [-6.05]	-176.30 [-11.53]
Income at or above 90th Percentile	-950.89 [-46.10]	-899.14 [-43.01]	-784.82 [-39.51]	-842.82 [-39.76]	-1342.00 [-61.51]	-874.46 [-35.36]	-1222.00 [-55.82]
Household Size	860.69 [103.83]	874.84 [102.70]	834.70 [100.75]	846.46 [53.45]	1010.00 [67.35]	1051.50 [64.28]	1239.00 [85.37]
Number of Children	108.16 [14.86]	120.69 [16.00]	162.44 [21.69]	144.07 [11.23]	170.00 [14.21]	137.54 [10.49]	130.80 [11.43]
Elderly Household Head	70.34 [2.51]	101.11 [3.47]	98.76 [3.55]	120.36 [3.93]	118.90 [3.75]	140.63 [4.10]	43.44 [1.45]
Elderly or Disabled Person in Unit	101.34 [6.04]	91.31 [5.27]	189.05 [11.14]	194.13 [10.91]	372.00 [21.67]	312.45 [16.23]	509.70 [29.40]
Age of Household Head	15.61 [7.61]	22.47 [10.53]	23.36 [11.59]	24.60 [11.51]	27.46 [13.30]	35.23 [14.82]	35.18 [16.88]
Age of Household Head Squared	-0.10 [-4.57]	-0.16 [-7.16]	-0.16 [-7.57]	-0.17 [-7.59]	-0.22 [-9.49]	-0.27 [-10.63]	-0.25 [-11.55]
R^2	0.588	0.583	0.562	0.553	0.594	0.530	0.593

Source: New York City Human Resources Administration.
Notes: The dependent variable is the annual value of Food Stamps. "Income" is net of deductions allowable by Food Stamp program rules. t-statistics in brackets.

We then match the administrative data into the ACS through a predictive mean match (PMM).[40] First, we use the regression coefficients to estimate Food Stamp values for observations in the ACS and in the administrative data. These ACS and administrative values are then matched using a nearest neighbor algorithm, whereby an ACS case would be matched with the administrative case with the closest estimated value, with the added constraint that both the host and donor cases are in the same Community District.[41] This additional match criterion is designed to capture neighborhood effects that were not explicitly in the model. The ACS case was then given the actual Food Stamp value from the administrative case. Once an administrative case donates its value to an ACS case, it is removed from the donor pool.

program to some of the apparently eligible units that did not report receipt. There are several possible reasons for not reporting receipt. Unfortunately, none of these factors are directly measureable in the ACS, which limits our ability to model underreporting of participation.

What is known is that Food Stamp participation is highly correlated with participation in other income support programs, such as Public Assistance (PA) and Supplemental Security Income (SSI). Analysis of administrative data shows that nearly all participants in means-tested cash benefit programs also receive Food Stamps. We assign Food Stamp values to individuals who were eligible for Food Stamps and reported PA or SSI receipt, but did not report Food Stamp receipt.[42] Adding these cases increased the number of Food Stamp units from 954,310 to 1,046,968 in 2011.

TABLE E THREE
Comparison of Self-Reported and Estimated Food Stamp Values, 2011

	Cases		Individuals		Aggregate Value	
	Number	Ratio	Number	Ratio	Number	Ratio
ACS Households, Self-Reported Participation	620,132	0.55	1,853,371	0.89	N.A.	N.A.
CEO Food Stamp Units, Self-Reported Participation, Estimated Value	954,310	0.85	1,853,371	0.89	$2,716,464,386	0.94
CEO Food Stamp Units, Estimated Value, Case Adjusted	1,046,968	0.93	2,003,726	0.97	$2,862,232,366	0.99
Administrative	1,120,864	1.00	2,076,255	1.00	$2,904,360,178	1.00

Sources: American Community Survey Public Use Micro Sample as augmented by CEO and New York City Human Resources Administration.
Note: "Ratio" compares the estimated value to administrative data.
N.A. - Not applicable due to the fact that the unadjusted ACS does not contain data on the value of the Food Stamp benefit.

The advantage of using PMM rather than simply using the estimated values is that PMM does a better job at preserving the actual distribution of Food Stamp values. Regression estimates accurately capture the mean and aggregate values of the distribution, but yield considerably less variation than seen in the administrative data. This is unsurprising, given the fact that regressions are designed to model means rather than full distributions.

Given the gap between the number of Food Stamp cases in the administrative data and the number of cases in the ACS households reporting Food Stamp receipt, CEO decided to assign participation in the Food Stamp

The CEO Food Stamp estimates of the trends in Food Stamp receipt from 2005 to 2011 are reported in Figure E One. They come close to replicating the observed trends in the administrative data, but do not do so exactly. Specifically, while the administrative data shows a consistent upward trend over these years, the CEO estimates show a decrease in cases and aggregate value from 2006 to 2007, which interrupts the overall pattern of increases. This is likely the result of sampling variability in the ACS. Additionally, the CEO estimates show a larger spike in the number of cases between 2007 and 2008 than seen in the administrative data. This may be a result of the change in the question regarding Food Stamps in the 2008 ACS survey, described above.

40. See O'Donnell, Sharon and Rodney Beard, "Imputing Medical Out-of-Pocket (MOOP) Expenditures using SIPP and MEPS," 2009, for an application of this method in a similar context.
41. The ACS's public use micro sample areas are constructed to match New York City's Community Districts.

42. "Eligible" is defined using the SNAP program rules, requiring that the recipient be a citizen or legal resident for five years or more with a gross income less than 130 percent of the official poverty line.

Finally, growth in both the ACS and CEO estimates between 2009 and 2010 is higher than reflected in the administrative data.

Developing Hypothetical Food Stamp Data

The impact of the Food Stamp program on the New York City poverty rate has grown in recent years, from a 2.1 percentage point reduction in 2008 to a 3.6 percentage point reduction in 2011.[43] The program's growing impact on poverty in New York City is the result of three factors, two of which were recent, deliberate policy decisions: 1) an outreach initiative in New York City aimed at increasing participation among eligible households; 2) the 13.6 percent increase in Food Stamp benefit amount in the 2009 American Recovery and Reinvestment Act (ARRA); and 3) an increase in demand for Food Stamps

in response to the recession. In order to understand the impact of Food Stamp policy changes on the poverty rate, independent of the growth in demand from the recession, we need to parse these different factors. We do this by creating a counterfactual data series to go along with the observed ACS data.

First, we re-estimate Food Stamp data in the 2009, 2010, and 2011 ACS assuming no ARRA. Maximum Food Stamp benefit allotments are based on the USDA's Thrifty Food Plan (TFP) for a family of four. Each October, for the new fiscal year, the prior year's SNAP maximum benefits are adjusted for changes in the TFP for the most recent June over the prior year's June TFP for a family of four consisting of a couple (19-50 years) and two children (6-8 and 9-11 years). Using the TFP data[44] for 2009-2011, we estimated the maximum benefit levels for

FIGURE E ONE
Food Stamp Recipients, 2005 - 2011
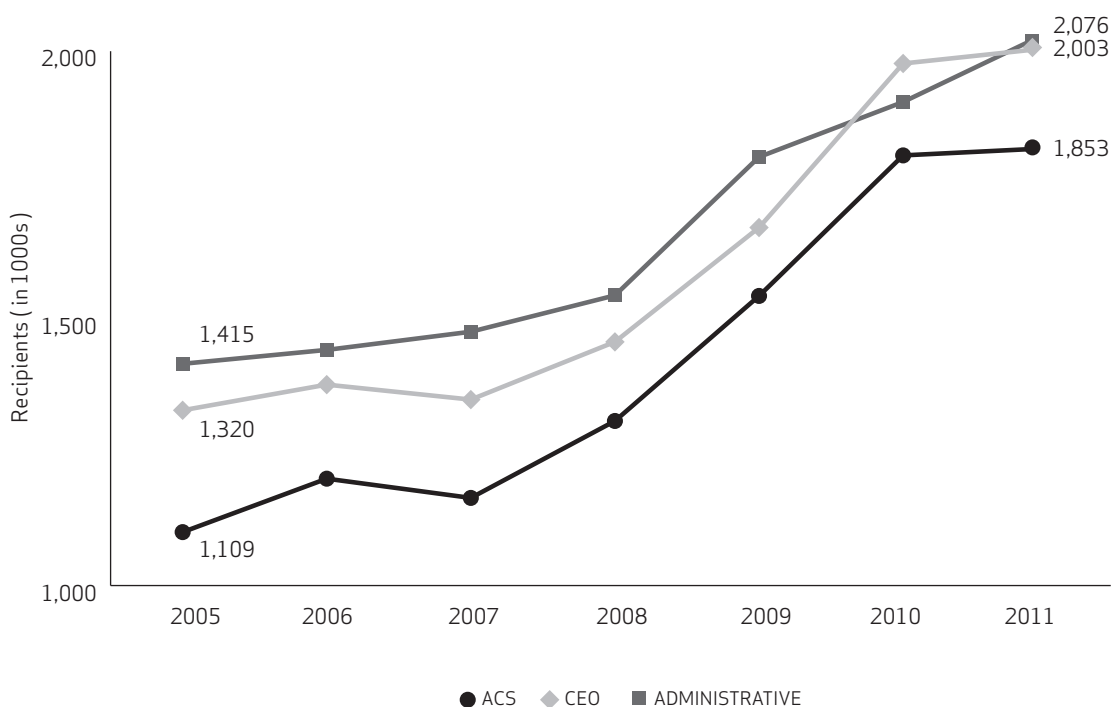
Sources: Tabulated from American Community Survey Public Use Micro Sample as augmented by CEO and New York City Human Resources Administration.
Note: "ACS" refers to unadjusted values.

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43. See Table E Seven below.

44. USDA TFP data can be found at: www.cnpp.usda.gov/USDAFoodCost-Home.htm

these years in the absence of the ARRA. We estimate that the maximum Food Stamp allotments would have been 12.0 percent lower in 2009, 12.8 percent lower in 2010, and 12.9 percent lower in 2011 without the ARRA.[45] We used these estimates to deflate the Food Stamp data in these three years. The mean Food Stamp values (per Food Stamp units) are shown in Table E Four.

TABLE E FOUR

Mean Food Stamp Value per Food Stamp Unit, 2009 - 2011

	2009	2010	2011
CEO Estimate	$2,391	$2,774	$2,840
Hypothetical	$2,009	$2,406	$2,472
Percentage Difference	16.0%	13.3%	13.0%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

Second, we look at the role of local policy in expanding Food Stamp participation, independent of the impact of the recession. In order to assess the role of local policy, we decompose the growth in Food Stamp cases into two components: increased demand resulting from the recession and increased "supply" from the local outreach campaign. We do so by compiling data on monthly Food Stamp caseloads and monthly payroll employment (seasonally adjusted) for New York City from June 1999 to December 2011. Using this data, we develop a time-series regression model that estimates the relationship between Food Stamp caseloads and labor market conditions. The results of the regression are shown in Table E Five following.

TABLE E FIVE

Regression Model of Food Stamp Caseload and Employment

Variable	Estimate
Intercept	0.002 [2.34]
Food Stamp Caseload Growth Rate (lagged one month)	0.329 [4.11]
Food Stamp Caseload Growth Rate (lagged two months)	0.294 [3.72]
Payroll Employment Growth Rate (lagged one month)	-0.426 [-1.88]
Payroll Employment Growth Rate (lagged two months)	0.266 [1.17]
N	148
R^2	0.307

Sources: New York City Human Resources Administration and U.S. Bureau of Labor Statistics.
Notes: t-statistics in brackets.
Data covers the period June 1999 - December 2011.
The dependent variable is the month-over-month growth rate in the Food Stamp caseload.

Using this model, we construct predicted values for the growth rate of the Food Stamp caseload, based on the lagged value of the growth in payroll employment and keeping the other factors constant. This data represents a counterfactual series that approximates the growth of caseloads based solely on the employment situation in New York City, absent the outreach effort and increase in benefit level. This alternative scenario yields caseloads 2.5 percent lower than the observed data in 2008, 4.2 percent lower in 2009, 5.6 percent lower in 2010, and 5.3 percent lower in 2011, as is shown in Table E Six below.

TABLE E SIX

Number of Food Stamp Cases, 2008 - 2011

	2008	2009	2010	2011
CEO Estimate	771,225	873,127	1,025,575	1,046,968
Hypothetical	751,974	836,576	968,153	991,639
Percentage Difference	2.5%	4.2%	5.6%	5.3%

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

The ARRA benefit increase and the Food Stamp outreach initiative had a noticeable impact on the poverty rate in 2009-2011, though not in 2008. Table E Seven shows the total impact of Food Stamps on the poverty rate, as well as the specific impact of Food Stamp policies. These policies lowered the poverty rate by 0.4 percentage points in 2009, and by 0.7 and 0.6 percentage points in 2010 and 2011, respectively.

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45. In the absence of the ARRA, SNAP benefits for each fiscal year are based on the Thrifty Food Plan for June of the prior year. Since there was a slight decline in food prices from 2008 to 2009 and 2009 to 2010, the maximum benefit levels would have declined as well. This decline leads to a growing difference between the benefit levels with and without the ARRA over this period.

Impact of Food Stamp Policy on the New York City Poverty Rate, 2008 - 2011

(Numbers are Percent of the Population)

	2008	2009	2010	2011
A. Poverty Rates				
Total CEO Income	19.0	19.6	20.9	21.3
Net of:				
Food Stamps	21.2	22.3	24.4	24.9
Food Stamp Policy	19.1	20.1	21.6	21.8
B. Marginal Effect				
Food Stamps	-2.1	-2.7	-3.5	-3.6
Food Stamps without Change in Policy	-2.1	-2.2	-2.8	-3.1
Change in Policy	-0.1	-0.4	-0.7	-0.6

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

Subsidized School Meals

The National School Lunch Program (NSLP) and the School Breakfast Program (SBP) offer free and reduced-price meals to low-income students. Free meals are provided to children with family income below 130 percent of the Federal Poverty Guidelines (FPG), and reduced-price lunches are provided to children with family income between 130 and 185 percent of the FPG. All school breakfasts in New York City are served free of charge.

The ACS does not contain information on whether children receive free or reduced-price school meals; therefore we model participation in these programs in our augmented ACS data set. Although participation in the subsidized school meals programs is widespread, it is not universal among eligible families.[46] Table E Eight indicates, for example, that out of nearly 715,000 eligible school children, only about 516,000 free or reduced price meals were served, on average, per school day.

Comparison of Eligibility to Participation in the National School Lunch Program, 2011

Grade Level	Eligible for Free or Reduced-Price School Lunch	Receiving Free or Reduced-Price Lunch
Elementary	334,284	327,946
Middle	159,724	100,866
High	220,717	86,784
Total	714,725	515,596

Sources: American Community Survey as augmented by CEO and New York City Department of Education.
Note: Receiving is measured as the average number of meals served per day in the 2010-2011 school year.

Given this difference we must estimate which families would be participating in the programs. We do so via a statistical model that assigns a probability that an eligible family would participate in either the NSLP or SBP program, given a set of characteristics that can be measured by variables that are available in the ACS. The model is estimated using New York City families that are included in the Census Bureau's Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS). The CPS is a national-level survey with a very limited sample for local areas. To muster a sufficiently large number of observations, we pool six years of data. For this year's analysis we use the 2007 through 2012 ASEC, which provides information on participation in 2006 through 2011. The model's householder characteristics and household variables, as well as their coefficient values and their statistical significance, are provided in Table E Nine.

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46. Research (much of it sponsored by the U.S. Department of Agriculture) suggests that only about 75 percent of eligible students participate in the NSLP and as children get older they are less likely to participate.

TABLE E NINE

Logit Regression Model of School Meals Participation, Coefficient Definitions and Values, 2006 - 2011

Household Head Characteristics		B	S.E.	Exp(B)
Race/Ethnicity	Non-Hispanic White	-.211	.006	.810
	Non-Hispanic Black	.191	.005	1.211
	Hispanic	.510	.005	1.665
	Other Race/Ethnicity (Omitted Variable)			
Education	High School Graduate through College Graduate	-.131	.003	.877
	Master's Degree or Higher	-.237	.009	.789
	Less Than High School (Omitted Variable)			
Citizenship	Foreign Born, Citizen by Naturalization	.198	.004	1.220
	Foreign Born, Not a Citizen	.278	.004	1.321
	Citizen by Birth (Omitted Variable)			
Work Experience	Works Less Than Full-Time, Year Round	-.195	.004	.823
	Does Not Work	-.246	.004	.782
	Works Full-Time, Year Round (Omitted Variable)			
Household Characteristics				
	Female Householder	.228	.004	1.256
	Age of Householder	-.007	.000	.993
	Age of Youngest School-aged Child	-.080	.000	.923
	Single Householder	.462	.003	1.587
	Number of Persons in Household	-.061	.001	.941
	Household Receives Food Stamps	1.034	.003	2.813
	Household Income/Poverty Guideline Ratio	-.402	.002	.669
	Constant	1.515	.010	4.552

Source: Current Population Survey Annual Social and Economic Supplement, New York City Sample, 2007-2012.
Notes: All coefficients significant at the $p < 0.01$. Analysis used the household weight. Dependent Variable, HFLUNCH, recoded to a binary. N = 1431.

In the ACS, we flag as eligible for free or reduced-price meals poverty units with school-age children[47] that have incomes below 185 percent of the poverty guideline, or are receiving Food Stamps, or have a member that was receiving Public Assistance. We then apply the model's coefficients to calculate each eligible poverty unit's probability of participation. These values fall between 0 and 1, with 1 being the highest probability of participation. Once the probability is calculated, we use New York City Department of Education (DOE) administrative data as our target number for assigning participation.

Our estimates account for those students that participated in Provision 2 of the NSLP, which is a program designed to reduce the administrative cost of determining eligibility by allowing schools to provide

free lunch to everyone, regardless of eligibility, for four years. Provision 2 required us to assign free meal values to some students who – given their families' income – would be receiving reduced-price school meals. The adjustment is made so that the distribution of students in the ACS who are estimated as receiving free or reduced-price meals corresponds to the distribution in the administrative data. Because of the Provision, the number of ACS-eligible for free lunch elementary school students is considerably smaller than the average daily number of free lunches served. Therefore, all elementary-aged children who were eligible for free lunch were assigned participation in the program. Table E Ten compares the CEO-modeled estimates of participation in the two school meal programs with the administrative data.

47. Children were defined as school age if they were 5 or older and less than 18.

TABLE E TEN
Comparison of Administrative to Estimated Data on Participation in Subsidized School Meal Programs, 2011

DOE Data

	Receiving Free or Reduced-Price Meals	
Grade Level	School Lunch	School Breakfast
Elementary	348,187	129,064
Middle	103,311	25,186
High	86,370	28,239
Total	537,868	182,489

CEO Modeled Data

	Receiving Free or Reduced-Price Meals	
Grade Level	School Lunch	School Breakfast
Elementary	327,946	130,041
Middle	100,866	25,567
High	86,784	27,873
Total	515,596	183,481

Sources: American Community Survey as augmented by CEO and New York City Department of Education.
Note: Receiving in the DOE data is measured as the average number of meals served per day in the 2010-2011 school year.

The final step in our modeling is to assign a dollar value to each free and reduced-price meal received in a year. The Census Bureau provides school lunch values. For 2011, the free lunch was valued at $2.956 and the reduced-price lunch was valued at $2.556. For a free breakfast value, we use $1.51; this is the "Non-severe Need" value of free school breakfast for the school year 2010-2011 provided by the Food and Nutrition Service, USDA.[48] We assumed that students receive 175 school meals per year.[49] Table E Eleven provides the estimated number of families receiving a free or reduced-price school meal and the mean, median, and sum of the school meal value for 2011.

TABLE E ELEVEN
Participation and Value of Free and Reduced-Price School Meals, 2011

	School Lunch	School Breakfast
Number of Families	311,298	109,929
Mean Value	$850	$446
Median Value	$517	$264
Aggregate Value	$264,472,825	$48,982,437

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

The addition of school meals to resources decreases the Citywide poverty rate by 0.5 percentage points, as Table E Twelve illustrates. The effect is much larger for persons in families receiving school meals, a 3.0 percentage point decrease.

TABLE E TWELVE
Impact of School Meals on CEO Poverty Rate, 2011
(Numbers are Percent of the Population)

	Total Population	Persons in Participating Families
A. Poverty Rates		
Total CEO Income	21.3	40.1
Net of School Meals	21.8	43.1
B. Marginal Effect		
School Meals	-0.5	-3.0

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

Special Supplemental Nutrition Program for Women, Infants, and Children

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides support for low-income pregnant and breastfeeding women, infants, and children who are at nutritional risk. To account for this additional income we include the value of WIC benefits in our measure of family income. As with the school meals programs, however, not every eligible family participates in the WIC program. New York State Department of Health (NYS DOH) administrative data indicates that for 2008 only 53 percent of eligible infants, 31 percent of eligible children, and 32 percent

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48. See: www.fns.usda.gov/cnd/Governance/notices/naps/NAPs.htm
49. The school year is required to be no less than 180 days; we used 175 days to account for occasional absences.

of eligible women participated.[50] To account for this, we model participation with a similar statistical match to the one used to model school meal participation.

The model is based on characteristics of WIC-eligible households which are common and consistently defined in the ASEC and the ACS assigns a probability that a given eligible family will participate in WIC. The model is estimated using New York City families that are included in the Census Bureau's Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS). The CPS is a national-level survey with a

very limited sample for local areas. To muster a sufficiently large number of observations, we pool six years of data. For this year's analysis we use the 2007 through 2012 ASEC, which provides information on WIC participation in 2006 through 2011. The model's householder characteristics and household variables as well as their coefficient values and their statistical significance are provided in Table E Thirteen. For more detailed information about our methodology, please refer to Appendix E of our 2012 report.[51]

TABLE E THIRTEEN
Logit Regression Model of WIC Participation, Coeffecient Definitions and Values, 2006 - 2011

Household Head Characteristics		B	S.E.	Exp(B)
Race/Ethnicity	Non-Hispanic White	-.346	.009	.707
	Non-Hispanic Black	.408	.008	1.503
	Hispanic	.675	.007	1.964
	Other Race/Ethnicity (Omitted Variable)			
Education	High School Graduate through College Graduate	-.151	.004	.860
	Master's Degree or Higher	-1.019	.016	.361
	Less Than High School (Omitted Variable)			
Citizenship	Foreign Born, Citizen by Naturalization	.185	.006	1.203
	Foreign Born, Not a Citizen	.316	.005	1.371
	Citizen by Birth (Omitted Variable)			
Work Experience	Works Less Than Full-Time, Year Round	.574	.005	1.776
	Does Not Work	.439	.005	1.551
	Works Full-Time, Year Round (Omitted Variable)			
Household Characteristics				
	Single Female Houshold Head	.138	.005	1.148
	Infant Present in Household	1.312	.005	3.712
	Number of Persons in Household	.024	.001	1.025
	Household Receives Food Stamps	.799	.004	2.224
	Household Income/Poverty Guideline Ratio	.389	.003	1.476
	Constant	-2.489	.012	.083

Source: Current Population Survey Annual Social and Economic Supplement, New York City Sample, 2007-2012.
Notes: All coefficients significant at the $p < 0.01$ level. Analysis used the household weight. Dependent Variable was HRWICYN, "Does anyone in household participate in WIC program." N = 690.

50. NYS DOH data shows a higher number of absolute infant and women participants than can even be identified as eligible in ACS. Knowing that not all eligible persons will participate, we decided to use the NYS DOH participation rate as our benchmark and not absolute participant numbers. Please see our last report for reasons why the ACS can not identify all eligible persons.

51. See: www.nyc.gov/html/ceo/downloads/pdf/CEO_Poverty_Measure_April_16.pdf

After identifying WIC participants, we assign an annual benefit value of $686.88, which is the annualized USDA Food and Nutrition Services average monthly WIC benefit for New York State residents.[52] We then aggregate all individual WIC benefits to arrive at a family benefit value. Table E Fourteen shows that $687 is also the median benefit per family, indicating that the majority of poverty units contain only one WIC recipient.

TABLE E FOURTEEN
Participation and Value of WIC, 2011

Number of Families	69,017
Mean Value	$1,108
Median Value	$687
Aggregate Value	$76,465,542

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

The addition of WIC benefits to resources has a negligible effect on the Citywide poverty rate, a 0.1 percentage point fall as Table E Fifteen below indicates.[53] The effect is larger, however, among those persons in families receiving WIC benefits, coming to 1.2 percentage points.

TABLE E FIFTEEN
Impact of WIC Benefits on CEO Poverty Rate, 2011
(Numbers are Percent of the Population)

	Total Population	Persons in Participating Families
A. Poverty Rates		
Total CEO Income	21.3	26.8
Net of WIC	21.3	28.0
B. Marginal Effect		
WIC	-0.1	-1.2

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

Impact of Nutritional Assistance on the CEO Poverty Rate

Nutritional assistance is an important component of CEO income and has a considerable impact on the poverty rate. Table E Sixteen following pulls together the effects of the Food Stamp, school meals, and WIC programs on the City poverty rate. Food Stamps account for the bulk of the impact of nutritional assistance, while school meals and WIC have more modest impacts for the City as a whole. This is unsurprising, given that the latter two programs are targeted at specific populations while Food Stamps are available more broadly. Food Stamps also accounts for the increase in the impact of Nutritional Assistance from 2008-2011. As was discussed earlier, this is the result of the rapid expansion of the program during this period.

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52. The average monthly benefit for New York State residents is $57.24. See USDA Food and Nutrition Service data at: www.fns.usda.gov/pd/25wifyavgfd$.htm. We assume that WIC recipients participate for 12 months. This overstates the value of the benefit, but given the program's modest effect, we do not believe we have introduced much distortion in our poverty estimates.

53. This echoes the effect of WIC benefits for the nation in the new Federal Supplemental Poverty Measure. See Short, Kathleen. "The Research Supplemental Poverty Measure, 2010." U.S. Census Bureau, Current Population Reports, Consumer Income, pp. 60-241. U.S. Government Printing Office, Washington, DC. November 2011.

TABLE E SIXTEEN
Impact of Nutritional Assistance on the Poverty Rate, 2005 - 2011

(Numbers are Percent of the Population)

	2005	2006	2007	2008	2009	2010	2011
A. Poverty Rates							
Total CEO Income	20.3	19.8	19.8	19.0	19.6	20.9	21.3
Net of:							
Food Stamps	22.3	21.8	21.6	21.2	22.3	24.4	24.9
School Meals	20.9	20.4	20.3	19.6	20.1	21.4	21.8
WIC	20.4	19.9	19.9	19.1	19.7	21.0	21.3
Total Nutritional Assistance	22.8	22.4	22.1	21.7	22.8	24.9	25.7
B. Marginal Effects							
Food Stamps	-2.0	-2.0	-1.8	-2.1	-2.7	-3.5	-3.6
School Meals	-0.6	-0.6	-0.5	-0.6	-0.5	-0.5	-0.5
WIC	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Total Nutritional Assistance	-2.5	-2.6	-2.3	-2.7	-3.2	-4.0	-4.4

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

APPENDIX F:
ESTIMATING THE VALUE OF HEAP BENEFITS

The Home Energy Assistance Program (HEAP) is a federally funded subsidy that offsets the energy costs of low-income households. Unless a household faces a heating emergency, HEAP takes the form of a one-time annual payment. If the household's heating expenses are included in its rent or mortgage payments, it receives its HEAP benefit directly.[54] If the household pays a utility company for its heating fuel, the HEAP payment is sent to the provider, who then reduces the household's heating bill.

HEAP benefits are available to households whose income falls below the HEAP Benefit Income Guidelines.[55] In New York City, households that receive cash assistance, Food Stamps, or are composed of a single person receiving Supplemental Security Income (SSI) benefits are automatically enrolled in the program. Other low-income households can apply for HEAP, but administrative data from the City's Human Resources Administration (HRA) indicate that the vast majority of HEAP households are those whom it automatically enrolls. In 2010, for example, 689,745 households out of the 702,665 households that received HEAP benefits – 98.2 percent – were automatic enrollees.[56]

HEAP benefits are very modest. If the eligible household resides in public housing or receives a Section 8 subsidy, as of 2008 it only receives an annual one dollar HEAP payment, receipt of which entitles the household to claim a higher Food Stamp benefit. Otherwise, the household is eligible to receive an annual $40 or $50 payment depending on whether its income is above or below 130 percent of the Federal Poverty Guidelines, or if the household contains a "vulnerable" individual: someone under age six, over age 59, or under age 65 and receiving SSI benefits.[57] These payments were lowered from $40 and $50 to $20 and $25, respectively, as of October 1, 2011.

There was no reliable survey data that collected information on HEAP benefits in New York City until the 2011 New York City Housing and Vacancy Survey, to which CEO was able to add a question about HEAP recipiency. This question unfortunately had a very low response rate, which is not surprising since HEAP benefits are one-time payments which are usually put on a recipient's Electronic Benefit Transfer card, and so are easy to overlook.

CEO, therefore, continues to take advantage of the large degree to which beneficiaries are automatically enrolled and the simplicity of the program's benefit structure to estimate the value of HEAP payments for households in the American Community Survey (ACS). A poverty unit in which any member is receiving Food Stamps or public assistance, or is a single-person household with SSI benefits, is assumed to be receiving a HEAP benefit. One new criterion has been added to our measure: if, as part of the housing imputation process, an ACS household has been matched to an HVS household that reported receiving HEAP payments, it is also assumed to be receiving a HEAP benefit.[58]

The October reduction in HEAP benefits created a problem in estimating benefit levels for 2011. The ACS uses a rolling sample; one-twelfth of the survey is conducted each month of a calendar year. Because the ACS public use file does not identify the month the household was surveyed, it is impossible to determine whether it would have received the higher or lower benefit. We randomly assigned the benefit value to match the proportion of households in the administrative data that received the reduced benefit level.

Once it has been estimated, the value of the HEAP benefit is added to a poverty unit's income. Since there can be more than one poverty unit in an ACS-defined household, the benefit is only given to one poverty unit in a multi-poverty unit household. This follows program rules that limit payments to one per household. Table F One compares CEO's estimates to HRA administrative data for the number of New York City households that received HEAP benefits, the total value of the benefits, and the mean benefit per household in 2011. CEO's

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54. Households with a Common Benefit Identification Card receive a HEAP benefit as an electronic benefit transfer.
55. These guidelines are based on household size and are available at: www.otda.ny.gov/programs/heap/program.asp#income
56. These figures do not include the small number of HEAP participants who pay their home heating bills directly.
57. OTDA (Office of Temporary and Disability Assistance), www.otda.ny.gov/programs/heap/program.asp#regular

58. See Appendix C.

estimates come to 81.9 percent of the administrative data for the number of HEAP households, 76.5 percent of the administrative data for total benefits, and 93.4 percent of the administrative data for mean benefit per household. This very low benefit level explains the too-small-to-register effect of HEAP on the CEO poverty rate noted in Chapter Two.

TABLE F ONE
Comparison of CEO Estimates to Administrative Data for HEAP Program, 2011

A. Recipient Households

CEO Estimate	724,314
HRA Administrative Data	883,944
CEO as a Percentage of HRA	81.9%

B. Total Benefits

CEO Estimate	$18,613,085
HRA Administrative Data	$24,322,033
CEO as a Percentage of HRA	76.5%

C. Mean Benefit per Household

CEO Estimate	$26
HRA Administrative Data	$28
CEO as a Percentage of HRA	93.4%

Sources: American Community Survey Public Use Micro Sample as augmented by CEO and New York City Human Resources Administration.

APPENDIX G:
WORK-RELATED EXPENSES

Many families with children must pay for childcare in order to work. The expense of getting to and from work is an unavoidable cost for nearly every jobholder. These costs are non-discretionary and limit the ability of families to meet the needs that are represented in the poverty threshold. The National Academy of Sciences recommended that work-related expenses be deducted from family resources.[59] The American Community Survey (ACS) does not include data on childcare costs or commuting costs, nor does it contain all the data needed to calculate these expenses. This appendix describes our childcare cost imputation and the methodology used to calculate commuting costs.

Childcare Costs

CEO deducts the cost of childcare expenditures from income in the construction of our poverty measure. Because we are only interested in childcare costs that are non-discretionary – that is, necessary for work – we only count the expenses incurred when all of the parents are working. If one or both parents are not working, their childcare spending is uncounted. Since childcare spending is not reported in the ACS, CEO relies on an imputation model to estimate childcare spending. This childcare cost imputation model employs a predicted mean match (PMM) of observations in the Census Bureau's Survey of Income and Program Participation (SIPP) to observations in the ACS.

Creation of the SIPP Data Set

In order to generate a sufficiently large sample, we pool data from the 2004 and 2008 SIPP childcare module data sets. These surveys cover the periods January 2005 through April 2005 and December 2009 through March 2010, respectively. In our previous reports, we used pooled data from the 2001 and 2004 SIPP. The 2008 SIPP data was released in late 2011; we decided to drop the 2001 SIPP data in favor of this newer data. This way, the SIPP data used for imputation more closely reflects the 2005-2011 period covered by this report.

Setting up the pooled SIPP data involves several steps. First, we remove foster children from this sample, given

that their childcare costs are subsidized by government programs. Next, we take several steps to ensure that the unit of analysis within the SIPP is consistent with the "poverty units" CEO creates in the ACS.

The SIPP is a longitudinal data set in which participants are sampled over a two-year period. Individual observations in the SIPP are linked by sampling unit, household address, and family. The sampling unit is the original household as of the first round of interviews. A "household" is defined, as in the ACS, as all members living within the household unit, including family members and all unrelated individuals, such as unmarried partners, roommates, or foster children. Over the two-year SIPP sampling period, some members of a sampling unit leave and form their own households at a different address. Thus, in order to form a unique identifier for each household, we concatenate the sampling unit ID (SSUID) and the household address ID (SHHADID). Further, since ID markers can be reassigned to new sampling units between survey panels, we also include panel year as part of the constructed household ID. This yields an unweighted count of 74,047 unique households.

Within a household, a "family" in the SIPP is comprised of a group of two or more persons related by birth, marriage, or adoption who reside together. Unlike the ACS, the SIPP identifies and links members of subfamilies, even if they are unrelated to the reference person. (CEO creates unrelated sub-families in the ACS.)[60] Unique families within a sampling unit are identified with the RFID variable. The constructed family ID variable concatenates RFID with the constructed household ID. This yields 80,731 unique families.

The SIPP places unmarried partners of the reference person into a different family within the household, which does not include their own children, if there are any. This is inconsistent with CEO's unit of analysis, which treats unrelated partners as equivalent to spouses and includes them and their children in the reference person's poverty unit. Thus, in order to make "families" in the SIPP commensurate with CEO poverty units, we place unmarried partners of the reference person and their children into the reference person's family.

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59. Citro and Michael, pp. 70-71.

60. For a more detailed explanation of CEO's "poverty unit of analysis," see Appendix A in this report.

Individual relationships to the reference person are designated in the SIPP with a household relationship variable (ERRP). All unmarried partners of the reference person (ERRP = 10) are placed in the same family as the reference person. Additionally, all children of the unmarried partner (including non-biological children) are placed in the reference person's family.

Finally, we have to address the issue of minors classified as "other non-relatives of the reference person" (ERRP = 13). For this group, we use the following rule: if there is no other parent or guardian in the household, the individual is placed in the reference person's family; otherwise, they are placed in their parent/guardian's family.

Placing unmarried partners and unrelated minors in the reference person's family reduces the number of unique families to 77,220. Out of this number, 20.9 percent of the families (16,160) have all parents working at least part of the year,[61] at least one child 12 years of age or younger,[62] and live in an urban area. This number represents the sample of SIPP families that is used for the regression model and the match.

Matching SIPP and ACS Cases

Since SIPP data is measured for the reference month, the two income variables (total person income and earned income) are annualized and adjusted using the Betson equivalency scales,[63] and inflated using the ratio of the Consumer Price Index (CPI) all-items index for the ACS data set year and the periods covered by the SIPP

panels.[64] This data is aggregated from the person to the family level.

The SIPP divides childcare payments into 11 categories, organized by provider. These include: grandparents; other relatives; family daycare; daycare; preschool; Head Start; other non-relative; after-school sports; clubs; other after-school activities; and private lessons. These payments are further subdivided in the SIPP by child, yielding a total of 80 childcare payment variables. Childcare payments are measured as the sum of all such childcare payment variables in the SIPP topical module. These values are inflated using the CPI childcare cost index.

This SIPP data set is then used to develop a regression model to predict childcare costs for families. Following work by John Iceland and David Ribar,[65] we estimate separate regressions for the two-parent and single-parent sub-samples in the SIPP.

The relationship between childcare spending and many of its predictor variables is complex and non-linear. In order to achieve the best possible fit to the data, we employ non-parametric techniques via a Generalized Additive Regression Model (GAM). A GAM is a regression model that allows different functional forms for each independent variable. Some of the variables used in the regression are included as dummy variables, while others are fit non-parametrically, using smoothing spline functions.[66] The regression output is summarized in Table G One.[67]

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61. The CEO childcare model caps childcare costs by the weeks worked of the spouse that works less. If one spouse does not work, this family will have no childcare costs. In order to reflect this in the imputation procedure, we narrowed the SIPP sample to mirror the rules we apply to ACS observations.
62. The age range is consistent with the tax code, which provides childcare tax credits for children 12 and under.
63. See Appendix B for a description.

64. We took the average of the CPI Index from January 2005 through April 2005 and December 2009 through March 2010 for panel years 2004 and 2008, respectively.
65. Iceland, John and David C. Ribar. "Measuring the Impact of Child Care Expenses on Poverty." Paper presented at the 2001 Population Association of America (PAA) meetings in Washington, D.C., March 29, 2001.
66. Smoothing splines are a particular type of non-parametric smoothing technique. For an overview of smoothing spline functions and GAM, see Keele, Luke John. *Semiparametric Regression for the Social Sciences*. West Sussex, England. John Wiley and Sons, Ltd. 2008.
67. Non-parametric variables do not have reported coefficients, but rather have smoothed bivariate plots. These plots are available from the authors upon request.

TABLE G ONE
Regression Model of Weekly Childcare Costs, 2011

A. Married-Parent Sample

Dummy Variables	Coefficient	t-Statistic
Intercept	71.78	37.05
Food Stamps	-21.01	-4.35
High School	-25.24	-7.37
Some College	-18.49	-7.23
College	-15.70	-6.26

Non-Parametric Variables	EDF	F-Statistic
Earned	8.70	78.52
Child 0-5	2.00	629.53
Child 13-17	1.85	7.34
Adults	3.94	12.40
Female Income Proportion	7.29	37.14
N		12,319
R^2		0.240

B. Single-Parent Sample

Dummy Variables	Coefficient	t-Statistic
Intercept	37.51	10.76
Food Stamps	-16.62	-5.52
High School	-3.53	-0.86
Some College	0.78	0.21
College	15.97	3.40

Non-Parametric Variables	EDF	F-Statistic
Earned	7.82	19.29
Child 0-5	1.86	107.01
Child 13-17	1.51	3.35
Adults	2.38	18.81
Female Income Proportion	1.94	10.77
N		3,841
R^2		0.158

Sources: 2004 and 2008 Survey of Income and Program Participation (SIPP).
Notes: Dependent variable is weekly childcare expenditures in 2011 dollars. Sample comprised of SIPP families with at least one child under 13 and all parents working. Regressions were run using the SIPP person weight of the family head. This weight functions similarly to a family weight for each adjusted family unit within the household. "EDF" is the "equivalent degrees of freedom."

These regression models are used to compute predicted means for childcare expenditures in both the SIPP and ACS files. ACS observations are then matched with SIPP observations based on their predicted means, and the actual weekly childcare cost value from the SIPP observation is donated to the ACS observation. We constrain the match so that SIPP observations can only match ACS observations with the same number of parents. Table G Two compares the distributions of the SIPP childcare values and the matched values for the subset of families with at least one working parent and at least one child 12 years of age or younger in the 2011 ACS. The matched values closely reproduce the distribution of childcare costs in the SIPP and percentage of observations with zero childcare costs.

TABLE G TWO
Comparison of Weekly Childcare Payments, ACS and SIPP, 2011

A. Working Parents

	ACS	SIPP
Mean	$51	$52
Percent Zero	64.4%	62.7%
Percentile		
5	$0	$0
10	$0	$0
25	$0	$0
50	$0	$0
75	$52	$64
90	$169	$177
95	$274	$259

B. Working Parents with Non-Zero Expenditures

	ACS	SIPP
Mean	$143	$139
Percentile		
5	$10	$10
10	$17	$21
25	$46	$52
50	$103	$103
75	$193	$187
90	$322	$307
95	$417	$393

Sources: American Community Survey Public Use Micro Sample as augmented by CEO, and 2004 and 2008 Survey of Income and Program Participation (SIPP) inflated to 2011 prices using the CPI childcare index.
Notes: Sample comprised of ACS and SIPP families with at least one child under 13 and all parents working. Values are reported at the level of the designated parent. Values are unweighted.

The weekly childcare values are then adjusted to reflect annual costs. In order to calculate childcare expenditures that are non-discretionary, we multiply the weekly value by the lowest reported number of weeks worked among the parents and cap the childcare costs for the family by the wages of the lower-earning parent. Table G Three below shows the distributions for the annualized values using the PMM procedure.

TABLE G THREE
Annual Non-Discretionary Childcare Expenditures, 2011

	All Working Parents	Working Parents with Non-Zero Expenditures
Mean	$2,044	$6,226
Percent Zero	67.2%	N.A.
Percentile		
5	$0	$214
10	$0	$515
25	$0	$1,701
50	$0	$4,426
75	$1,611	$8,249
90	$6,874	$15,461
95	$11,560	$19,729

Source: American Community Survey Public Use Micro Sample as augmented by CEO.
Notes: Samples are comprised of ACS families with at least one child under 13 and all parents working. Values are reported at the level of the designated parent. Data weighted by ACS household weight.
N.A. - Not applicable because these families all have positive childcare costs.

Commuting Costs

To estimate commuting costs we employ the ACS variables that provide information about means of transportation, travel time, usual weekly hours, vehicle occupancy, work location, and weeks worked in the past 12 months. We rely on administrative data to calculate the cost per trip of various modes of transportation. Listed below are the means of transportation and the cost per trip:

- Drove: $0.5325 per vehicle mile – the average of the two IRS standard mileage rates[68] released in 2011, plus bridge and tunnel tolls.

- Drove with Others: Divide all driving costs by number of carpoolers.

- Motorcycle: IRS standard mileage rate with motorcycle rates for tolls.

- Bus, Subway, or Ferry: $2.10 per trip.[69]

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68. See: www.irs.gov/uac/IRS-Announces-2011-Standard-Mileage-Rates and www.irs.gov/uac/IRS-Increases-Mileage-Rate-to-55.5-Cents-per-Mile
69. Metropolitan Transportation Association (MTA) increased fares on December 30, 2010. We use $2.10 as the cost of a subway or bus trip which was a result of a decrease to 7 percent from 15 percent for the "Volume Bonus" on a multi-ride MetroCard. We assume that ferry riders take the free-of-charge Staten Island Ferry and then use an additional form of public transit.

• Railroad: $72 per week for out-of-city work locations and $51 per week for in-city work locations.[70]

• Taxi: We estimate each commute at $8.[71]

• Walk, Bike, or Work from Home: No cost per trip.

• Other Methods: We assume a bus or subway fare of $2.10 per trip.[72]

Once we have established a cost per trip for each means of transportation (other than railroad which is already a weekly cost), we use the following formula to calculate the weekly commuting cost:

Weekly Commuting Cost =
(Cost/Trip × Min((WKHP/8 × 2),14))

We assume an eight-hour work day and use the ACS variable "WKHP – Usual hours worked per week in the past 12 months" to calculate the number of days worked per week.[73] To account for a trip to and from work, we then multiply the number of work days by two and cap the number of possible weekly trips at 14. The cost per trip is then multiplied by the number of commuting trips per week to establish a weekly commuting cost. This is then multiplied by the "WKW – Weeks worked in the last 12 months"[74] to establish the annual commuting cost.

TABLE G FOUR
Transportation Mode and Costs, 2011

Mode of Transport	Number of Commuters	Percent	Weekly Cost		Annual Cost	
			Median	Mean	Median	Mean
Drove Alone	799,526	19.6%	$41	$50	$1,819	$2,417
Drove with Others	175,212	4.3%	$20	$25	$897	$1,202
Bus	432,670	10.6%	$21	$20	$1,050	$919
Subway	1,564,717	38.3%	$21	$21	$1,050	$988
Railroad	59,602	1.5%	$51	$57	$2,550	$2,612
Ferry	6,912	0.2%	$21	$21	$1,050	$1,012
Taxi	38,947	1.0%	$96	$88	$4,800	$4,276
Motorcycle	2,353	0.1%	$31	$36	$1,528	$1,501
Bike	30,469	0.7%	$0	$0	$0	$0
Walked	369,128	9.0%	$0	$0	$0	$0
Worked at Home	138,928	3.4%	$0	$0	$0	$0
Other Method	23,739	0.6%	$21	$21	$1,050	$924
No Mode Reported	447,163	10.9%	$21	$17	$420	$486
All Modes	4,089,366	100.0%	$21	$25	$1,050	$1,139
Percent Using Subway or Bus		48.8%				
Cost per Subway or Bus Trip		$2.10				

Sources: American Community Survey Public Use Micro Sample as augmented by CEO, using data from the following: "Regional Travel-Household Interview Survey." New York Metropolitan Transportation Council-New Jersey Transportation Planning Authority. February 2000; IRS Revenue Procedure 2010-119 and 2011-69 established the standard mileage rates for deductible costs of operating an automobile for business purposes; *The New York City Taxicab Fact Book*. Schaller Consulting. March 2006.
Note: Those that commuted via "Other Method" or reported no mode but did have work within the last 12 months were assigned the average cost per subway or bus trip.

70. A Long Island Railroad (LIRR) Zone 1 to Zone 1 weekly pass costs $52.25; a Zone 1 to Zone 4 pass costs $71.25. A weekly pass from Grand Central Station (GCT) to Harlem on Metro-North costs $49.75. A weekly pass from GCT to White Plains costs $73.25.
71. We use a slightly lower cost than the $9.61 per trip cost in the *The New York City Taxicab Fact Book* to account for outer-borough trips, which are more likely to be with a non-medallion taxi. See: www.schallerconsult.com/taxi/taxifb.pdf
72. The ACS only asks for means of transportation to work if the respondent worked last week. Therefore, for respondents that have worked in the past 12 months but not last week we assume a subway or bus fare.

73. We round to the nearest whole number for the number of work days.
74. In 2008, the WKW variable was changed from the actual number of weeks to a range format. For our 2008 through 2011 calculations, we used the midpoint of each range in our calculations. We cap the number of weeks worked at 50 to account for sickness or vacation.

Table G Four shows that almost half (48.8 percent) of all New York City commuters used either the subway or bus. This results in a median annual commuting cost of $1,050. The highest commuting costs were incurred by those taking a taxi, driving alone, or using the railroad.

The top panel of Table G Five illustrates the impact of work-related expenses on the poverty status of total population. It shows the combined impact, as well as the individual impact of both commuting costs and childcare expenditures. As expected, poverty rates are lower after subtracting work-related expenses from income. The effect of commuting costs is fairly consistent since

reaching 1.7 percentage points in 2007. The impact of childcare expenses is stable, at either 0.2 or 0.3 percentage points from 2005 through 2011.

The second panel of Table G Five shows the impact of work-related expenses for persons living in working families with children. This is the population that would be most effected by work-related expenses. Interestingly, while the impact of commuting costs for this group is notably larger than for the population as whole, this is not true for childcare costs, which continue to have a relatively small effect on the poverty rate.

TABLE G FIVE
Impact of Work-Related Expenses on Poverty Rates, 2005 - 2011

(Numbers are Percent of the Population)

	2005	2006	2007	2008	2009	2010	2011
A. Total Population							
Total CEO Income	20.3	19.8	19.8	19.0	19.6	20.9	21.3
Net of:							
Commuting Cost	19.0	18.4	18.1	17.5	18.0	19.2	19.5
Childcare Expenses	20.1	19.5	19.6	18.8	19.4	20.6	21.1
Total Work-Related Expenses	18.8	18.1	17.9	17.3	17.8	19.0	19.4
Marginal Effects							
Commuting Costs	1.3	1.4	1.7	1.5	1.7	1.6	1.7
Childcare Expenses	0.2	0.3	0.2	0.2	0.2	0.3	0.2
Total Work-Related Expenses	1.5	1.7	1.9	1.7	1.9	1.9	1.9
B. Persons Living in Working Families with Children							
Total CEO Income	12.5	12.6	13.3	11.8	12.1	13.1	13.7
Net of:							
Commuting Cost	10.2	10.5	10.7	10.0	9.9	10.9	11.2
Childcare Expenses	12.1	11.9	12.9	11.3	11.7	12.5	13.4
Total Work-Related Expenses	9.8	10.0	10.4	9.5	9.5	10.4	10.9
Marginal Effects							
Commuting Costs	2.2	2.1	2.6	1.9	2.2	2.2	2.5
Childcare Expenses	0.4	0.6	0.5	0.5	0.4	0.6	0.3
Total Work-Related Expenses	2.7	2.5	2.9	2.3	2.6	2.8	2.7

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

Appendix H:
Medical Out-of-Pocket Expenditures

Following the National Academy of Sciences' recommendation, CEO's measure of income is net of what families spend for their medical care. Medical out-of-pocket expenditures (MOOP) include health insurance premiums, co-pays, deductibles, and the cost of health services that are not covered by insurance. Since the American Community Survey (ACS) does not report this information, it must be imputed from an outside data source. We use the Medical Expenditures Panel Survey (MEPS) to impute MOOP into the ACS. MEPS files have a slightly longer processing lag time than the ACS, so for the 2011 CEO Poverty Measure we use the 2010 MEPS data adjusted by the medical care component of the Consumer Price Index for All Urban Consumers (CPI-U).[75]

The MEPS contains two files that we use for our MOOP calculations. The Full Year (FY) file contains all the information pertaining to medical expenses except for health insurance premiums. Premiums for persons that are privately insured are contained in the Person Round Plan Public Use (PRPL) file. To calculate MOOP for those on private insurance, we add the PRPL file's premium values to the FY file's medical expenses. For those on public insurance, we create premium values based on program rules and add them to the FY file's medical expenses.

Private Insurance Premiums

There are five different categories of private insurance in the FY file. They specify if a policyholder has employer/union group insurance, private insurance with the source unknown, a non-group private policy, an "other group" insurance policy, or a self-employed (firm size of one) policy. All FY private insurance policyholders should have a corresponding private insurance premium in the PRPL file. However, there are a number of private insurance holder records in the FY file without

corresponding records in the PRPL file. This occurs because health insurance premium values are only collected at the beginning of the year. Therefore, if a person began private insurance coverage in the middle of the year, a premium value would not be recorded in the PRPL file.

For records with missing premiums, we impute values via a hot-deck methodology. To insure that we are assigning an appropriate premium, we identify the policyholders as belonging to either an individual or a multi-person plan based on the number of persons in the FY health insurance unit (HIDUDX). The health insurance unit variable is a MEPS-constructed variable which links adults, their spouses, and any unmarried children age 18 and under who would most likely be covered under one health insurance plan.[76] We then randomly assign non-missing premium values to records with missing premiums within their specified categories.

Public Insurance Premiums

We use program rules to assign appropriate premiums for those on public insurance. We assume all persons identified in the MEPS as Medicare recipients have Medicare Part B. All Medicare recipients with incomes above 135% of the Federal Poverty Guidelines (FPG) are required to pay a monthly premium for Medicare Part B. If the Medicare participant is not married, we use only personal income when calculating their percentage of FPG. For married participants we aggregate the income of both partners.

All persons enrolled in Medicare Part B also have the option of enrolling in Medicare Part C, Medicare Advantage. Medicare Advantage is a type of Medicare administered by a private health insurance company, which usually offers greater benefits and services for an additional premium. For those identified in the MEPS as enrolled in Medicare Part C, we assign an additional annual premium of $528 for 2010.[77]

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75. For further information about the MEPS please visit the Agency for Healthcare Research and Quality website at: www.meps.ahrq.gov/mepsweb/

76. For the employer/union group, we also include whether or not the policyholder was in a union.
77. "Medicare Advantage." The Henry J. Kaiser Family Foundation. November 2011: www.kff.org/medicare/upload/2052-15.pdf

Persons also have the option to enroll in Medicare Part D, prescription drug coverage, which also requires a supplemental monthly premium.[78] Many Medicare Advantage plans roll prescription drug coverage into their services and, therefore, for persons identified as enrolled in both Medicare Part C and Part D, we assign only the additional Medicare Part C premium.

To assign Child Health Plus premiums, we look at all children identified as public insurance recipients. We aggregate incomes for everyone in the same health insurance unit and compare that against the Federal Poverty Guidelines (FPG). Families are required to pay a monthly per-child premium based on their income's percentage of the FPG. For all categories of participants, there is also a family cap. For example, families with incomes between 160 percent and 222 percent of the FPG are required to pay a premium of $9 per child per month. The premium is capped at the payment for three children ($27 per family per month).[79]

New York State's Family Health Plus program does not have a premium but does require co-payments based on different types of procedures. These co-payments are captured in the MEPS Full Year file.[80] Medicaid participants have no premiums or co-pays.

Once the premium data is calculated, we aggregate all premiums within the identified family variable and add that to other medical expenses[81] to arrive at total medical out-of-pocket expenditures.

Developing a PMM Model for MOOP Imputation

We developed a regression model to predict MOOP values in the MEPS. All variables are measured for the head of the poverty unit.[82] Income, age of the household head, poverty unit size, and number of children are measured as continuous variables, while the race, education, insurance status, and working status categories are included as binary variables.

In 2008, the ACS began measuring insurance status, which is an important covariate in a model of MOOP. Thus, the imputation model for 2008 and onward contains insurance status while the previous years cannot. This may create some discontinuity, over time, in our estimates. We address it by using Food Stamp receipt as a proxy for Medicaid status for the years prior to 2008. In addition, a good deal of the variation in insurance status is picked up by the full-time work and income variables (which proxy for private insurance) and the age of the poverty unit head variable (which proxies for Medicare enrollment). We tested the 2008 data using the model without insurance status and found similar outcomes to the model with insurance status, yielding a mean MOOP value of $2,867 compared with $2,895 for the model including insurance status.[83] This proxy method is imperfect, however, and may impact the quality of the statistical match.

The relationship between MOOP and many of its predictor variables is complex and non-linear. In order to achieve the best possible fit to the data, we employ non-parametric techniques via a Generalized Additive Regression Model (GAM). A GAM is a regression model that allows different functional forms for each independent variable. Binary variables used in the regression are included as dummy variables, while continuous ones are fit non-parametrically using smoothing spline functions.[84] The regression output is summarized in Table H One.[85]

Regression Model of Medical Out-of-Pocket Spending, 2011

Dummy Variables	Estimate	t-Statistic
Intercept	7.63	196.31
Public Insurance	-2.10	-32.57
No Insurance	-2.43	-47.25
Work Full-Time	-0.13	-3.36
Black	-0.55	-11.04
Hispanic	-0.62	-11.91
Asian	-0.45	-5.52
Other Race/Ethnicity	-0.57	-5.22
Bachelor's Degree or Greater	0.24	6.48
Less than High School	-0.36	-6.86
Elderly Head	-0.63	-5.23
Elderly Present	0.38	3.96
Public Insurance × Elderly	1.79	19.18
No Insurance × Elderly	0.17	0.21

Non-Parametric Variables	EDF	F-Statistic
Income	6.77	47.17
Family Size	7.04	63.72
Age	2.32	120.61
Children	1.64	15.31
N		13,270
R^2		0.888

Source: 2010 Medical Expenditure Panel Survey inflated to 2011 prices using the CPI Medical Index.
Notes: Dependent variable is the natural log of family-level MOOP. Income measured as household income divided by 10,000. "EDF" is the "equivalent degrees of freedom."

ACS and MEPS cases are matched based on their predicted means, using the regression model. When cases are matched, the actual MOOP value from the MEPS case is donated. Since there are slightly less than half as many donor cases in the MEPS as cases in the ACS, we allow MEPS observations to donate their value to multiple ACS observations. We also apply a rule that a single MEPS case cannot donate more than three times. This ensures that all ACS cases can be matched and helps preserve the full distribution of MOOP values from the MEPS. After some experimentation, we imposed a further restriction on the match: MEPS and ACS observations can only be paired if they match on health insurance status and the elderly status of their respective reference person. We did this because initial testing of the imputation model without these conditions yielded poor matches for certain sub-groups. Adding these matching criteria overcomes this problem. The following table, H Two, shows the distribution of MOOP values in the MEPS and the PMM values for 2011.

Comparison of MOOP Distributions, MEPS and ACS, 2011

	MEPS	ACS
Mean	$3,268	$2,669
Aggregate (in $1,000s)	N.A.	$8,743,053
Percentile		
5	$0	$0
10	$29	$4
25	$453	$251
50	$2,027	$1,453
75	$4,636	$3,746
90	$8,106	$6,844
95	$10,529	$9,209
Proportion of families with Zero MOOP Values	7.2%	9.0%

Sources: American Community Survey Public Use Micro Sample as augmented by CEO, and 2010 Medical Expenditure Panel Survey (MEPS) inflated to 2011 prices using the CPI Medical Index.
Note: N.A. - Not applicable due to the fact that the MEPS provides data at the U.S. level as opposed to the New York City level.

The matched MOOP values in the ACS are lower than those in the MEPS, particularly at the mean. This does not necessarily mean that the imputation procedure yields a poor match. The MEPS is a nationally representative survey while our estimates are for New York City. Since New York City differs in demographic composition from the rest of the U.S., the overall mean MOOP value may be higher or lower than for the overall population.

A better measure of the match quality is the conditional distributions. By looking at the matched values conditional on the matching variables, we can see whether or not the medical spending patterns are reproduced in the ACS, adjusting for the compositional differences in the data sets. Table H Three reports the mean and median MOOP expenditures in the MEPS and ACS by insurance and elderly status.

TABLE H THREE
Comparison of MEPS and ACS MOOP Values by Age and Insurance Status, 2011

A. MEPS

	Non-Elderly			Elderly	
	Private	Public	Uninsured	Private	Public and Uninsured
Mean	$4,122	$673	$1,033	$4,439	$2,984
Median	$2,895	$154	$197	$3,434	$2,224

B. ACS

	Non-Elderly			Elderly	
	Private	Public	Uninsured	Private	Public and Uninsured
Mean	$3,616	$836	$963	$3,982	$2,181
Median	$2,535	$167	$210	$2,966	$1,410

Sources: American Community Survey Public Use Micro Sample as augmented by CEO, and 2010 Medical Expenditure Panel Survey (MEPS) inflated to 2011 prices using the CPI Medical Index.

The mean and median values by subgroups are much closer to the MEPS data than the Citywide mean. However, this table only conditions on two variables: elderly status and insurance status. Much of the difference between medical spending in New York and the U.S. is driven by New York's vastly different demographic profile. Re-computing Table H Three for the non-Hispanic White population in the MEPS and the ACS, for example, yields even closer spending estimates.[86]

Impact of MOOP on the CEO Poverty Rate

Table H Four reports the impact of MOOP on the poverty rate. MOOP has a substantial impact on the poverty rate, increasing poverty throughout the City by between 2.8 and 3.9 percentage points. The impact of MOOP on the poverty rate is larger in 2005-2007 than in 2008-2011. This is likely the result of the better statistical match that is generated when insurance status is included as a matching variable.

Table H Four also reports the impact of MOOP on poverty among the elderly, the group most affected by medical spending. The MOOP adjustment raises elderly poverty by a much larger amount, ranging from 4.6 percentage points to 6.7 percentage points. The impact of MOOP on the elderly leads to a considerable change in the way we understand their poverty. The elderly have a higher overall poverty rate than the City as a whole for every year from 2005 through 2011. However, the elderly have a net-of-MOOP poverty rate that is close to the Citywide net-of-MOOP poverty rate from 2005-2009, and a lower net-of-MOOP poverty rate than the Citywide average in 2010 and 2011. The pattern in 2010 and 2011 differs from prior years because poverty rose for younger and more labor-market dependent New Yorkers and because the effect of MOOP declined. Indeed, it declines markedly over the 2005-2011 period. This may be a reflection of implementation of Medicare Part D, the prescription drug coverage program that could be protecting more of the elderly from catastrophic medical costs.

TABLE H FOUR
Impact of MOOP on Poverty Rates, 2005 - 2011

(Numbers are Percent of the Population)

	2005	2006	2007	2008	2009	2010	2011
A. All Persons							
Total CEO Income	20.3	19.8	19.8	19.0	19.6	20.9	21.3
Net of MOOP	16.9	16.3	15.9	15.8	16.4	18.1	18.3
Marginal Effect of MOOP	3.4	3.5	3.9	3.2	3.2	2.8	2.9
B. Elderly Individuals							
Total CEO Income	24.1	22.7	22.5	22.7	22.1	21.1	22.4
Net of MOOP	17.4	16.5	16.0	17.0	16.8	16.5	17.1
Marginal Effect of MOOP	6.7	6.3	6.5	5.7	5.3	4.6	5.3

Source: American Community Survey Public Use Micro Sample as augmented by CEO.

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86. This data is available from the authors upon request.

APPENDIX I:
ACCURACY OF THE DATA

The principal data set for CEO's poverty estimates is the American Community Survey (ACS) Public Use Micro Sample (PUMS). The ACS is designed to sample one percent of the households in the U.S. each year. The PUMS is a subset of the full ACS sample. It provides information collected from roughly 25,000 households in New York City annually.

Because the ACS is a survey, it is subject to two types of error: nonsampling error and sampling error.

Nonsampling Error: Nonsampling error is the error within survey data that is not specifically associated with the statistical sampling procedures of the sample data. Nonsampling error can occur because of erroneous responses by survey respondents, for example. Another source of nonsampling error can come from mistakes in the processing of the data by the Census Bureau, such as when data are edited or recoded.

Nonsampling error can affect the data in two ways: either randomly, which increases the variability of the data, or systematically, which introduces bias into the results. To minimize bias in the survey, the Census Bureau conducts extensive research of sampling techniques, questionnaire design, and data collection and processing procedures. For instance, after identifying a systematic underreporting of Food Stamp receipt and benefit dollar values in the ACS, the Census Bureau researched methods to increase the reported participation rate. The Census Bureau concluded, through this research, that changing the wording of the Food Stamp question to include "Food Stamp benefit card," as well as not asking about the Food Stamp benefit value, would significantly increase the number of households responding that they received Food Stamps.[87]

Sampling Error: Sampling error occurs in the ACS, as in other sample survey data, because inferences about the full population (such as the poverty rate for New York City) are derived from a subset of it (the poverty rate for the ACS sample). Another sample drawn from the same population would provide a different estimate of the poverty rate. The sampling error is estimated by the standard error, which can be thought of as a measure of the deviation of an estimate drawn from one sample from the average estimate of all possible samples.

For this report, CEO employed the replicate weight method recommended by the Census Bureau to compute direct standard errors for our estimated poverty rates. The standard errors provide a measure of sampling error and some types of nonsampling error.[88] Using the standard errors, we tested the statistical significance of differences and changes in the report's poverty rates at the ten percent level of significance. In the report's tables, we highlight, in bold, statistically significant differences between poverty rates.

An additional source of error in the data results from CEO's need to impute information on items such as the value of Food Stamp benefits, housing status, childcare expenditures, and medical out-of-pocket expenditures from other survey data into the ACS sample. We do not, however, account for the imputation error in this report.

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87. John Hisnanick, T. Loveless, and J. Chesnut. U.S. Bureau of the Census. *2006 American Community Survey Content Test Report H.6 - Evaluation Report Covering Receipt of Food Stamps.* January 3, 2007. See: www.census.gov/acs/www/AdvMeth/content_test/H6_Food_Stamps.pdf

88. U.S. Bureau of the Census. PUMS Accuracy of the Data (2011). 2012. Available at: www.census.gov/acs/www/Downloads/data_documentation/pums/Accuracy/2011AccuracyPUMS.pdf