The CEO Poverty Measure

A Working Paper by
The New York City
Center for Economic Opportunity
August 2008

Michael R. Bloomberg
Mayor

TABLE OF CONTENTS

PREFACE

Identify what works and build on it. This principle is central to Mayor Michael Bloomberg's approach to fighting poverty and fundamental to the agenda of the New York City Center for Economic Opportunity. Knowing what works requires accurate information. In order to design and implement effective strategies to combat poverty, policymakers need an up-to-date measure of how changes in the economy, demographic trends, and public policies affect the lives of low-income New Yorkers.

The Federal government's poverty measure should fill this role. It does not and, as a result, dissatisfaction with it has become nearly universal. Despite a long-held consensus among policy experts about how to make it more meaningful, America measures poverty in 2008 just at it did in 1969 when the current measure was officially adopted.

The inadequacies of the Federal poverty measure became particularly apparent several years ago when Mayor Bloomberg convened a Commission for Economic Opportunity (co-chaired by Geoffrey Canada and Richard D. Parsons) and charged it with the task of providing new ideas for fighting poverty. The Commission was hampered by the data and conceptual tools at its disposal, finding them inadequate guides for understanding the current level of economic deprivation in New York, assessing the effect of existing public policy, or forecasting the potential impact of new initiatives on the City's low-income population. The Commission concluded that, along with programmatic innovations to reduce poverty, the City needed to improve its method of measuring poverty. Mayor Bloomberg championed this recommendation and poverty measurement became one of the new projects initiated by the organization created to implement its recommendations, the City's Center for Economic Opportunity.

In order to devise effective strategies for tackling poverty, it is critical to understand poverty's full dimensions. The creation of a more realistic poverty measure is vital to this effort. This working paper is an important component of New York City's poverty research and will offer the City a more useful tool to develop poverty-related policy moving forward and allow City agencies to base future plans on accurate and timely data. The Center for Economic Opportunity will also share the methodology and lessons learned with others from across the nation who are interested.

ACKNOWLEDGMENTS

This study was conducted by The New York City Center for Economic Opportunity's (CEO) poverty research staff: Mark Levitan, Gayatri Koolwal, John Krampner, and Todd Seidel. This work also received outstanding assistance from Christine D'Onofrio and Patricia Ruggles who were hired by the Center to serve as consultants to the project. An economist and former analyst with the City Council's Finance Division, D'Onofrio developed our all-important tax model. Ruggles, a nationally-recognized poverty expert, played a critical role in helping us work through several difficult conceptual and statistical issues and contributed to the drafting of the report. Vicky Virgin, who is a demographic analyst at the Population Division of the New York City Department of City Planning, met the considerable challenge of creating tax filing and new family units out of the scant information available to us in the American Community Survey. Lisette Partelow, a Princeton University graduate student, provided an extensive literature review of poverty measurement options during her internship with us in the fall of 2007.

The report also benefited from many colleagues throughout City government who offered advice and support. These include Commissioners Robert Doar and Shaun Donovan; Dr. Swati Desai, Dr. Joe Salvo, and Dr. Alan Gartner. CEO also learned much about programs and policies that affect low-income New Yorkers, and were provided administrative data by the staff of a number of City Agencies that helped to provide context for the results of this research. Staff at the City's Department of Education including Tom Gold and Jan Rosenblum; the Human Resources Administration, including JoAnne Bailey, Christel Brellochs, Audrey Diop, Richard Glickstein, Leon Humphries, Juliah Lindsey, John Maher, Joyce Pillot, Iris Reyes, Parsa Sajid, and Angela Sheehan; the Department of Housing Preservation and Development including Moon Wha Lee, Roeland Kim and Kimberly Romano; the New York City Housing Authority including Anne-Marie Flatley and Celeste Glenn; the Department of Finance including Laurie Kilpatrick; the Administration for Children's Services including Sara Vecchiotti and Judy Perry, and the Office of Management and Budget including Michael Dardia, John Grathwol, and Deborah Brosen were all vital to the success of this project.

Staff at other government agencies that provided data include David Boughtwood at the New York State Department of Taxation and Finance, Alan Smith at the New York State Division of Housing and Community Renewal and Dean Plueger at the U.S. Internal Revenue Service.

This work applies the set of recommendations that were made by the National Academy of Sciences for improving the Federal poverty measure. A number of scholars who developed those recommendations offered the CEO poverty research staff their enthusiasm and keen advice. This includes Constance Citro, Rebecca Blank, and David Betson. Researchers at several Federal agencies who have applied the Academy's methods generously provided their expertise and CEO wishes to thank David Johnson, Kathleen Short, and Amy O'Hara at the Census Bureau, Thesia Garner from the Bureau of Labor Statistics, and Jessica Banthin of the Department of Health and Human Services' Agency for Healthcare Research and Quality. Dr. Banthin's assistance was essential to our work in estimating medical out-of-pocket expenditures. John Iceland, who is now at the University of Maryland, should also be thanked in this context for his advice on creating estimates for childcare spending.

Robert Callis and Edward Welniak from the Bureau of the Census also provided answers to important questions concerning the New York City Housing and Vacancy Survey and the valuation

of School Lunches, respectively. Jeffrey Passell at the Pew Hispanic Center shared his expertise and program code that helped us form our tax and poverty measurement units.

The Brookings Institution and the University of Michigan's National Poverty Center hosted a meeting in January of this year where many of the nation's leading poverty experts offered the CEO poverty research staff their advice as we embarked on this project. In addition to many of the people listed above CEO should acknowledge the generosity of our host, Ron Haskins at Brookings as well as the wisdom of others who attended the event, including Richard Bavier, Barbara Bergmann, Alemayehu Bishaw, Paul Buggs, Gary Burtless, Mark Greenberg, Julia Isaacs, Charles Nelson, David Park, Karl Scholz, Timothy Smeeding, Sharon Stern, Sheila Zedlewski and James Ziliak. The Brookings Institution's David Park should receive additional thanks for sharing his tax program for the American Community Survey.

In March and April, CEO held meetings at City Hall to solicit advice from New York-based researchers and policy advocates. Attending these meetings were Lawrence Aber, Diane Baillargeon, Lilliam Barrios-Paoli, Joel Berg, Jonathan Bowles, Gordon Campbell, Nancy Cauthen, David Chen, Howard Chernick, Hector Cordero-Guzman, Randall Filer, Ester Fuchs, Irv Garfinkle, Fatima Goldman, Janet Gornick, David Howell, Howard Hussock, Alexa Kasdan, Sanders Korenman, Anne Kubisch, Tom Main, Lawrence Mead, John Mollenkopf, Christine Molnar, Gail Nayowith, Matt Nerzig, June O'Neill, James Parrott, Joseph Perriera, Merble Reagon, Cordelia Reimers, Trudi Renwick, Lillian Rodriguez-Lopez, Laney Romero-Alston, Diana Sallas, David Saltzman, Andrea Batista Schlesinger, Walter Stafford, Nancy Wackstein, Jane Waldfogel, Michael Weinstein, Andrew White and Susan Wieler. Gordon Berlin and James Riccio are two other New Yorkers who offered sound advice.

Production and editorial assistance was provided by staff at the Mayor's Office and the Center for Economic Opportunity including David Berman, Allegra Blackburn-Dwyer, Sarah Brennan, Carson Hicks, Liza Kahn, Moses Magali, Kristin Misner, Kristin Morse, Héctor Salazar-Salame, and Marlon Williams. CEO is led by Executive Director Veronica White who provided exceptional guidance and support for this project.

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Director of Poverty Research
On behalf of the New York City Center for Economic Opportunity

EXECUTIVE SUMMARY

This study responds to a recommendation made by the Commission for Economic Opportunity, a task force convened by New York City Mayor Michael Bloomberg in 2006. The Commission members were asked to develop new ideas for addressing poverty. In the course of their work they came to realize that the current poverty measure was a poor gauge of either the degree of economic deprivation in the City or the impact of programs intended to alleviate it. The Commission members recommended that, in addition to new programs to combat poverty, the City should develop a better method to count the poor. Mayor Bloomberg embraced that suggestion and poverty measurement has become part of the mission of the organization created to implement the Commission's recommendations, the New York City Center for Economic Opportunity (CEO).

WHAT'S WRONG WITH THE CURRENT MEASURE?

The weaknesses of the current measure lie in both how it establishes a standard of income adequacy (the poverty thresholds) and how it defines the resources available to families to meet their basic needs. The official poverty measure established its thresholds in the mid-1960s. They were based on only one of life's necessities, food. The cost of a minimally adequate diet was simply multiplied by three because, at that time, expenditures on food accounted for one-third of a typical family's budget. Since the late 1960s the only change to the thresholds is that they are adjusted annually for the rise in the cost of living. The resources the current measure counts to establish whether a family is under or over the poverty line is *pre-tax* cash income. This includes earnings, income from government programs such as Social Security or welfare payments, but does not count the effect of taxes paid or tax credits or the cash-equivalent value of in-kind aid such as Food Stamps. Nearly forty years have passed since this poverty measure became the official methodology for the Federal government's statistical agencies. It is now an anachronism.

WHY WE NEED A NEW MEASURE

The thresholds no longer represent a meaningful standard for identifying needy families. They do not reflect current spending patterns, differences in the cost of living across the nation, or how changes in the American standard of living ought to affect our sense of who should be considered poor. The definition of resources is also out of date. Pre-tax cash provides an increasingly

incomplete picture of a family's level of material well-being. In particular it fails to count much of what public programs do to improve the lives of low-income families.

A new poverty measure can address these weaknesses. Its thresholds can be established in a manner that reflects contemporary needs, social norms, and living costs in a way that makes sense to the public. Its definition of resources can be expanded to include a wider array of income sources available to families. Perhaps, most importantly, a new poverty measure can offer policymakers a gauge by which they can see where and how public programs are, or are not, addressing poverty.

RECOMMENDATIONS OF THE NATIONAL ACADEMY OF SCIENCES

Dissatisfaction with the current poverty measure spurred Congress to provide funding for a National Academy of Sciences' (NAS) report on ways to improve the measure. Since that study was issued in 1995, the Academy's recommendations have gained wide acceptance among poverty researchers.

- The NAS poverty measure establishes its thresholds on the basis of a broader set of needs than does the official one. Along with food, the need for clothing, shelter, utilities and "a little more" for other necessities are represented in the alternative measure. The thresholds are also adjusted to account for differences in the cost of living across the nation.
- The NAS poverty measure uses a more inclusive definition of resources available to families. Along with cash income *after* taxes, it accounts for the cash-equivalent value of nutritional assistance and housing programs, such as Food Stamps and Section 8 housing vouchers. It also recognizes that many families face the cost of commuting to work, pay for childcare, and have medical out-of-pocket expenses that reduce the income available to them to meet their other needs.

CEO has adopted the Academy's recommendations because they provide a method for establishing a more realistic poverty threshold for New York City. The NAS proposal also expands the definition of resources so that they more accurately gauge the capacity of families to meet their basic needs.

IMPLEMENTING THE NAS RECOMMENDATIONS FOR NEW YORK CITY

As a first step in constructing the CEO poverty measure, we created a new poverty threshold based on the NAS recommendations. For the nation, the broader market basket of necessities produces a poverty line (derived from expenditure data for food, clothing, shelter, and utilities) for a two-adult,

two child family of $21,818 in 2006 (the latest year for which data are available). The NAS also suggested that the poverty thresholds reflect differences in the cost of living across the U.S. Adjusting the national threshold for the relatively high cost of living in New York City brings the local poverty line to $26,138. (The official threshold for a two-adult, two-child family in 2006 is $20,444).

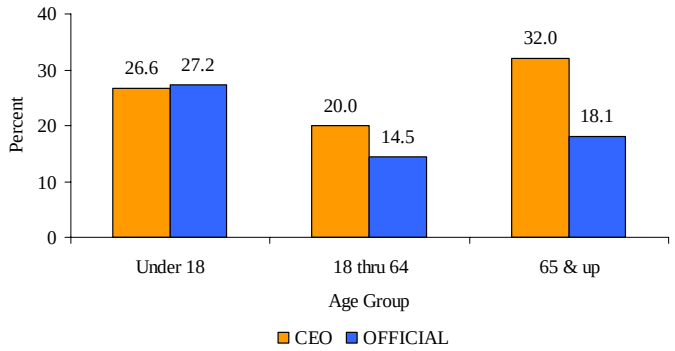
Next, we developed a more inclusive definition of resources, one that accounts for cash income, the effect of taxation, and the cash-equivalent value of nutritional and housing assistance programs. Following the NAS recommendations, non-discretionary costs such as work-related travel and childcare along with medical out-of-pocket expenses are deducted from income. Taken together, these adjustments create a level of "disposable income" that, for many low-income families, is greater than their pre-tax cash income.

FINDINGS

Using both the new thresholds and the expanded definition of resources, CEO estimates that the poverty rate in New York City in 2006 was 23.0 percent. The corresponding poverty rate using the official method for setting the threshold and defining resources counts 18.0 percent of the City's population as poor. This is an attention-getting difference, but it becomes more meaningful to understanding poverty and more useful to understanding the effect of anti-poverty policies as we sift through the data to locate how the change in methodologies affects specific groups within the City. We find that the differences between poverty rates derived from the official and NAS-proposed methods (which are labeled "CEO" in the report) are not evenly distributed across the City's population. As a result, both the demographic and geographic characteristics of poverty in New York City change with the move from the current to the proposed method.

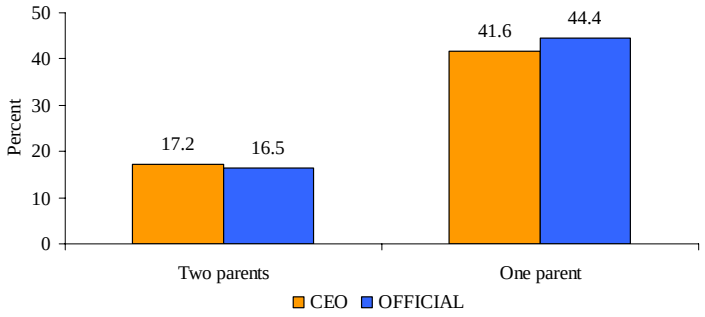
- **The demography of poverty shifts between the CEO and official measures**. Compared to a 5.0 percentage point rise in the poverty rate citywide, the CEO measure results in notably higher poverty rates for the elderly (by 13.9 percentage points), Non-Hispanic whites (by 6.3 percentage points), Asians (by 7.9 percentage points), and naturalized citizens (by 8.3 percentage points). An important exception to the pattern of higher rates across most demographic groups is a lower poverty rate for children living in single-parent families (by 2.8 percentage points). These and other differences in poverty rates by a variety of demographic dimensions are illustrated in Figures 1 through 4 below.

Figure 1. Poverty Rates by Age Group



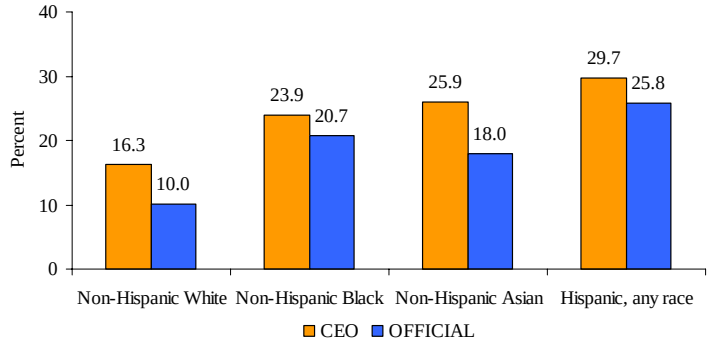
Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Figure 2. Poverty Rates by Presence of Parent (children under 18)

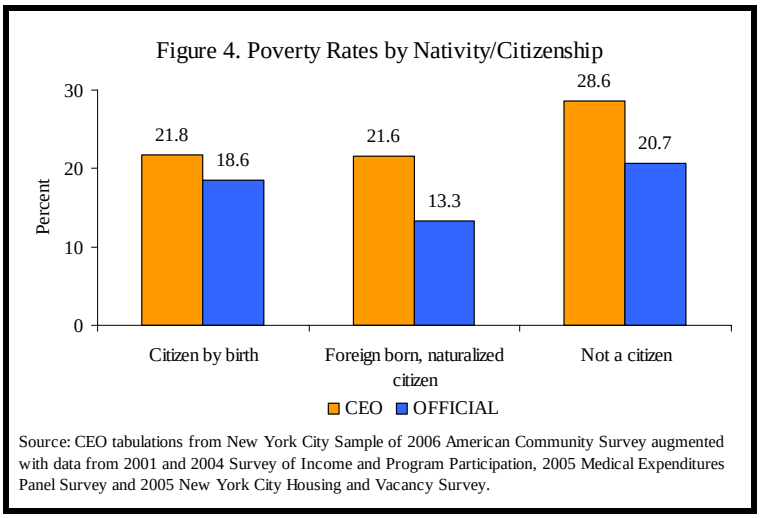


Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

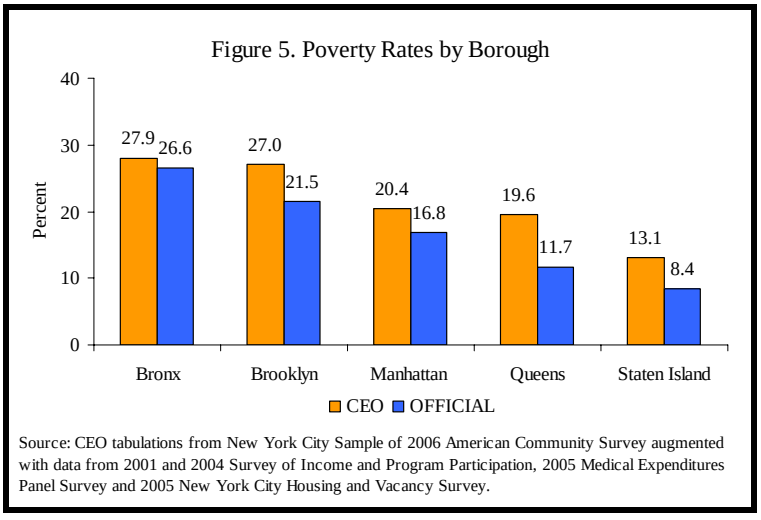
Figure 3. Poverty Rates by Race/Ethnicity



Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.



- **The geography of poverty also shifts between the CEO and official measures**. Poverty rates are higher in each borough with the CEO measure. The poverty rate for the Bronx remains the highest (at 27.9 percent), but the increases in the poverty rates for Queens (from 11.7 percent to 19.6 percent) and Brooklyn (from 21.5 percent to 27.0 percent) are larger than for the other boroughs. A comparison of poverty rates by borough is given in Figure 5.



The differences in how the CEO poverty measure affects various groups across the City are largely the result of how the formerly unmeasured effects of taxation, nutritional assistance, housing programs, work-related expenses, and medical out-of-pocket expenses affect different groups within the City. For example, we find the higher poverty rate for the elderly is driven by medical expenses. The lower poverty rates for children living in single-parent families, in contrast, results from the increase in measured resources to their families from refundable tax credits, nutritional assistance, and housing programs. The decline in poverty rates in areas of the City such as the South Bronx and

Harlem is associated with the high proportion of residents in these neighborhoods who are living in public housing or who are receiving tenant-based housing subsidies.

This Summary only highlights some of what the full report covers. Chapter One of the report provides a fuller discussion of the weaknesses of the current poverty measure and the reasons why CEO chose to use the National Academy of Science's alternative. Chapter Two provides a detailed account of how we applied the NAS method to construct the CEO poverty measure. Finally, Chapter Three details the results of our work, providing numerous comparisons between poverty rates derived from the CEO and official measures.

CHAPTER ONE

WHY A NEW POVERTY MEASURE FOR NEW YORK CITY?

Mayor Michael Bloomberg's 2006 State of the City speech put poverty reduction on the City's agenda in a new way. His commitment, the deliberations of the Commission for Economic Opportunity, and the subsequent creation of the Center for Economic Opportunity (CEO) all raise two important questions: what exactly are we trying to reduce? And second, how can we gauge progress toward that goal? Good answers, it is widely agreed, cannot be found without a better measure of poverty.

Over the last 40 years, the poverty rate has become one of the nation's most carefully watched social indicators. The U.S. Census Bureau's annual reports on poverty spark discussion of how well low-income Americans are faring. But increasingly, the conversation also includes criticism of how well the poverty rate actually counts the poor.

The Census Bureau measures poverty by comparing a family's total pre-tax cash income against a set of thresholds (the poverty lines) that vary by family size and composition.[1] Income is defined as cash received from any source. This includes earnings, investments, pensions and insurance, as well as government transfers such as social security and welfare payments, as long as they take the form of cash. The threshold levels rise as the number of family members grows. For example, the 2006 Census threshold for a family of one adult and two children was $16,227, while for a two-adult, two-child family it stood at $20,444.[2] If a family's income falls below the threshold, each of the family members is classified as poor. The poverty rate is the proportion of the total population that is living in families with incomes below the poverty line.[3]

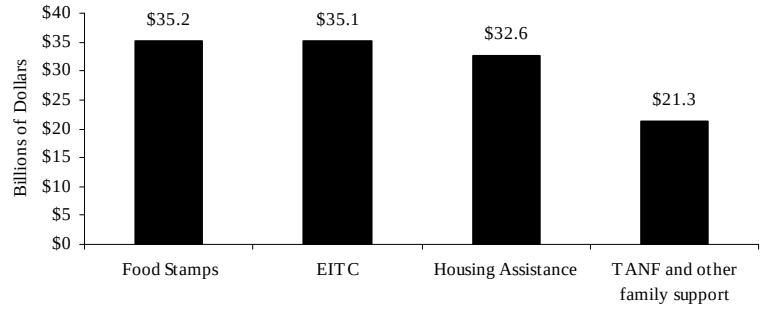
The apparent simplicity of this measure – a straightforward definition of resources and a yardstick against which they are measured – masks a number of significant deficiencies. As a recent review

[1] The U.S. Bureau of the Budget (predecessor to the Office of Management and Budget) established the definition of poverty then in use by the Census Bureau as the official poverty measure for the Federal government's statistical agencies in 1969. Throughout this report we refer alternatively to the official, current, or Census Bureau definition of poverty.
[2] U.S. Bureau of the Census, Poverty Thresholds 2006.
[3] A more detailed explanation for how the U.S. Census Bureau measures poverty is available at: http://www.census.gov/hhes/www/poverty/povdef.html

aptly concluded, "The United States got itself the worst of all worlds – an increasingly mean measure of poverty that also suggested that U.S. social programs were not making a difference when they were." [4]

Pre-tax cash income is an increasingly incomplete indicator of the resources available to a family to meet its needs. Income is taxed and what goes to the government cannot be used for other purposes. But government also uses refundable tax credits (such as the Earned Income Tax Credit) to supplement family income. Cash income also fails to account for the effect that "near-cash" benefit programs have on living standards. Food Stamps or Section 8 housing vouchers, for example, are used as if they were money by low-income families to meet their nutritional and shelter needs. They free recipients' cash income for other necessities such as clothing or transportation. Tax credits and near-cash benefits are an increasing share of government anti-poverty expenditures; Federal spending on Food Stamps, housing subsidies, and the Earned Income Tax Credit, for example, all dwarf expenditures for traditional cash assistance.[5] (See Figure 1.1). As a result, ever more of what government does to provide support to low-income families is uncounted by the Census Bureau's poverty measure.

Figure 1.1: Federal Payments for Individuals in Selected Anti-Poverty Programs, Fiscal 2006



Source: U.S. Bureau of the Census. Statistical Abstract of the United States: 2007. Table 463.

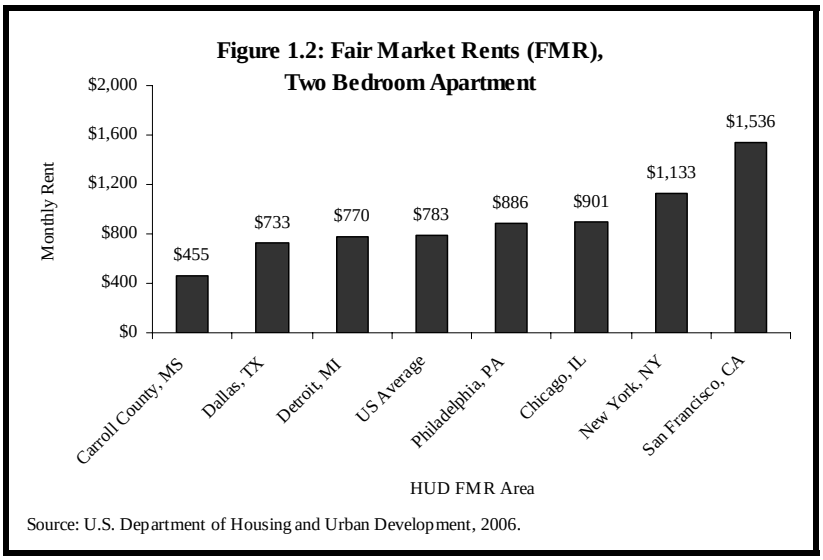
The Census Bureau's income thresholds are also out of date. They are based on work done in the early and mid-1960s for the Social Security Administration and reflect spending levels specified in the U.S. Department of Agriculture's "Economy Food Plan," a diet for "temporary or emergency use

[4] Howard Glennerster. "United States Poverty Studies and Poverty Measurement: The Past Twenty-Five Years." Social Service Review (March 2002): 88-89.
[5] U.S. Bureau of the Census. Statistical Abstract of the United States: 2007. 126th Edition. (Washington, D.C.: U.S. Department of Commerce, 2007).

when funds are low." Because the survey data available at that time indicated that families typically spent a third of their income on food, the thresholds were set at three times the cost of the food plan. With the exception of some minor revisions, the only change in the thresholds since they were officially adopted in 1969 is that the Census Bureau updates them annually by the change in the Consumer Price Index.[6]

More than four decades later, these poverty thresholds have become an anachronism. First, they no longer reflect spending patterns. Food now accounts for little more than one-eighth of family expenditures. Housing is the largest major item in a typical family's budget, representing nearly one-third of total spending.[7]

Another shortcoming of the thresholds is that they are uniform across the nation. The poverty line that defines who is poor in Manhattan is the same poverty line that applies in rural Mississippi. The need to account for differences in living costs across the nation is an obvious concern in New York City, where high housing costs (at 2.5 times those in Carroll County, Mississippi) put a tight squeeze on family budgets.[8] (See Figure 1.2).



A third issue concerning the thresholds is their declining value relative to the income level enjoyed by American families in the economic mainstream. Because they are only adjusted to reflect the

[6] Gordon Fisher. "The Development and History of the Poverty Thresholds." Social Security Bulletin 55, no. 4 (1992): 3-14. www.ssa.gov/history/fisheronpoverty.html.
[7] Family expenditure shares are computed for a consumer unit consisting of a husband and wife with children from data in "Consumer Expenditures in 2005." U.S. Department of Labor, Bureau of Labor Statistics, Report 998, April 2007.
[8] This is the ratio of the U.S. Department of Housing and Urban Development's Fair Market Rents for 2006.

rising cost of living, the poverty lines take no account of the rise in the standard of living. When first introduced, the poverty line for a family of four equaled roughly fifty percent of median income for a family of that size. Today this threshold is less than thirty percent of that median.[9]

A frozen-in-time measure fails to recognize that what is considered an adequate standard of income always reflects social norms at a particular time and place. Expert estimates of the cost of satisfying a family's basic needs as well as public opinion as to what constitutes enough income to "get by in their community," increase at roughly the same pace as does median family income.[10] What the experts and the public understand is that poverty has a social dimension. Poverty entails not only an inability to obtain a physiologically minimum level of consumption, such as enough food to avoid malnutrition, but also the inability to obtain a level of consumption that allows people to fulfill the social roles customary to children or adults in a modern society. As society becomes wealthier and more technologically complex, the resources required to be successful at school and in the workplace, to be an able parent or an informed citizen, all rise as well.

THE CENTER FOR ECONOMIC OPPORTUNITY ALTERNATIVE

CEO reviewed a wide variety of alternative approaches to measuring poverty. The Center's analysis was guided by several criteria.

1. The new measure should be easily understood by the "non-expert" public. This suggested that rather than a radical departure from the familiar, if flawed, Census measure, a new approach should seek to improve its components but maintain its structure (economic resources measured against a set of thresholds that are derived from expenditures on necessities). Specifically the new measure should:
    A. Provide a more complete measure of resources.
    B. Employ thresholds that reflect differences in living costs across the country and update them in a manner that takes into account the long-term rise in living standards.
    C. Provide a poverty rate—a count of the fraction of the City's or nation's population that is living below the poverty line.

[9] James Ziliak. "Understanding Poverty Rates and Gaps: Concepts, Trends, and Challenges." Foundations and Trends in Microeconomics 1, no. 3 (2006).
[10] Fisher, Gordon. "Is There Such a Thing as an Absolute Poverty Line Over Time? Evidence from the United States, Britain, Canada, and Australia on the Income Elasticity of the Poverty Line." Poverty Measurement Working Papers. U.S. Bureau of the Census. http://www.census.gov/hhes/www/povmeas/papers/elastap4.html. (August 2005). See also Rebecca M. Blank "How to Improve Poverty Measurement in the United States." Journal of Policy Analysis and Management, 27, no. 2 (Spring 2008).

2. The new measure should be grounded in a substantial body of research and should be supported by experts in the field. Poverty measurement is a controversial topic. The credibility of a "CEO poverty measure" rests, in part, on the degree to which it is based on research by, and consensus among, expert analysts.
3. The new measure should be a better tool for policymaking. The call for new measures of poverty came out of the frustrations experienced by people who wanted to design policies to address poverty. CEO put a premium on the extent to which a new measure could capture the impacts of public policy.
4. A new measure should be practicable—that is, the City must be able to turn a better idea into an annual measure and do so at a reasonable cost.
5. The new measure should be replicable. To the extent possible, it should rely on data sources and methods that are available to other localities across the country.

CEO concluded that it should base its alternative poverty measure on a set of recommendations that, at the request of Congress, had been developed by the National Academy of Sciences' (NAS) Panel on Poverty and Family Assistance in 1995.[11] While the Federal government has yet to adopt its recommendations (except on an experimental basis), they have received extensive scrutiny by government researchers and university-based scholars.[12] The NAS methodology is widely regarded as a far superior measure of poverty compared with the official measure. (A side-by-side comparison of the official and NAS recommended measure is provided in Figure 1.3).

THE NAS PANEL'S RECOMMENDATIONS IN BRIEF

1. **Changes to the poverty threshold**: The NAS Panel recommended that the poverty thresholds reflect the amount a family needs for food, clothing, shelter, and utilities, rather than the costs of just one basic need. Specifically, the threshold should be set to equal roughly 80 percent of median family expenditures on this market basket of necessities, plus "a little more" for other needs. The Panel proposed that these thresholds be updated annually by the change in median family expenditures on these items, ensuring that over time the poverty line reflected the long-term rise in the nation's standard of living. In addition, the NAS suggested that the thresholds be adjusted geographically to reflect differences in the cost of living across the U.S.

[11] Constance F. Citro and Robert T. Michael, eds. "National Research Council, Panel on Poverty and Family Assistance." In Measuring Poverty: A New Approach. (Washington, D.C.: National Academy Press, 1995).
[12] Much of this research is available at http://www.census.gov/hhes/www/povmeas/nas.html.

2. **Changes to the definition of resources**: The NAS Panel suggested that a much more inclusive definition of family resources be used for comparison to the new thresholds. In addition to cash income, the resource measure should account for the effect of tax liabilities and credits, along with the cash value of "near-cash" benefits. The Panel also recommended that resources should be adjusted to reflect necessary work-related expenses such as commuting costs and childcare. Finally, the Panel proposed that medical out-of-pocket expenses should also be subtracted from income, because what a family must spend to maintain the health of its members is unavailable for purchasing other necessities.

COMPARISON OF POVERTY MEASURES

	CURRENT POVERTY MEASURE	**NATIONAL ACADEMY OF SCIENCES RECOMMENDATION**
THRESHOLD	Equal to three times the cost of "Economy Food Plan."	Equal to roughly 80% of median family expenditures on food, clothing, shelter and utilities, plus "a little more" for misc. items.
	Adjust annually by change in Consumer Price Index.	Adjust annually by change in median expenditures for the items in the threshold.
	No geographic adjustment.	Adjust geographically using differences in housing costs.
RESOURCES	Total family *pre-tax* cash income	Total family *after-tax* income.
		Include value of near-cash benefits such as Food Stamps and housing subsidies.
		Subtract work-related expenses such as child care and transportation costs.
		Subtract medical out-of-pocket expenses.

IMPLEMENTING THE NAS PROPOSAL FOR NEW YORK CITY

This working paper represents CEO's initial attempt to adopt the alternative poverty methodology proposed by the NAS to the realities of life in New York City. Chapter Two lays out the steps we took to construct the measure. This includes delineating who can be counted by our poverty measure, defining families (the poverty unit of analysis), establishing the income thresholds, as well as developing measures of all the resources needed to create a NAS-inspired poverty measure. Chapter Three provides the results of our work. We explore how both the change in the income thresholds and a more inclusive definition of resources affect poverty rates by demographic group and across the City's neighborhoods. In the course of this exercise the chapter offers some ideas about why poverty rates rise (or in a few instances fall) for specific groups of New Yorkers. A series of appendices at the end of the paper explain the choices we made between competing ideas as to how best to account for healthcare spending, childcare needs, and differences in housing status. These appendices also detail the techniques we employed to create estimates for those resources that are part of the NAS proposal, but are not available in our principal data source, the U.S. Bureau of the Census' American Community Survey.

CHAPTER TWO

HOW CEO MEASURES POVERTY

The first chapter of this report provided the rationale for adopting the National Academy of Sciences' alternative methodology for measuring poverty in New York City. This chapter details how the revised poverty measure was constructed. Creating the CEO measure first entailed a series of decisions. These concerned:

- To whom should the poverty measure be applied?
- What income thresholds should be used to define poverty?
- What family resources should be compared to those thresholds?

Once these decisions were made, the next task was to develop methods for measuring those resources that belong in the alternative poverty measure, but are not reported in the 2006 U.S. Census Bureau's American Community Survey (ACS), the principal data source we use in this study. The rest of the chapter provides a description of how taxes, the value of nutritional assistance, an adjustment for housing status, commuting costs, childcare expenses and medical out-of-pocket expenditures were estimated.

2.1 The Poverty Universe and Unit of Analysis in the CEO Poverty Measure

WHO IS COUNTED IN MEASURING POVERTY?

Not everyone can be counted in measuring poverty. For example, the poverty "universe" used by the Census Bureau excludes most people living in group quarters such as college dormitories, nursing homes, and prisons.[13] Unrelated persons who are under 15 years of age are also excluded, as are members of the armed forces. The main reason for excluding these individuals is the difficulty in measuring their income.

The CEO measure makes a few additional exclusions from the population. As Table 2.1 illustrates, the universe for this study comprised a bit more than 8.0 million out of the 8.2 million New York

[13] See http://www.census.gov/acs/www/Downloads/2006_ACS_GQ_Definitions.pdf for a complete definition of group quarters.

City residents. Most of the 191,000 people not in the poverty universe are members of the same groups as those excluded by the Census Bureau.

Table 2.1

Population Included in the CEO Measure of Poverty (The "Poverty Universe")

	Number of Persons	Share of Population
Total Population	8,213,578	100.0%
Group Quarters	181,318	2.2%
Foster Children	9,379	0.1%
Unrelated Persons under 15	495	0.0%
Sum of Excluded Persons	191,192	2.3%
Total Poverty Universe	8,022,386	97.7%

Source: CEO tabulations from New York City Sample of 2006 American Community Survey.
See text for explanation of concepts.

Those who are excluded fall into three categories:

1. **People living in group quarters**. Group quarters are institutions that provide housing and (often) other services to their residents. Much of the group quarters population is in no position to earn income and many of their basic needs are being met by the institutions they reside in. The Census Bureau's poverty reports exclude most of the group quarters population from the poverty universe for this reason. We have excluded the entire population in group quarters, first, because it is conceptually more consistent and second, because the lack of data in the ACS about this part of the population makes it impossible to calculate their "disposable" income.

2. **Foster children living in households**. These are people who are under the age of 18 and have been placed by New York City's Administration for Children's Services in a household to receive parental care. The Census Bureau does not count the income of the family they reside with in determining their poverty status. As a result, the vast majority of foster children (if they are 15 years or older, see below) are classified as poor, even if the families they live with are not. However, public programs are contributing to their support. For example, all foster children are enrolled in Medicaid. In addition, the families that take in foster children are compensated for the expenses they incur in caring for them. The value of this support is not measured as a form of income either for the foster child or for the family

in which the foster child resides. Under these circumstances, measuring the unmet economic needs of foster children would be impossible given available data.

3. **Unrelated individuals under the age of 15**. The Census Bureau does not collect income data for persons under 15 and considers those among them who are not family members (and therefore have no family income) to be persons for whom no poverty status can be determined. This study follows this practice for the few children who fall outside of any family unit, which, as explained in the next section, is the basis for measuring poverty.

THE UNIT OF ANALYSIS: WHO IS SHARING INCOME AND EXPENSES?

From the perspective of the current Census Bureau methodology, individuals are considered poor if the total pre-tax income of the family they live in fails to reach the poverty threshold for their family 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 Census Bureau's poverty measure are composed of people who are related to the household head by blood, marriage, or adoption. As indicated in Table 2.2, nearly eight-in-ten of those included in the New York City poverty universe live in families defined in this way.[14]

This study modifies the Census Bureau's family unit in two ways. First, people who are unmarried partners of the household head are considered part of that head's family rather than separate unrelated individuals.[15] Following the recommendation of the NAS, such people are treated as the reference person's spouse.[16] 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 reference person's family. This change in methodology brings another 240,000 people into a family unit, creating what is labeled in Table 2.2 as "Expanded definition."

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[14] Note that Census family does not mean nuclear family. Any relative of the household head, such as a sibling, grandchild, in-law, aunt, uncle, cousin is considered a family member in the Census (and CEO) poverty measure.
[15] The ACS Subject Definition manual 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.
[16] Constance F. Citro and Robert T. Michael, eds. "National Research Council, Panel on Poverty and Family Assistance." In Measuring Poverty: A New Approach. (Washington, D.C.: National Academy Press, 1995), 306.

Second, this study creates additional family units labeled "People in unrelated subfamilies" within households where there is evidence that two or more persons who are not related to the householder are related to each other. 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 single or married couple families, with or without their own children. Unrelated family members make up less than one percent of the New York City poverty universe. See Appendix A for more details on how these families were created.

The remainder of the poverty universe is composed of "Unrelated individuals." These are people who are either living alone (1,006,000) or are living in a household with others, but with whom they have no familial relationship (388,000). Both groups of unrelated individuals are treated as "single-person families"[17] and their poverty status is derived using only their own disposable personal incomes.[18]

Table 2.2

The Unit of Analysis for Poverty Measurement

	Number of Persons	Share of Poverty Universe
People in Families: Census Definition	6,358,458	79.3%
People in Families: Expanded Definition	6,598,029	82.2%
People in Unrelated Subfamilies	29,809	0.4%
Unrelated Individuals	1,394,548	17.4%
Total	8,022,386	100.0%

Source: CEO tabulations from New York City Sample of 2006 American Community Survey.
See text for explanation of concepts.

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

1. Expanded families: all persons residing in the same household who are related to the reference person by blood, marriage, adoption or as unmarried partners (and any children of those partners not already identified as related to the reference person).

2. Unrelated subfamilies.

[17] There is controversy over the treatment of unrelated persons who live with others as single-person poverty units. See Appendix A for more discussion.
[18] There are exceptions in instances where we have prorated household level elements of disposable income, such as Food Stamps and the housing adjustment to poverty units within households.

3. Unrelated individuals.

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

2.2 Establishing the Poverty Threshold

ALIGNING THE CONSTRUCTION OF THE THRESHOLD WITH THE DEFINITION OF FAMILY RESOURCES

A major criterion in the NAS Panel's deliberations was that the thresholds and the resource measure should be defined consistently with each other; the elements on both sides of the ledger must match. Figure 2.1 illustrates that "resources" includes the income that a family can use to meet the needs listed in the threshold. In a few respects the elements that are listed in each side of the figure do not neatly fit into needs on one side and resources on the other. Work-related expenses (transportation to work and childcare) along with medical out-of-pocket expenses are not listed in the elements that define the threshold. They are accounted for on the resource side in the form of deductions from the income available to families to meet their other needs. The Overview to the Appendices of this report provides a detailed explanation for why the NAS made this recommendation.

Figure 2.1

NATIONAL ACADEMY OF SCIENCES' POVERTY MEASURE

Thresholds	Resources
Based on annual out-of-pocket expenditures for these necessities: – Food – Clothing – Shelter – Utilities – Plus a "little more" for miscellaneous needs	Based on "disposable income," the annual flow of resources available to a family to obtain the items in threshold: – Pre-tax cash income – Plus net taxes – Plus subsidies for food and shelter – Minus work-related expenses – Minus medical out-of-pocket spending

DERIVING A REFERENCE FAMILY THRESHOLD FOR NEW YORK CITY

One of the primary goals of the CEO poverty measurement effort is to establish a realistic standard of need for New York City. The National Academy of Sciences recommended that the first step in creating the poverty threshold was to compute a nationwide threshold based on the "reference family" expenditure on food, clothing, shelter, utilities, plus "a little more" for miscellaneous expenses, such as household supplies and personal care products. The reference family is a family household composed of two adults and two children.

The NAS panel did not recommend a specific poverty line; instead it suggested that the threshold fall between the 30th and 35th percentile of the distribution of the amounts that 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).[19] The panel also offered an upper and lower bound for the "little bit more" that it recommended be included in the threshold, a multiplier ranging from 1.15 to 1.25 times the food, clothing, shelter and utilities expenditure estimate.[20] In its NAS-related alternative poverty measures research, the Census Bureau has used the mid-point of the percentage of the median (80.5 percent) and multiplier (1.2) for miscellaneous expenses.[21] This study continues that practice. For 2006, this methodology produces a U.S.-wide poverty threshold for a family composed of two adults and two children of $21,818.[22]

The Academy argued that because living costs were 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 result from differences in housing and utility costs, the panel recommended that only the part of the threshold that is made up of shelter and utilities

[19] The relationship between the percentiles of the distribution and the percentages of the median may have changed since the NAS Panel report.
[20] Citro and Michael (1995), 106. Miscellaneous necessities cover items such as some non-work related travel (e.g. for shopping), household supplies (e.g. detergent) and personal care products (e.g. soap).
[21] For example see Kathleen Short, T. Garner, D. Johnson and P. Doyle. U.S. Bureau of the Census: Experimental Poverty Measures, 1990 to 1997. (Washington, D.C.: U.S. Department of Commerce, Economics and Statistics Administration, June 1999), and Kathleen Short. U.S. Bureau of the Census: Experimental Poverty Measures: 1999. (Washington, D.C.: U.S. Department of Commerce, Economics and Statistics Administration, October 2001).
[22] The NAS thresholds are calculated from the Bureau of Labor Statistics' Consumer Expenditure Survey. A description of this survey is available at http://www.bls.gov/cex/home.htm. The US-wide threshold (labeled FCSU-CE) is posted at http://www.census.gov/hhes/www/povmeas/altmeas06/nas_experimentalthresholds.xls. Note that this threshold does not include principal payments by homeowners as an expenditure.

expenditures should be adjusted. It further suggested that the U.S. Department of Housing and Urban Development's Fair Market Rents could be used as the adjustment factor.[23]

In its NAS-related research reports, the Census Bureau has used 44 percent as the share of the total threshold that represents shelter and utility expenditures.[24] For 2006, this share equaled $9,600 for the Census Bureau's reference family of two adults and two children. This study adjusted this amount to take account of the high cost of housing in New York City. This was done by comparing the New York metropolitan area Fair Market Rent (FMR) for a two-bedroom apartment to the national average (weighted by population) for a similar apartment. The New York City FMR in 2006 was $1,133, versus a national average of $783; this implies that New York City rents for such apartments were 1.45 times the national average.[25]

Adjusting the shelter and utilities component of the threshold by multiplying it by 1.45 to allow for New York's higher housing costs creates a new shelter and utilities portion of the reference-family threshold equal to $13,920. When this is added to the non-shelter and utilities portion of the threshold (which remains unchanged from the NAS national measure) the total threshold for the reference family of two adults and two children becomes $26,138 (see Table 2.3). This threshold is about 20 percent higher than the US-wide NAS threshold and about 28 percent higher than the official Census Bureau poverty line.[26]

[23] Citro and Michael (1995), 182-201.
[24] This proportion has not been recalculated or updated since the early 1990s. Given the run up in housing prices since that time, this proportion may well have risen.
[25] The Fair Market Rents are available at www.huduser.org. This approach is a deviation from that taken in the Census Bureau's experimental poverty measures reports. In that research the regional adjustments are carried out by grouping all households within each state into one metropolitan and one non-metropolitan area. This method would have put New York City in the same housing market as far lower housing cost areas such as Albany, Buffalo, and Syracuse. Our approach provides a more New York City-specific measure.
[26] Interestingly the difference between the U.S. and New York City NAS-based thresholds is close to a 2003 estimate for cost of living differences in a much more inclusive market basket of goods of 22 percent. See Bettina H Aten. "Report on Interarea Price Levels WP2005-11." (Washington, D.C.:U.S. Department of Commerce, Bureau of Economic Analysis, November 2005).

Table 2.3

CEO Poverty Threshold for a Reference Family of Two Adults and Two Children, 2006

Official Census Bureau Threshold	$20,444
NAS Threshold at National Level	$21,818
Shelter & Utility Share of National NAS Threshold (44%)	$9,600
NAS Shelter & Utility Share Times FMR Index for NYC (1.45)	$13,920
Non-shelter Share of Threshold (56%)	$12,218
Sum of Adjusted Shelter and Non-shelter Thresholds	$26,138

Source: CEO calculation from data provided by U.S. Bureau of the Census and U.S. Department of Housing and Urban Development.
See text for explanation of concepts.

Once a threshold for the reference family has been set, thresholds need to be calculated for families (or poverty units) of various 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. This is now used in the Census Bureau's experimental poverty measure reports and has gained wide acceptance among poverty researchers.[27]

Table 2.4 provides a selection of family size adjustments as developed 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 presented in Table 2.4 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 $26,138 would have to be multiplied by 0.88, for a threshold of $23,006. A comparison of these revised thresholds with other income adequacy measures for New York City is given in Appendix A.

[27] David Betson. "Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement." (University of Notre Dame, March 1996) http://aspe.os.dhhs.gov/poverty/papers/escale.pdf. See Appendix A for more details on how this scale compares with the scale implicit in the official Census poverty measure.

Table 2.4

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

Number of Adults	Number of Children under 18				
	None	One	Two	Three	Four
One	0.463	0.699	0.830	0.953	1.069
Two	0.653	0.880	1.000	1.114	1.223
Three	1.000	1.114	1.223	1.328	1.430
Four	1.223	1.328	1.430	1.529	1.625

Source: Computed by CEO based on Betson, David. 1996. *Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement*. University of Notre Dame. March. Available at: http://aspe.os.dhhs.gov/poverty/papers/escale.pdf.

Table 2.5 gives the resulting poverty thresholds for a variety of families.

Table 2.5

CEO Poverty Thresholds for NYC, by Family Composition, 2006

Number of Adults	Number of Children under 18				
	None	One	Two	Three	Four
One	$12,114	$18,280	$21,702	$24,906	$27,941
Two	$17,081	$23,006	$26,138	$29,116	$31,969
Three	$26,138	$29,116	$31,969	$34,716	$37,374
Four	$31,969	$34,716	$37,374	$39,952	$42,461

Source: CEO calulations from data in Tables 2.3 and 2.4.
See text for explanation of concepts.

2.3 Measuring Family Resources

Revising the measure of family resources that is compared to the poverty thresholds is a crucial part of the changes in poverty measurement recommended by the National Academy of Sciences. As discussed in Chapter One, the resource measure used in the Census Bureau's official poverty calculation is a very limited one: it only counts pre-tax cash income. The NAS recommended a very substantial expansion of that concept of income. In addition to cash income, the Academy recommended that the resource measure should account for the effect of tax liabilities and credits, the cash value of "near-cash" benefits such as Food Stamps, and benefits like housing subsidies that reduce the amount that families must spend on basic necessities. The NAS Panel also recommended

that income should be adjusted to reflect necessary work-related expenses such as commuting costs and childcare. Finally, the panel proposed that medical out-of-pocket expenses be accounted for. Because work-related expenses and healthcare costs reduce the income families have to purchase other necessities, spending on these items are subtracted from their incomes. Only after adding and subtracting all of these adjustments, as appropriate, will the resulting measure of "disposable" income reflect the amount that families actually have available to meet their needs.

This report adopts a resource measure that mirrors the NAS disposable income definition as closely as possible given the data available. It uses the Public Use Microdata Sample from the 2006 Census Bureau's American Community Survey (ACS) as the principal source of information for calculating family resources. The ACS is now the largest of the Census Bureau's annual demographic surveys, covering roughly three million addresses across the United States. It provides much of the information we need to understand poverty, such as living arrangements, school enrollment, educational attainment, race, citizenship, and employment, as well as income from a variety of sources, including earnings, social security, public assistance, Supplemental Security Income, along with interest, dividends, and rental income.[28] The microdata file offers a sample (over 25,000 households in New York City) that is sufficiently large to analyze poverty in the City across demographic groups and neighborhoods. Without this rich level of detail and the ability to track year-to-year changes, our measure would be far less useful for understanding poverty in New York.

Still, adopting the ACS for a NAS-style poverty measure creates challenges. Although the ACS provides data on cash income and the value of Food Stamp benefits, many of the other elements of disposable income are not collected in the survey. These include taxes, participation in school-based nutritional assistance, receipt of housing assistance, childcare expenses, and medical out-of-pocket spending. Much of the work in creating the CEO poverty measure involved developing ways to assign values for these items to the families in the ACS sample. Fortunately, CEO was able to learn from the work of researchers who have developed statistical methods to estimate these expenses. Many of them offered suggestions as to how we could adapt their work to the ACS.[29] Details on the statistical techniques and data used to estimate specific components of the resource measure are given in the Appendices.

[28] A detailed description of the ACS is available at http://www.census.gov/acs/www/.
[29] CEO would like particularly to thank John Iceland, Amy O'Hara, Jessica Banthin, David Johnson and Kathleen Short for sharing their expertise in this area.

The remainder of this chapter describes the methods used to develop estimates of disposable family incomes. Developing these estimates involves several different steps:

1. Estimate each family unit's total tax liability and any tax credits received;
2. Add in "cash-like" benefits such as food assistance;
3. Estimate the impact of housing status on shelter needs and adjust resources accordingly;
4. Compute and subtract work expenses, including transportation and childcare; and
5. Estimate and subtract medical out-of-pocket expenditures.

These steps are outlined in the next five subsections of this report.

TAX LIABILITIES AND CREDITS

The NAS recommended that the measure of resources account for taxation. Most families' after-tax income is less than their income before taxes. But the opposite is true for many low-income families. The structure of tax rates and a multitude of tax credits provide a net increase in resources that can move some families above the poverty threshold. Capturing these effects, therefore, is essential to creating a better measure of poverty. Unfortunately, tax data are not reported in the American Community Survey. Therefore, CEO constructed a model that estimated tax liabilities and credits.

First, payroll taxes were calculated for all wage earners. FICA (Federal Insurance Contributions Act) is a payroll tax that funds two social insurance programs: Medicare Part A and Old Age, Survivors and Disability Insurance (OASDI).[30] All wage earners are subject to this tax, beginning with the first dollar of earnings. In 2006, the tax rate for Medicare Part A was 1.4 percent of all earnings and the tax rate for OASDI was 6.2 percent for earnings under $94,200. The two combined result in a 7.65 percent tax on wages and salaries.[31]

Next, income taxes were estimated. This was done in several steps.

- First, tax filing units were created within each household. A tax unit is composed of the filer(s) and any dependents that are claimed on their tax return.

[30] Medicare provides hospitalization insurance for the elderly and chronically ill or disabled. OASDI provides income support in the form of Social Security payments.
[31] CEO did not model sales and property taxes because the Consumer Expenditure Survey includes them in its measure of expenditures.

- Filing status for each tax unit was then determined based on its characteristics (e.g. married couple, single, etc).
- Finally, a simulated tax return was constructed for each filer. Particular attention was paid to those tax credits and liabilities most relevant to low-income families.

The result is a dataset including information on taxes owed and tax benefits received within each CEO poverty unit.[32]

Creating Tax Filing Units in the CEO Model

To calculate taxes and credits for the tax unit it is necessary to identify filers, their filing status, and number of dependents they may be claiming. Anyone who would file a version of the 1040 IRS tax form (or any couple for married filers) and their dependents make up a tax unit. A filer is anyone who is either 19 years of age or older, married, or has a dependent. A dependent is defined as any

person who is less than 19 years of age, or 19-24 years old and enrolled in school, or who has personal income of less than $3,300. All persons with wage income were considered to be potential filers, including those with earned income below the statutory filing threshold. In order to capture potential Earned Income Tax Credit filers, returns were created for all wage earners with an adjusted gross income greater than zero.[33] Tax filers can file one of several different types of return, depending on their family type. The possible filing statuses are: single, married filing joint (a married couple who combine their incomes and file one return); married filing separate (a married couple who file two individual returns); or head of household (a single filer with dependents).[34]

Estimating Liabilities and Credits

The CEO tax model estimated a variety of taxes and credits at the Federal, State and City levels for each filing unit. To start the process, gross income is adjusted to taxable income. All filers were

[32] Tax filing units are not identical to poverty units. They were constructed on the basis of the tax code. If there were more than one tax unit within a family, we accounted for the effect of taxation from all the tax units in the family. For more details on the creation of the tax filing unit and the relationship between filing units and other types of units used in this study see Appendix B.

[33] See comparison or results with actual EITC filings in Appendix B. Time constraints prevented development of a set of dependent filers (filers who are dependents on someone else's tax return, but earn enough income that they are required to file their own return).

[34] The federal tax code also includes newly widowed spouses, but the ACS data does not provide enough information to identify these taxpayers. Married taxpayers filing separately may choose to do so if they are separated from their spouses, or in the case of some filers, where the married filing joint tax rate would result in higher tax payments.

given a standard deduction.[35] Dependent exemptions were applied based on the number of dependents assigned to each filer in creating the tax unit. Next, the model calculates income taxes using the appropriate tax bracket and tax rate for the adjusted incomes.

Most tax filing units have some tax liability. All but the poorest families incur Federal income tax liabilities. New York State and City assess income taxes beginning at the first dollar earned. For most low-income households, however, income taxes may be matched or even exceeded by available tax credits.

Tax Credits

Tax credits can be divided into two categories: nonrefundable and refundable. Nonrefundable credits offset taxes owed, but cannot exceed the total tax due. At best, they eliminate any tax liability. Refundable credits that are larger than the tax owed will generate a payment to the filer.

The credits measured in this study are those that are most applicable to low-income tax payers. Nonrefundable credits are applied first; then refundable credits are applied to the remaining taxes due, creating a refund if the credits exceed the original liability. The credits are listed in text boxes 2.1 and 2.2. All rates are for 2006 tax returns.

Text box 2.1
Federal Tax Credits

Nonrefundable Credits (Only offset taxes owed):
Child and Dependent Care Credit: A credit against expenses for child care or care of disabled dependent.
- Helps wage-earners pay for the expenses associated with paying for dependent care while they work.

Elderly & Disabled Credit: A credit for the elderly and permanently disabled.
Education Credits: Two different credits, the Hope Credit and Lifetime Learning Credit.
- Purpose is to offset the costs of college tuition.

Child Tax Credit: A credit of $1,000 per child under 17.
- Phases out as income rises.
- This credit is partially refundable, depending on income.

Refundable Credits (May provide payments above the amount of taxes owed):
Earned Income Tax Credit: A credit for low income wage earners that is highest when wages are lower, and phases out as wages rise.
- A larger credit is allowed for married couples and for taxpayers with children.
- The highest amount of the Federal EITC available in 2006 was slightly more than $4,500.
- The EITC was originally designed to compensate low income workers for their FICA payments but has grown to effectively become a small income supplement for poorest workers.
- The credit is fully refundable.

Additional Child Tax Credit: Expands the child tax credit for some larger and/or low income households to make the credit fully refundable.

[35] Appendix B provides a justification for why only the standard deduction is used.

Text box 2.2
New York State and City Tax Credits

Nonrefundable Credits
New York State Household Credit: A credit in the $100 range for tax filers earning under $28,000 if single or $32,000 if married.
New York City Household Credit: A credit of under $30 for low income households.
Refundable
Empire State Child Credit: Available if the Federal Child Credit is claimed.

- Based on a percentage of the federal credit.

New York State Child and Dependent Care Credit: State credit to offset child care expenses.
New York State Earned Income Credit: Equal to 30 percent of Federal EIC.

- Phases out according to the same schedule as the Federal credit.

Real Property Tax Credit (circuit breaker): Taxpayers earning under $18,000 a year receive a credit to alleviate the impact of property taxes.

- Renters can also claim the credit, based on the assumption that property taxes are passed on by landlords in rents.

New York College Tuition Credit: Credit for college tuition costs.
New York City School Tax Credit (STAR): A second property tax relief - credits against school taxes contained in property tax.
New York City Earned Income Credit: Equal to 5 percent of Federal EIC.

- Phases out according to the same schedule as the Federal credit.

The Effect of the Tax System

Federal Taxes

Table 2.6 organizes taxpayers with incomes under $50,000 by income group and shows the effect of tax credits on net taxation as calculated by the CEO model. Taxes paid per filer (this is labeled "Tax After Credits per filer" in the table) are negative for filers under $20,000, indicating that these filers are receiving more from the income tax system than they are paying into it.

The Earned Income Tax Credit (EITC) is the single most important factor in offsetting taxes and generating a refund. More than one million New York City residents receive the EITC and the mean amount they receive is more than $1,200.

Table 2.6

Federal Taxes and Credits (Thousands of Dollars)

Income Group	Number of Filers	Tax Before Credits	Selected Credits				Total Credits	Tax After Credits	Tax After Credits, Per Filer
			Child Care	Earned Income Credit	Child Credit	Additional Child Credit			
$0-$5,000	930,852	$0	$0	$83,958	$0	$0	$83,958	-$83,958	-$90
$5,001-$10,000	318,725	$3,102	$13,120	$274,252	$0	$0	$287,654	-$284,552	-$893
$10,001-$15,000	332,318	$70,584	$21,096	$332,439	$69	$1,626	$361,813	-$291,229	-$876
$15,001-$20,000	296,869	$164,235	$21,249	$296,310	$4,911	$13,494	$349,836	-$185,602	-$625
$20,001-$25,000	289,047	$322,289	$25,099	$198,879	$19,059	$35,471	$299,504	$22,786	$79
$25,001-$30,000	257,929	$452,096	$22,727	$106,825	$35,986	$45,423	$248,329	$203,767	$790
$30,001-$35,000	243,842	$577,878	$23,607	$47,591	$54,059	$35,796	$203,493	$374,385	$1,535
$35,001-$40,000	214,319	$657,172	$18,813	$7,264	$61,399	$22,861	$164,575	$492,597	$2,298
$40,001-$45,000	212,311	$839,400	$15,218	$0	$68,754	$15,405	$140,989	$698,411	$3,290
$45,001-$50,000	173,830	$858,139	$14,333	$0	$65,448	$10,140	$116,091	$742,048	$4,269
Total Under $50,001	3,270,042	$3,944,897	$175,261	$1,347,519	$309,686	$180,215	$2,256,242	$1,688,654	$516

Source: CEO tabulations from New York City Sample of 2006 American Community Survey and CEO tax model. See text for explanation of concepts.

Note: Income categories shown in this table are based on Adjusted Gross Income (AGI) for Federal tax filers and are different from income concepts used elsewhere in this study.

Table 2.7

Federal Tax Credits

	Mean	Filers
Child Care Credit	$830	111,141
Elderly and Disabled Credit	$652	48,663
Education Credit	$2,014	127,768
Child Tax Credit	$1,291	586,650
Additional Child Credit	$1,062	180,292
Earned Income Tax Credit (EITC)	$1,256	1,072,487

Source: CEO tabulations from New York City Sample of 2006 American Community Survey and CEO tax model.
See text for explanation of concepts.

Note: Means and numbers of filers are shown for those who claimed each credit. Table excludes approximately 50,000 tax filers who filed under the status "married filing single." Further details on the incomes of those receiving specific credits may be found in the Appendix.

In addition to refundable credits such as the EITC and the Federal Additional Child Credit, some nonrefundable credits provide tax relief to low-income families. Because those in the very lowest income brackets rarely owe much tax, nonrefundable credits are of limited use to the poorest families. As incomes rise, however, more taxpayers are able to take advantage of nonrefundable credits such as those for college tuition and childcare. There are limits to the positive effects that both types of tax credits have on tax filers, however. As Table 2.6 illustrates, when incomes rise above $20,000 tax liabilities exceed the credits and the federal tax system begins to reduce family resources.

State and Local Taxes

Like the Federal tax system, the State and City tax code has a progressive structure; tax liabilities rise with income. Standard deductions and exemptions eliminate taxable income for the lowest income bracket. But State and local taxes can be a heavier burden on poorer taxpayers since there is a lower amount allowed for dependent exemptions. This creates higher taxable income, beginning at incomes over $5,000.

This problem is offset through State and City tax credits. Once again, a refundable EITC is a major source of tax relief at both the City and State levels. Another credit at the State and City level is the

Household Credit. It is a nonrefundable credit, but plays a significant role in eliminating tax liability.

The tax code also indirectly takes into account the high cost of housing in New York City through the Real Property Tax Credit and School Tax Credit. Property taxes rise with property values. These taxes are paid directly by homeowners and indirectly, in the form of rent increases, by renters.[36] The Real Property Tax Credit (also known as the Circuit Breaker) provides some relief to the lowest-income New Yorkers who face rising housing costs. The credit is available to taxpayers with various combinations of income under $18,000, rent under $450 or property values under $85,000. For New York City residents, this effectively benefits extremely poor households who live in rent controlled or rent stabilized units, or who own restricted equity types of housing. The School Tax Credit (also known as the STAR Credit) is another credit against the City income tax. It is funded by the State, but compensates City residents for some of the school taxes paid through State income taxes. This is a flat credit of between $115 and $230 that is available to all city residents and is not limited by income (a larger component of the STAR Credit is also included in the property tax). The State provides additional tax relief in refundable credits for children, childcare and college tuition.[37]

Table 2.8 summarizes the impact of State and local taxes. The same pattern emerges here as with Federal taxes: the tax system bolsters income at the lowest income levels, but tax liabilities begin to exceed credits for filers above $20,000 in income.

[36] Some offsets to the property tax are included in the personal income tax so that renters can also receive benefits.
[37] New York City also provides a childcare credit, beginning in tax year 2007. The refundable credit covers up to $1,733 in care for children up to four years old for taxpayers earning under $30,000.

Table 2.8

Total Receipts and Expenditures for State and City Taxes and Credits (Thousands of Dollars)

NEW YORK STATE										
Income Group	**Number of Filers**	**Tax Before Credits**	**Household Credit**	**Child Credit**	**Child Care Credit**	**Earned Income Credit**	**Real Property Credit**	**Education**	**State Tax After Credits**	**Tax After Credits Per Filer**
$0-$5,000	930,852	$0	$0	$8,357	$3,307	$25,187	$81,004	$14,139	-$131,995	-$142
$5,001-$10,000	318,725	$3,712	$2,634	$3,165	$14,432	$79,684	$16,350	$5,348	-$117,902	-$370
$10,001-$15,000	332,318	$34,061	$8,852	$3,832	$23,205	$96,413	$13,136	$4,569	-$115,946	-$349
$15,001-$20,000	296,869	$73,659	$12,024	$5,378	$23,374	$85,181	$6,078	$3,755	-$62,132	-$209
$20,001-$25,000	289,047	$136,276	$12,746	$6,763	$27,609	$54,858	$0	$3,515	$30,787	$107
$25,001-$30,000	257,929	$187,306	$5,506	$7,084	$24,700	$29,529	$0	$3,968	$116,519	$452
$30,001-$35,000	243,842	$236,840	$1,170	$5,855	$24,895	$13,399	$0	$3,260	$188,262	$772
$35,001-$40,000	214,319	$269,890	$0	$5,933	$19,223	$2,179	$0	$3,196	$239,360	$1,117
$40,001-$45,000	212,311	$333,779	$0	$4,674	$15,218	$0	$0	$2,276	$311,612	$1,468
$45,001-$50,000	173,830	$323,699	$0	$4,784	$14,345	$0	$0	$1,944	$302,625	$1,741
Total Under $50,001	3,270,042	$1,599,223	$42,932	$55,825	$190,306	$386,430	$116,569	$45,972	$761,189	$233

NEW YORK CITY							
Income Group	**Number of Filers**	**Tax Before Credits**	**Household Credit**	**School Credit**	**Earned Income Credit**	**City Tax After Credits**	**Tax After Credits Per Filer**
$0-$5,000	930,852	$0	$0	$127,122	$4,198	-$131,320	-$141
$5,001-$10,000	318,725	$2,698	$1,081	$42,516	$13,713	-$54,611	-$171
$10,001-$15,000	332,318	$24,754	$2,156	$46,199	$16,622	-$40,223	-$121
$15,001-$20,000	296,869	$52,537	$4,483	$42,811	$14,815	-$9,573	-$32
$20,001-$25,000	289,047	$93,578	$2,156	$41,693	$9,944	$39,785	$138
$25,001-$30,000	257,929	$124,987	$0	$36,928	$5,341	$82,719	$321
$30,001-$35,000	243,842	$152,893	$0	$35,462	$2,380	$115,051	$472
$35,001-$40,000	214,319	$169,464	$0	$31,548	$363	$137,553	$642
$40,001-$45,000	212,311	$205,086	$0	$31,136	$0	$173,950	$819
$45,001-$50,000	173,830	$196,382	$0	$26,408	$0	$169,974	$978
Total Under $50,001	3,270,042	$1,022,379	$9,876	$461,821	$67,376	$483,305	$148

Note:
[1] State and city taxes are based on a state adjusted gross income that is slightly different from federal agi. Income groups in this table are the same as those used in Table One, based on federal adjusted
[2] City taxable income is same as state.

Source: CEO tabulations from New York City Sample of 2006 American Community Survey and CEO tax model. See text for explanation of concepts.

In sum, the tax code is designed to benefit low-income taxpayers both by lowering taxable income and by assessing a lower tax rate on them. In addition, a diverse range of tax credits at the Federal, State and City level address other economic problems faced by families. The EITC and credits to compensate for costs of childcare, household size, property taxes and education result in after-tax incomes that are higher than pre-tax incomes for filers with income below $20,000. When filer incomes move beyond $20,000, however, taxes become a negative in their finances. Because many credits phase out between $20,000 and the poverty threshold for many families, families who are trying to move out of poverty can experience the handicap of rapidly increasing taxes on each additional dollar they earn. The effect of the tax system on poverty rates is explored in Chapter Three.

NUTRITIONAL ASSISTANCE

Food Stamps

Food Stamps are the most commonly cited example of a "cash-like" benefit. A dollar in Food Stamp benefits (which are available to families living below 130 percent of the Federal poverty guidelines) frees up a dollar of other income that can be spent meeting other, non-food needs. For this reason both the NAS and the CEO have opted to treat Food Stamps as if they were cash for the purpose of measuring a family's resources.[38]

Information on how much *households* receive in Food Stamps is collected in the ACS. CEO then prorated the value of the food stamp benefit across the poverty units within the household.[39] There were 1.3 million people in New York City who benefited from Food Stamps in 2006. Table 2.9 compares New York City Human Resources Administrative data to the ACS calculations.[40]

[38] Citro and Michael (1995), 224.

[39] Following the Census Bureau practice of assigning the Food Stamp dollar value on the household level, we assigned a pro-rated value of the household's food stamp dollar value to each poverty unit in the household. This pro-rated value was calculated based on the number of people in the household versus the number of people in the poverty unit and the food stamp value assigned accordingly.

[40] The actual dollar value for self-reporting of food stamp benefits is historically underreported. Respondents appear to be relatively accurate when reporting receipt of food stamp benefits, but they often underreport the actual dollar value received. This may be because many are mistakenly reporting their monthly, not annual food stamp benefit.

Table 2.9

Food Stamps Receipt in 2006

	Total Number of Recipients	Aggregate Dollar Value
Administrative Data	1,455,531	$1,478,262,871
CEO Estimate	1,301,550	$831,131,927

Source: New York City Human Resources Administration Office of Data Reporting and Analysis and CEO tabulations from New York City Sample of 2006 American Community Survey.

Table 2.10 shows the mean, median and percentile values for family units receiving Food Stamps.

Table 2.10

Annual Value of Food Stamps Benefit per Family

Mean	$1,853
Median	$1,625

Value of Benefits at Each Decile Level	
10th	$183
20th	$427
30th	$914
40th	$1,320
50th	$1,625
60th	$1,828
70th	$2,031
80th	$3,047
90th	$3,961

Source: CEO tabulations from New York City Sample of 2006 American Community Survey.

School Lunch Subsidy

The National School Lunch Program (NSLP) offers free lunches to all school children whose family income is below 130 percent of Federal poverty guidelines and reduced-price lunches to school children whose family income is between 130 and 185 percent of Federal poverty guidelines. Like Food Stamps, receipt of free or reduced-price school lunches can free resources for other uses that would otherwise be spent on food.

The American Community Survey does not record whether children in households receive free or reduced-price lunch, making it necessary for the study to estimate how much families might benefit

from the program. To develop this estimate we first used ACS schooling and income variables to establish eligibility. Only children from kindergarten through high school were assumed to be eligible for lunch subsidies. The total number of free and reduced-price lunch recipients found in the ACS was comparable to the numbers shown in City administrative data.[41]

Table 2.11

Students Eligible for Free or Reduced-Price Lunch in the ACS

Free	456,646
Reduced-price	162,552
Total	619,198

Source: CEO tabulations from New York City Sample of 2006 American Community Survey using program rules.

Next, the benefit value per lunch was applied, and multiplied by the number of school days. To calculate an annual school lunch value, the study followed the United States Census Bureau methodology and used the Census Bureau's 2006 dollar value for free and reduced-price school lunch—$2.505 per day for free lunches, and $2.109 for reduced-price.[42] The school lunch value was then multiplied by 175 school days, assuming 180 days in the school year and allowing 5 days for absences.[43] This established an annual value of $438.38 for those children who received free lunches and $369.08 for those who received reduced-price lunches if they attended school regularly.

The value of the lunch subsidy was then assigned to each family based on number of eligible children. The table below shows the mean, median and percentile values for family units with children receiving free or reduced-price lunches.

[41] We compared the ACS data with New York City Department of Education data from October 31, 2005 indicating that 599,896 public school students were eligible for either free or reduced-price lunch. One possible explanation for the discrepancy in data is that the ACS analysis calculates eligibility for all students, while the DOE data is only for public school students.
[42] Edward Welniak, personal correspondence to the authors. Mr. Welniak is the Chief of Income Surveys Branch at the U.S. Department of Commerce, Bureau of the Census, Housing and Household Economic Statistics Division.
[43] School Year Calendar for 2005-2006 and 2006-2007, The New York City Department of Education.

Table 2.12

Free or Reduced-Price Lunch Value per Family

Mean	$764
Median	$738

Value of Benefits at Each Decile Level	
10th	$369
20th	$438
30th	$438
40th	$438
50th	$738
60th	$877
70th	$877
80th	$1,107
90th	$1,315

Source: CEO tabulations from New York City Sample of 2006 American Community Survey using Census Bureau's 2006 dollar value for free and reduced-price school lunch.

HOUSING: ADJUSTING FOR MARKET PRICES AND ACTUAL EXPENDITURES

Any credible method for measuring poverty in New York must account for the high cost of housing in our city. It must also recognize that what families in the city actually pay for their shelter varies widely, even for housing of similar size and quality. As Table 2.13 indicates, homeowners who have paid off their mortgages spend less on shelter than do families who are still making mortgage payments. Renters living in public housing or who are receiving a Section 8 or similar housing subsidy have dramatically lower shelter costs than families who pay market rate rents. Tenants in rent-stabilized or -controlled apartments also receive some protection from the high cost of housing.

Table 2.13

Median Annual Shelter Costs for Reference Family of Two Adults and Two Children, by Housing Status

	Renters				Owners		CEO Housing Threshold for Reference Family in NYC
	Public Housing	Tenant-based Subsidy	Stabilized / Controlled	Market Rate	Free and Clear	With Mortgage	
Median Annual Housing Costs	$3,812	$5,411	$11,455	$15,119	$9,745	$26,739	$13,920
Share of Population	5.0	7.8	26.6	22.8	8.7	29.0	

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2005 New York City Housing and Vacancy Survey.

Note: Shelter costs include rent, mortgage payments, homeowners insurance, property taxes, and utilities.

A first step toward creating a realistic poverty threshold for New York is taken by adjusting the nationally-derived poverty threshold for the difference between the city's and nation's shelter and utility costs. As described earlier in this chapter, the shelter and utilities proportion of the poverty threshold for a two-adult, two-child family was increased from $9,600 to $13,920.

This adjustment provides a more realistic poverty line, but it fails to recognize that many New Yorkers can obtain housing of adequate quality at a lower price. Public housing residents, for example, do not need to pay as much for housing as New Yorkers who are paying purely market-determined costs for their shelter. To capture the effect of these different circumstances, an additional adjustment is needed to account for the variation in the actual income required by those in different types of housing to meet their shelter needs.

This study could have adjusted for these differences by creating a separate array of poverty thresholds for families in each type of housing status, to reflect differences in the income required to meet their housing needs.[44] However, this approach would have required a myriad of separate thresholds to accommodate possible differences in housing status and even then a large amount of the variation in actual need would remain unmeasured. Another possible adjustment would have been to add the difference between the appropriate fair market rent for each family's dwelling and 30 percent of the family's total income (the family's contribution under public housing programs) to the

[44] This approach has been suggested in the context of valuing the benefits of owner-occupied housing. See Thesia I. Garner. "Incorporating the Value of Owner-Occupied Housing in Poverty Measurement." (National Research Council Workshop on Experimental Poverty Measures, June 2004).

resources of families in public housing or who are receiving a housing subsidy.[45] However, this adjustment would not provide a method of accounting for the value of living in rent stabilized or controlled units or the value of owning a home free and clear of mortgage payments.

Instead, CEO developed an adjustment to disposable income using families' actual out-of-pocket expenditures for housing and utilities. (As discussed in the next section, these were estimated from data in the New York City Housing and Vacancy Survey.). For all families in housing whose cost is *not* a reflection of market prices, CEO added the difference between the income a family would need in order to meet its housing needs at market rates (represented by the appropriate shelter threshold) and its actual housing expenditures to the family's disposable income.

The formula used for estimating a family's poverty status after taking into account the income needed to meet housing needs is:

(1) If [Disposable Family Income + (Housing and Utilities Portion of Poverty Threshold — Actual Housing and Utilities Expenditures)] < Total Poverty Threshold, then the family is in poverty.[46]

This approach allows a dollar value to be placed on the benefits of residence in public housing, the receipt of tenant-based subsidies, and residence in rent-stabilized or -controlled apartments. Because they are also largely insulated from the vagaries of the housing market, homeowners who no longer have a mortgage also received an adjustment to their total resources to reflect their relatively low housing payments. If actual expenditures were less than the housing and utility portion of the threshold, the difference between them was considered to be available to the family to meet their non-housing needs.[47]

An argument can be made that, given a shortage of affordable housing, this adjustment should apply to all families. This would mean that some market-rate renters and homeowners who have not yet paid off their mortgages might be classified as poor if their actual housing costs exceeded the housing threshold, thereby lowering their remaining disposable income to the point where it was below the poverty line. This study has assumed that such high levels of housing spending are likely to be discretionary. In other words, despite the availability of adequate housing at a cost equal to the

[45] See Sharon Stern. Sharon Stern. "Housing Subsidies in a Measure of Poverty." (U.S. Department of Commerce, Bureau of the Census, June 2004) http://www.census.gov/hhes/www/povmeas/papers/jsm00.pdf.
[46] If there is more than one poverty unit within the household, the adjustment is prorated across the units by their share of the number of members of the household.
[47] The housing adjustments can be negative as well as positive, if a family that receives housing benefits still pays more than the housing threshold for its housing costs.

shelter portion of the threshold, these families are choosing to spend more on housing because they value higher quality housing (or neighborhoods) over other items in the threshold. Evidence for the availability of adequate housing at that cost lies in a comparison between the median shelter costs for reference families living in market rate units and the shelter threshold; the threshold equals 92 percent of the median.[48] Median shelter expenditures for homeowners who are still paying a mortgage are much higher.[49] See Table 2.13. Table 2.14 shows the median adjustment by housing status.

Table 2.14

Median Housing Adjustment, by Housing Status

Renters				Owners	
Public Housing	**Tenant-based subsidy**	**Stabilized / Controlled**	**Market Rate**	**Free and Clear**	**With Mortgage**
$6,828	$8,140	$121	N.A	$1,385	N.A.

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2005 New York City Housing and Vacancy Survey.

Note: See text for explanation of concepts.

N.A.- Not applicable, no housing adjustment applied.

Measuring Housing Status and Costs

The American Community Survey does not provide the information on housing status needed to for CEOs housing adjustment. But, New York is fortunate in having an excellent survey of local housing costs and conditions that is conducted every three years by the Census Bureau, New York City Housing and Vacancy Survey (HVS). This survey draws a sample of more than 15,000 households from all five boroughs and collects detailed information on rents paid, subsidies received, the presence or absence of rent controls or stabilization, and a host of other housing-related information. Text box 2.3 proves more information about the survey.

[48] On a monthly basis the shelter portion of the threshold is also very close to the two-bedroom fair market rent ($1,133), which is calculated at the 40th percentile of recently rented units in adequate condition. The shelter threshold also corresponds to the 40th percentile for shelter costs for market rate renters.

[49] The NAS threshold does not include mortgage principal payments. See Thesia Garner and Kathleen Short. U.S. Bureau of the Census: Creating a Consistent Poverty Measure Over Time Using NAS Procedures: 1996-2005. (Washington, D.C.: U.S. Department of Commerce, 2008), http://www.census.gov/hhes/www/povmeas/papers/experimental_measures_96_05v7.pdf.

Text box 2.3

Overview of the NYC Housing and Vacancy Survey

The New York City Housing and Vacancy Survey is conducted by the Census Bureau and sponsored by the New York City Department of Housing Preservation and Development. It is conducted every three years to comply with New York State and New York City's rent regulation laws. The rental vacancy rate is the primary focus of the survey, because it is used to evaluate the current rent control and rent stabilization laws. Other important survey data include rent regulation status, residence in public housing, receipt of tenant-based subsidies, number of rooms in unit, monthly rent, mortgage payments, and other housing and utility costs.

Although the main purpose of the survey is to collect housing data, demographic information is also collected. This includes age, sex, race, ethnicity, household composition, labor force status, income, employment, and educational attainment. The sample size for the survey is approximately 15,000 occupied housing units representing the five boroughs of the City. More information is available at: www.census.gov/hhes/www/housing/nychvs/2002/overview.html.

The latest data available from the HVS are from 2005. To use them in this study, therefore, it was necessary to update them to 2006. Separate adjustments were made for different housing statuses, based on administrative data. Out-of-pocket rents for Public Housing were increased by 5.9 percent, based on information from the New York City Housing Authority (NYCHA). The adjustment for stabilized and controlled units was 4.0 percent, based on New York City Rent Guidelines. The adjustment for market rate rental units was 6.8 percent, derived from U. S. Bureau of Labor Statistic's Consumer Price Index for the New York-New Jersey region. The analog of rental costs for home owners is the sum of the values of mortgage or condo fees, insurance, real estate taxes and water/sewer charges. These were adjusted up by 6.0 percent, again based on the regional Consumer Price Index.

CEO merged this information on housing status and costs from the HVS into the ACS to create measures of housing status and housing and utility expenditures. The procedure was to take each unit in the ACS, examine its size, income, homeownership status, and geographic area, and then find a case in the HVS that matched it in all respects. Based on the matches, rental type and expenses as measured in the HVS were assigned to cases in the ACS. In total, 99.5 percent of the cases were matched in this procedure. More details on the HVS and the matching procedure can be found in Appendix C.

WORK-RELATED EXPENSES: TRANSPORTATION AND CHILDCARE

The National Academy of Sciences Panel recommended deducting work-related transportation costs from family income.[50] Unfortunately the American Community Survey does not include all of the data needed to estimate these expenses. Therefore, this study used data from other sources to estimate such expenses for each family unit in the survey.

Transportation Costs

The cost of transportation to and from work was estimated using information on commuting methods from the ACS and data from various other sources on the costs of commuting in New York. The study assumed an eight-hour work day, and calculated the number of work days per week for each earner based on his or her reported weekly hours. The number of work-related trips was capped at 14 per week, equal to a trip to-and-from work for each day of the week. About half of the sample made 10 trips per week, while about a quarter made more and a quarter made fewer.

The number of weekly trips was then multiplied by the cost per trip to establish a weekly commuting cost. Once the weekly commuting cost was established, a yearly commuting cost was calculated by multiplying it by the number of weeks worked as reported in the ACS. Because the data for weeks worked can include vacations, holidays, or sick time, two weeks were deducted for all those with 52 weeks worked. No time was deducted from other responses because it was unclear if those non-working weeks had been deducted in the respondents' reported weeks worked.

Using this methodology, the median weekly transportation cost for a full-time worker who traveled via subway or bus was $18.80. If that worker traveled to work 50 weeks per year, this would create an annual transportation cost of $940.00. If this same worker drove to work alone, the median weekly transportation costs would be $36.49 for an annual cost of $1,824.50. There are no transportation costs assigned to those that walked, biked, traveled via ferry or worked at home. The table below shows the number and percentage of workers that traveled via each mode and the corresponding weekly median transportation cost.[51]

[50] Citro and Michael (1995), 240-243.
[51] See Appendix D for mean and median annual transportation costs.

Table 2.15

Transportation Mode and Median Weekly Costs

Mode of Transport	Number of Commuters	Percent	Median Weekly Cost
Drove Alone	846,903	20.7%	$36.49
Drove with Others	201,308	4.9%	$15.12
Bus	477,431	11.7%	$18.80
Subway	1,377,796	33.7%	$18.80
Railroad	77,338	1.9%	$40.00
Ferry	7,778	0.2%	$0.00
Taxi	48,002	1.2%	$96.00
Motorcycle	2,423	0.1%	$24.33
Bike	18,037	0.4%	$0.00
Walked	342,120	8.4%	$0.00
Worked at Home	144,286	3.5%	$0.00
Other Method	20,316	0.5%	$18.80
No Mode	530,437	13.0%	$18.80
Total	4,094,175	100.0%	$18.80

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from the following sources, "Regional Travel-Household Interview Survey," February 2000, New York Metropolitan Transportation Council-New Jersey Transportation Planning Authority; IRS Revenue Procedure 2005-78 established the standard mileage rates for deductible costs of operating an automobile for business purposes; The New York City Taxicab Fact Book, March 2006, Schaller Consulting.

Child Care Needs and Expenses

Families with children in which all of the parents work must often pay for childcare. Some families are able to find relatives to provide care and a few are able to stagger the working hours of the adults in the family to allow someone to be available when necessary. But for a high proportion of working parents, especially those with young children, childcare is an unavoidable expense. The NAS therefore identified childcare used by working parents as a work-related expense that should be deducted from family income.[52]

Since the ACS does not include data on childcare, these expenses had to be estimated. CEO turned to the Survey of Income and Program Participation (SIPP) (See Text box 2.4) as a source of data on childcare expenditures. The SIPP has a wealth of data on the amount of money families spend on childcare and its detailed information on family characteristics allows data from the SIPP to be

[52] Citro and Michael (1995), 45.

matched appropriately with information on similar families in the ACS. The estimates of childcare spending from the SIPP used in this study are for out-of-pocket spending.

Text box 2.4

Overview of the Survey of Income and Program Participation (SIPP)

The SIPP is a nationally representative survey conducted by the Census Bureau of people 15 years of age and over, on topics including sources of income, employment history, assets and liabilities, education, marriage, fertility, and child care. The survey design is set up as a continuous series of panels, with individuals in the same households being interviewed over a period of time ranging from 2 to 4 years. As described in the Appendix, this study used data from the 2001 and 2004 SIPP panels.

The SIPP childcare modules contain detailed data on weekly childcare expenditures for children up to 14 years of age, as well as on the different modes of childcare (e.g., child day care, family day care, nursery school, and informal sources of care such as grandparents, other relatives and non-relatives). In total, there were 29,871 families in the 2001 SIPP, and 41,854 families in the 2004 SIPP childcare modules. More information is available at: http://www.census.gov/sipp/.

Following a procedure used by the NAS, CEO employed a two-stage approach to estimate childcare expenditures for working families.[53] First, the likelihood that families are paying for childcare was estimated from the SIPP data, based on characteristics such as the number and ages of family members, education levels and hours worked by adults in the family, proportion of total family earnings earned by female family members, and participation in welfare programs such as Temporary Assistance to Needy Families (TANF). While characteristics other than those used in this study undoubtedly help to determine whether a family uses paid care, only variables that were included in both the SIPP and ACS could be used. We restricted our sample to working families with at least one child under 12. To reflect the New York City context more closely we also restricted the sample to SIPP families living in urban areas.[54] The impacts of different

[53] Citro and Michael (1995), 255. This method has been used in other studies that estimated childcare expenditures. For example, Iceland and Ribar applied a similar two-stage approach using the Survey of Income and Program Participation as the source of data for childcare expenses. Using this dataset, they estimated the likelihood that families were paying for childcare, as well as how much families would be paying. See John Iceland and David Ribar. "Measuring the Impact of Child Care Expenses on Poverty" (paper presented at the 2001 Population Association of America (PAA) meetings, Washington, D.C.)

[54] While the SIPP is a nationally representative dataset, the data did not survey enough families in New York City to conduct the imputation based only on that sample. Restricting the sample of families to urban areas was also just the first step in ensuring comparability of families across the two datasets. As described in more detail in Appendix D, the regression-based approach compares families across the SIPP and ACS on a range of socioeconomic characteristics (such as ethnic background, income, and renting/owning status) to ensure that families in the ACS New York City sample were imputed childcare expenditures associated with similar families in the SIPP urban sample.

characteristics on childcare spending were calculated separately for married couples and single-headed families.

The set of characteristics listed above were then used to determine the approximate amount that each family who paid for care was likely to spend. For example, the analysis found that having an additional child under age six in the family raised average childcare expenditures for married couple families by about $50 per week. The predicted weekly childcare expenditures for each family were then multiplied by the lowest number of weeks in the past twelve months that any parent in the family had been working, to arrive at an annual childcare expenditure figure. Childcare expenditures were assigned only for families where parents had to pay for childcare so they could work or look for work. Childcare expenses for each family were also capped at the amount earned by the lowest-earning parent, to further ensure that measured expenditures were non-discretionary. The statistical approach used is described in more detail in Appendix D.

Table 2.16 presents estimated childcare expenditures for ACS families by family type, as well as number of children under 12. Annual and weekly childcare expenditures were higher for married (two-parent) families as compared to single-parent families. For example, among married and single-parent families with one child under 12, median expenditures per week were about $140 and $80, respectively. These expenditures translated into annual amounts of about $6,500 and $4,000, respectively. Having two children under 12 also raised annual expenditures markedly across both samples (by about $900 for single-parent families, and $1,850 for married families), although additional spending increased less dramatically with a third child in this age group.

Interestingly, while the share of single-parent families paying for childcare rose steadily with the number of young children (from 48.9 percent for families with one child, to 65.5 percent for families with three children) the share of married-couple families paying for childcare actually declined over this range. About 46 percent of married families with one child under 12 paid for childcare, also slightly lower than that for single-parent families. Other alternatives among married couples for childcare, such as one parent staying home, might be a reason for this difference. In Appendix D, we discuss these childcare estimates in greater detail.

Table 2.16

Estimated Childcare Expenditures, by Family

	Single-parent Families				Two-parent Families			
			If Paid, Median				If Paid, Median	
	Number of Families	Percent Paying for Childcare	Weekly	Annual	Number of Families	Percent Paying for Childcare	Weekly	Annual
Number of children Under 12								
One	145,889	48.9	$79	$3,960	224,805	45.6	$139	$6,483
Two	52,358	52.4	$98	$4,864	157,470	41.5	$179	$8,330
Three	14,947	65.5	$94	$4,782	40,971	32.5	$196	$8,329

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from the 2001 and 2004 SIPP.

Note:

(1) Poverty units with at least one economically active adult, and at least one child under 12, represented the sample for the calculations.

(2) Poverty unit weights were used to construct the estimates. Specifically, the poverty unit weight = (Number of persons in the poverty unit/number of persons in the household)*(ACS household weight).

(3) The table only includes families with up to 3 children; the number of families with four or more children is small.

Since this study uses out-of-pocket childcare expenditures as the basis for estimating childcare costs, the impacts of childcare subsidies could not be estimated directly. The data used to estimate expenditures focus only on the net cost to the family, and do not include any information on subsidies received. However, the impacts of subsidies are captured indirectly, in that the amounts actually spent by families represent costs after any subsidies have been received. Therefore, the amounts of childcare spending reported in the SIPP would have been much higher if families had no access to subsidies. As described in Appendix D, when comparing the CEO childcare expenditure estimates with New York City administrative data on subsidized out-of-pocket childcare spending by low-income working families, we found that the CEO estimates were not very different from the spending patterns of working families in New York City who were able to access subsidized childcare.[55]

MEDICAL NEEDS AND EXPENDITURES

Medical out-of-pocket expenses (MOOP) can be a major factor in determining whether families have enough resources to meet all their basic needs. High out-of-pocket medical expenditures can leave families (whose resources would otherwise be adequate) without the ability to pay for the necessities included in the poverty thresholds.

[55] Administrative data on subsidized childcare were provided by the New York City Administration for Children's Services for the year 2006.

Text box 2.5

Overview of the Medical Expenditure Panel Survey (MEPS)

The MEPS is an annual, nationally representative survey of the U.S. civilian population that began in 1996, with the most recent publicly available survey ending in 2005. The survey is sponsored by the U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality. The household component of the MEPS, which was used in this analysis, surveys people across the U.S. on the medical care services they use, how much they pay, and how much of their expenditures are covered by insurance. Health status is also covered in the MEPS questionnaire. In some cases, information from medical providers is used to supplement these data. A range of socioeconomic characteristics of individuals are covered, including education, employment status, sources of income, citizenship status and ethnicity. Each survey round covers from 10,000 to14,000 families. The 2005 MEPS covered about 32,000 individuals across roughly 13,000 families. Of this, about 10 percent were 65 years of age and above. More information is available at: http://www.meps.ahrq.gov/mepsweb/.

A large proportion of the poor and near-poor in New York have access to Medicaid, which typically covers almost all medical expenses. However, many families may still pay a large portion of their income on medical care. This can include low-income people without insurance or the elderly who (although they are covered by Medicare) are not eligible for Medicaid. Even those who are privately insured may face large deductibles and co-payments.

To account for these costs, the National Academy of Sciences proposed that out-of-pocket medical expenses be deducted from family resources before those resources are compared to the poverty thresholds.[56] Since MOOP expenditures are not included in the American Community Survey, they were estimated using a technique similar to that used to estimate childcare costs. We used the 2005 Medical Expenditure Panel Survey (MEPS), a detailed survey on medical expenditures conducted by the Agency for Healthcare Research and Quality (AHRQ) as the basis for estimating each family's out-of-pocket medical costs (see Text box 2.5). The MEPS includes data on out-of-pocket payments for insurance premiums as well as on direct spending on medical care.[57]

Estimating medical expenditures is a complex endeavor, because such expenses are likely to be based on family characteristics such as illness that are not measured in the ACS and therefore cannot be used as the basis for estimation. Medical expenditures tend to be highly skewed—most people

[56] Citro and Michael (1995), 208. The proposal to deduct medical out-of-pocket expenses from disposable income has generated controversy. See the Appendix Overview for a discussion.
[57] These data, along with much help in using and interpreting them, were provided to us by Jessica Banthin and her staff at AHRQ.

have fairly low expenditures, but some people with major medical problems have very high expenses. Thus, averaging expenditures across families to estimate spending will not accurately replicate actual medical spending—it will over-estimate spending for most people and under-estimate it for those with high health care needs.

As a remedy, this study divided families into groups based on factors related to medical expenditures such as family size, income, and other socioeconomic characteristics.[58] The 25th, 50th, and 75th percentiles of annual medical out-of-pocket expenditures were then calculated across all families in each group.[59] This exercise was conducted separately for families headed by elderly (aged 65 and older) and non-elderly individuals (see Appendix E for more details). Each ACS family was then randomly assigned one of the three levels of annual expenditure appropriate for the family's demographic and income group. Using three different expenditure levels for each group preserved at least some of the variation seen in the distribution of medical spending within each group.[60]

As with the childcare estimation procedure, only characteristics included in both the MEPS and the ACS could be used to match families across the two datasets.[61]

Table 2.17 summarizes estimated out-of-pocket medical expenditures, for elderly and non-elderly families by number of people in the family. Unsurprisingly, spending by the elderly families is higher than the non-elderly. For one-person families, median annual expenditures were about twice as much for elderly families (about $1,800) as compared to the non-elderly (about $880). This difference became more pronounced for two-person families, where expenditures by the elderly nearly tripled to about $4,900, compared to non-elderly families where expenditures doubled to

[58] Since the 2005 MEPS had only 12,810 families, the entire sample was used in this study, rather than an urban subset (as with the SIPP in the childcare imputation). According to the Agency for Healthcare Research and Quality (which provided the MEPS data), the distribution of expenditures across the 2005 MEPS sample was comparable to the aggregate New York City estimates.

[59] As mentioned earlier, because the distribution of medical expenditures increased exponentially with small increases in income above the median, imputing the mean expenditure (which would be driven by very high expenditures at the upper end of the distribution) for a given group of families would substantially overestimate medical expenditures for most families. Doing so would also misrepresent the skewed distribution of medical expenditures in the MEPS.

[60] This decision contrasts with some medical expenditure imputations used by the Census Bureau, where the mean medical expenditure for a particular group is assigned to families sharing those economic and demographic characteristics. As mentioned above, the mean is likely to overestimate medical expenditures, given that it tends to be driven by spending at the upper end of the distribution.

[61] Insurance status was not used as one of the characteristics to estimate medical expenditures. Checks made on the MEPS data revealed that the other variables included (such as employment status, ethnicity, income) accounted for most of the effects of insurance status on medical expenditures. Insurance status is not available in the ACS, but given the high correlation of insurance with other included variables it appears unlikely that including it would have much further effect on estimates of spending.

roughly $1,600.[62] Further discussion of these medical expenditure estimates, including a distribution of expenses by income, is given in Appendix E.

Table 2.17

Estimated Medical out-of-pocket Expenditures for Families, by Number of People in Family

	Number of Families	Median Annual Expenditure
Non-elderly Family Head		
One	656,827	$878
Two	342,666	$1,604
Three	156,976	$1,712
Four	99,535	$2,203
Elderly Family Head (65 Years of Age and Over)		
One	309,439	$1,816
Two	104,612	$4,864

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from the 2005 Medical Expenditure Panel Survey (MEPS). Jessica Banthin at the Agency for Healthcare Research and Quality (AHRQ) calculated out of pocket medical expenditure for elderly and non-elderly samples in the MEPS.

Note: Poverty unit weights were used to construct the estimates. Specifically, the poverty unit weight = (Number of persons in the poverty unit/number of persons in the household)*(ACS household weight).

CONCLUSION

This chapter began with an explanation of several choices that needed to be made in order to create a new measure of poverty. It described the decisions CEO made about who to include in the poverty measure, how persons were grouped in resource-sharing units, and how poverty thresholds and family resources were defined. The second part of the chapter discussed how CEO created estimates for resource items that belong in the National Academy of Sciences' poverty measure, but are not available in the Census Bureau's American Community Survey. Readers who would like more detail on the methods we used to create these estimates can find them in the Appendices to this report. The next chapter offers the results of our work by providing comparisons of poverty rates derived from the CEO model to those derived from the official method

[62] Most elderly-headed families were either one or two members, so we focus on those cases in the table.

CHAPTER THREE

APPLYING THE CEO POVERTY MEASURE

The prior chapter explained how CEO established the poverty threshold and then detailed how resources were defined and measured. This chapter compares poverty rates under the CEO measure—derived from the National Academy of Sciences methodology—against those estimated using the Census Bureau's official method.[63] CEO's application of the NAS recommendations yields a New York City poverty rate of 23.0 percent in 2006. This is considerably higher than the official rate of 19.2 percent reported by the Census Bureau for that year. Although this may be an attention-getting difference, without further information it is not very helpful to understanding poverty or to assessing the adequacy of anti-poverty programs. The important questions to ask are why is this new poverty rate higher? And what does it reveal that the old measure did not?

The chapter begins by exploring how various definitions of income adequacy and resources affect the New York City poverty rate, illuminating the sources of differences between the poverty rates derived from the CEO measure and the Census Bureau method. The next section illustrates how the distribution of the City population by increments of the poverty thresholds differs between the two methodologies. Then a comparison is made between how poverty rates differ by demographic group under the CEO and official poverty measures. The section also indicates how the two measures create different demographic profiles of the poor in New York City. The final section looks at the geography of poverty. It compares poverty rates by borough and neighborhood and indicates how the two measures generate different spatial patterns in the distribution of the City's poor.[64]

3.1 Impacts of Alternative Definitions of Needs and Income on the Poverty Rate

The different poverty rates generated by the CEO and the Census Bureau approaches result both from differences in defining the poverty line as well as measuring income. This section details how

[63] Throughout this chapter we refer to the "CEO measure" of poverty. As Chapter Two detailed, the methods used to create the measure and estimate poverty rates from it represent CEO's attempt to apply the National Academy of Sciences' recommendations to the New York City sample in the U.S. Census Bureau's American Community Survey.

[64] Readers should note that no tests of statistical significance have been applied to the differences between the poverty rates derived from the official and CEO methodologies. These should be interpreted only as different numbers that result from different measures. Because they are derived from sample data, small differences should be interpreted with caution.

different threshold and income concepts generate different poverty rates. The impact of using the CEO thresholds on the City poverty rate is unambiguous; because they are higher than the official ones (see table 2.3), they create a higher poverty rate. The effects of changes in the resource measure are more mixed. Expanding the definition of resources to include the effect of tax credits and the value of near-cash benefits decreases poverty rates. But the CEO approach also reduces the measure of available resources by subtracting work-related expenses and medical out-of-pocket spending. These largely offset the previous additions.

Text box 3.1

The Effect of the CEO Poverty Universe and Poverty Units on Poverty Rates

As Chapter Two describes, our poverty measure uses somewhat different methods for establishing the population for whom a poverty status is determined (the poverty universe) and how we define families (the unit of analysis). The narrower definition of the poverty universe we employ lowers the official poverty rate, from 19.2 percent to 18.9 percent. Our more inclusive definition of family has an even greater impact, dropping the rate to 18.0 percent. The first decline reflects the exclusion of a small group of persons who have a very high probability of being classified as poor by the official method. The second decline is created by a greater sharing of resources that results from placing more individuals into family units. Thus the tables in this chapter that provide comparisons between the official and CEO measures of poverty report the differences that emerge from using an alternative threshold and definition of resources, net of changes in the poverty universe and unit of analysis.

The effects of specific variations in the income counted in measuring poverty are shown in Table 3.1. This table reports poverty rates using a progressively more inclusive set of income definitions, listed down the rows, which are then compared against the CEO and official Census poverty thresholds, identified across the columns. Each income definition shown in the table consists of all of the adjustments included in the previous definitions as well as the new adjustment introduced for that income type. For each threshold and income concept, the table reports a poverty rate.

- **Pre-tax cash income**: The most limited income definition considered here is pre-tax cash income, the resource concept used by the Census Bureau in its official measure. This measure includes earnings and benefits received in cash, but excludes taxes, benefits such as Food Stamps, and any allowance for work expenses or medical out-of-pocket costs. The first row indicates that considering only pre-tax cash income yields a poverty rate of 23.9 using the CEO threshold, compared to a poverty rate of 18.0 when the official Census threshold is used. The 5.9 percentage point difference between these two rates identifies the

effect that simply using a higher threshold has on the poverty rate. (See Text box 3.1 for why the 18.0 percent poverty rate varies from that reported by the Census Bureau for New York).

- **Income after taxes**: Next, income is adjusted for taxation. This adjustment includes the net effect of Federal, State and City income tax liabilities and credits. Most families' after-tax income is less than their income before taxes, but refundable tax credits such as the Earned Income Tax Credit have created a "negative" income tax for many low-income families; they receive more from the income tax system than they pay into it. After-tax income also factors in the negative effect of payroll taxes on net earnings. All told, the tax system increases income for families vulnerable to poverty and thus lowers the poverty rate, to 23.2 percent using the CEO threshold and to 16.0 percent with the official Census threshold.
- **After-tax income including the cash value of nutritional assistance**: Some benefits that families receive are used like cash to purchase necessities, but are not counted under the official Census resource measure. The next adjustment adds the cash value of the Food Stamp and school lunch nutritional assistance programs to income. Counting these benefits lowers the poverty rate by 1.3 percentage points for the CEO threshold and 1.9 percentage points for the official Census threshold.
- **After-tax income including the cash value of nutritional assistance and housing adjustment:** Some families receive housing assistance that frees up resources that they would otherwise have had to spend on shelter. This assistance can include Section 8 rental subsidies, public housing, or participation in some other program (such as rent regulation) that limits total shelter and utility costs. In addition some homeowners own their dwellings free and clear of any mortgage payments. To account for the impact that these circumstances have on disposable income, the difference between the housing portion of the threshold and actual housing expenditures has been added to resources. (See Chapter Two for details.) Adding the value of this "housing adjustment" to resources reduces the poverty rate by 3.3 percentage points under the CEO thresholds and by 2.3 percentage points under the official Census thresholds. The total effect of adding taxation, the value of near-cash nutritional programs, and the housing adjustment to income lowers the CEO poverty rate to 18.6 percent and the official rate to 11.8 percent.
- **After-tax income including the cash value of nutritional assistance and housing adjustment minus work-related expenses:** Families that depend on employment for their incomes often experience expenses that are a necessary part of earning a living.

Transportation costs must be paid in order to get to work and families with small children must sometimes pay childcare costs so that parents can work. Subtracting such expenses from income increases poverty rates by 1.8 percentage points under the CEO threshold and by 0.9 percentage points for the Census threshold.

- **After-tax income including the cash value of nutritional assistance and housing adjustment minus work-related expenses and medical out-of-pocket spending (labeled "MOOP" in the table.):** Finally, some families experience medical problems that require payments beyond what is covered by insurance, and some families do not have insurance, or may be only partially covered. If someone in such a family has a medical problem they may have to pay treatment costs out of pocket. Income that has been spent on medical care is not available to support other types of consumption. Subtracting these expenditures from resources increases the poverty rate by 2.6 percentage points under the CEO threshold and by 1.7 percentage points under the Census threshold.

Table 3.1

Alternative Poverty Rates for New York City

Income Concept	Threshold Concept		Percentage Point Change, by Successive Income Concept	
	CEO	OFFICIAL	CEO	OFFICIAL
1. Pre-tax Cash	23.9	18.0		
2. After-tax Cash	23.2	16.0	-0.7	-2.0
3. After Tax, After Near-cash Nutritional Subsidies	21.8	14.1	-1.3	-1.9
4. After Tax, After Near-cash Nutritional Subsidies and Housing Adjustment	18.6	11.8	-3.3	-2.3
5. After Tax, After Nutritional Subsidies and Housing Adjustment, Minus Work-related Expenses	20.4	12.7	1.8	0.9
6. After Tax, After Nutrition and Housing Adjustment, Minus Work-related Expenses, Minus MOOP	23.0	14.4	2.6	1.7

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

With the most complete definition of resources, the New York City poverty rate is 23.0 percent using the CEO threshold and 14.4 percent with the Census' official poverty threshold. The former figure offers a poverty rate that represents CEO's application of the NAS methodology.

It should be noted that the step by step expansion of the income concept does not have a uniform effect between the two threshold concepts. In particular, the declines in the poverty rates that occur

when the effect of taxation and nutritional assistance are added to income are somewhat larger under the Census thresholds than for the CEO thresholds. The effect of housing programs, however, is somewhat larger under the CEO threshold compared to the official one. When disposable income is reduced to account for work-related expenses and medical out-of-pocket costs the increases in poverty are greater under the CEO threshold than under the official poverty line. Thus, what began as a 5.9 percentage point difference using pre-tax cash as the definition of income, expands to an 8.6 percentage point difference as the income concept is fully expanded. Some of the reasons for this pattern are identified later in this chapter.

3.2 Distribution of the Population by Intervals of the Poverty Threshold

The comparisons in Table 3.1 treat the question of poverty status as if the answer was best understood as yes or no; one is or is not poor. But it is important to understand to what extent people counted as poor are near or far from the poverty line, and it is useful to know what fraction of the population is "near-poor" — living above but still close to poverty. Table 3.2 depicts the distribution of the population by gradations of the poverty threshold, beginning with extreme poverty — people living below one-half of the poverty threshold — and increasing by 25 percentage point intervals.[65]

[65] Readers should keep in mind that these poverty rates are also based on the CEO and official definitions of income, respectively.

Table 3.2

Distribution of the Population, by Intervals of the Poverty Threshold

Percent of Threshold	Measure				Percentage Point Difference	
	CEO		OFFICIAL			
	Percent	*Cumulative*	*Percent*	*Cumulative*	*Percent*	*Cumulative*
Under 50	6.5	6.5	7.4	7.4	-0.9	-0.9
50-74	6.9	13.4	4.7	12.1	2.1	1.3
75-99	9.6	23.0	5.8	18.0	3.8	5.0
100-124	11.1	34.1	5.0	23.0	6.1	11.1
125-149	10.2	44.3	4.8	27.8	5.4	16.5
150-174	8.7	53.0	4.6	32.5	4.1	20.6
175-199	6.6	59.6	4.6	37.0	2.0	22.6
200-224	5.8	65.4	4.2	41.3	1.6	24.1
225-249	5.0	70.4	3.9	45.2	1.1	25.2
250-274	4.1	74.5	3.8	49.0	0.3	25.5
275-299	3.8	78.3	3.9	52.9	-0.1	25.4
300 & Higher	21.7	100.0	47.1	100.0		

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

The distribution of the City's population across these gradations varies dramatically between the CEO and Census thresholds. At the very bottom of the distribution, the proportion of the population living below 50 percent of the poverty threshold is somewhat smaller for the CEO measure than it is for the official (6.5 percent against 7.4 percent)—which is notable, given that 50 percent of the poverty threshold represents considerably more money under the CEO threshold than under the Census measure. (For example, for a two adult, two child family 50 percent of the poverty threshold would equal $13,069 per year under the CEO measure and $10,222 per year under the Census' measure.) This finding indicates that for the very poorest New Yorkers, the impact of using a more complete definition of resources outweighs the effect of CEO's higher income standard.

But above this level the pattern shifts markedly; a much larger fraction of the population is living between 50 through 74 percent (6.9 percent compared to 4.7 percent) and 75 through 99 percent of the poverty line (9.6 percent versus 5.8 percent) under the CEO measure compared to the official one. In addition a considerably larger share of the City is living above, but close to the poverty line; 11.1 percent of New Yorkers are between 100 through 124 percent of the CEO threshold, compared to only 5.0 percent using the official threshold. Another 10.2 percent of the population falls between 125 through 149 percent of the poverty line under the CEO threshold, compared to only 4.8 percent of the population within that band under the official threshold. Note that because of differences in

the poverty thresholds, these percentages represent different actual income amounts. (For example, the two adult, two child family's income at 150 percent of the poverty line equals $39,207 under the CEO threshold, compared to $30,666 under the Census' threshold.) Given these differences, and the phase out of many tax credits and other benefit programs in this income range (recall the discussion in Chapter Two), it is not surprising that a higher proportion of New Yorkers are living below 150 percent of the poverty threshold under the CEO measure—44.3 percent against 27.8 percent with the official threshold.

3.3 Differences in Poverty Rates Across Demographic Groups

With a few very notable exceptions, the poverty rate rises under the CEO measure across every demographic group included in the tables below. In Table 3.3a, the largest increases in poverty rates occur among the elderly, whites and Asians, the foreign-born, and persons living in families without minor children. The exception to the general pattern of higher poverty rates is associated with the decline in the poverty rate for children living in single-parent families.

- **By age group:** When the population is examined by age, dramatic differences emerge between the Census and CEO poverty measure. The proportion of children who are living below the CEO poverty line is virtually unchanged from the Census-based estimate, slipping by 0.6 percentage points. The poverty rate for the elderly, in contrast climbs by 13.9 percentage points with the CEO measure. Under the official method, children had, by far, the highest poverty rate. With the CEO method the elderly become the City's poorest age group, with a poverty rate of 32.0 percent. This increase in poverty rates for the elderly largely results from the inclusion of medical costs under the CEO measure, as discussed later in this chapter.
- **By Gender:** Males and females experience a similar rise in their poverty rates under the CEO measure—4.8 percentage points for males and 5.3 percentage points for females.
- **By Race/Ethnicity:** The increases in the poverty rates for whites (6.3 percentage points) and Asians (7.9 percentage points) under the CEO measure are larger than those for blacks (3.2 percentage points) and Hispanics (3.9 percentage points). While Hispanics remain the poorest race/ethnic group in the City, with a poverty rate of 29.7 percent, Asians now have the second highest poverty rate (at 25.9 percent), somewhat above that of New York's black population. Although whites continue to have the lowest poverty rate, the distance between

them and the other race/ethnic groups narrows. (See Text Box 3.2 for an explanation of these categories).

Text box 3.2

Race and Hispanic Ethnicity

We employ five mutually exclusive race/ethnic categories in this report. They are constructed out of two separate demographic characteristics reported in the American Community Survey. We use the variable that indicates whether a person has described themselves as Hispanic to separate the population into Hispanics and Non-Hispanics. All Hispanics are grouped into one category, Hispanics, any race. The Non-Hispanics are distinguished by their racial identification (a different ACS variable) and are listed in the report's tables as Non-Hispanic white; Non-Hispanic black; Non-Hispanic Asian, and Non-Hispanic other. The last category is composed of persons who have identified themselves as belonging to another racial group (such as Native Americans) or have indicated that they belong to two or more racial groups. To avoid cumbersome language the text refers to Hispanics, whites, blacks, and Asians.

- **By Nativity/Citizenship:** Foreign-born New Yorkers become relatively poorer compared to native-born New Yorkers with the CEO poverty measure. The rise in the poverty rate for native-born New Yorkers under the CEO measure compared to the Census measure is a relatively modest 3.2 percentage points.[66] But persons born abroad experience a larger rise. The poverty rate climbs by 8.3 percentage points for persons who are foreign-born naturalized citizens and by 7.9 percentage points for non-citizens. The increase in the poverty rate for foreign-born naturalized citizens leaves them with a poverty rate that is essentially identical to that of the native-born population, 21.6 percent and 21.8 percent, respectively.
- **Among children by number of parents present:** Moving from the Census to CEO measures, there is a marginal increase (of 0.7 percentage points) in the poverty rate for children in two-parent families. The poverty rate for children living with only one parent, by contrast, drops by 2.8 percentage points. (Factors behind this are identified in section 3.4.) While the pattern of change narrows the difference in the poverty rate between these two groups of children, they remain enormous; the CEO poverty rate is 17.2 percent for children living with two parents compared with 41.6 percent for children in single-parent families.
- **Among working-age adults by educational attainment:** The rise in the poverty rates under the CEO measure for New Yorkers from 18 through 64 years of age is fairly uniform across educational attainment groups, ranging from 6.7 percentage points for those with a

[66] This group is comprised of persons who are U.S. citizens by birth. It includes those born in the continental United States as well as persons born in out-lying areas such as Puerto Rico and the Virgin Islands.

high school degree to 4.4 percentage points for those with at least a Bachelors degree. Thus the considerable differences in poverty rates by schooling seen under the Census Bureau measure do not change appreciably using the new measure. Those with a four-year degree or higher level of educational attainment have an 8.8 percent poverty rate with the CEO measure, while those without a high school degree now have a poverty rate of 35.5 percent.

- **Among working-age adults by work experience:** There is a similar rise in the poverty rate moving to the CEO measure for people who have worked 35 hours or more for at least 50 of the last 52 weeks (full-time, year round) and those who did not work at all. The increase for persons who had some paid employment but did not work steadily at full-time jobs was somewhat more pronounced, 7.4 percentage points. The pattern of change preserves the disparities in poverty rates by levels of work activity seen in the Census-based estimates. New Yorkers with full-time, year round work have a poverty rate of 8.5 percent under the CEO measure, while 41.3 percent of those who did not work were poor.

Table 3.3a

Poverty Rates for Persons

	CEO	OFFICIAL	Percentage Point Difference
Age Group			
Under 18	26.6	27.2	-0.6
18 thru 64	20.0	14.5	5.5
65 & up	32.0	18.1	13.9
Gender			
Males	21.0	16.2	4.8
Females	24.8	19.5	5.3
Race/Ethnicity			
Non-Hispanic White	16.3	10.0	6.3
Non-Hispanic Black	23.9	20.7	3.2
Non-Hispanic Asian	25.9	18.0	7.9
Hispanic, any Race	29.7	25.8	3.9
Non-Hispanic Other[1]	19.1	14.6	4.5
Nativity/Citizenship			
Citizen by Birth	21.8	18.6	3.2
Foreign Born, Naturalized Citizen	21.6	13.3	8.3
Not a Citizen	28.6	20.7	7.9
Children (under 18), by Presence of Parent			
Two Parents	17.2	16.5	0.7
One Parent	41.6	44.4	-2.8
Working Age Adults (18 thru 64),[2] by Educational Attainment			
Less than HS	35.5	29.2	6.3
HS Degree	23.3	16.6	6.7
Some College	15.8	10.7	5.1
Bachelors Degree or Higher	8.8	4.4	4.4
Working Age Adults (18 thru 64),[2] by Work Experience in Past 12 Months[3]			
Full-Time, Year Round	8.5	3.6	4.9
Some Work	23.2	15.8	7.4
No Work	41.3	36.1	5.2

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

[1] This category accounts for only 2.2% of the city population.

[2] Students are excluded from this group.

[3] See text for definition of work experience categories.

The next set of demographic dimensions characterizes people by the kind of family they are living in. First, living arrangements are considered: whether people are living in husband-wife/unmarried partner, single-female, or single-male headed families.[67] Within those categories, we separately examine those that do or do not include children under 18. We then look at poverty rates for persons who live in families differentiated by the family's level of work activity in the last year. (See Text Box 3.3 for an explanation of these categories).

The results echo some of the patterns seen earlier, such as the drop in the poverty rate under the CEO measure for people living in single-mother families. The CEO measure also shows higher poverty rates for families (regardless of type) that do not include minor children.

- **Persons by family composition:** Among husband-wife/unmarried partner, single-female, and single-male headed families, the rise in poverty rates is largest for persons living without children. For persons living in families with children the increases in poverty under the CEO approach are small (1.9 percent for husband-wife families), negligible (0.4 percentage points for families headed by a single male), or rates actually fall (1.1 percentage points for single-mother families). But even though their poverty rates are lower under the CEO measure than under the Census Bureau's, measure people living in single-mother families

Text box 3.3

Work Experience Categories

For individuals we consider anyone who has worked 50 or more weeks over the past 12 months and whose usual weekly hours are 35 or more to be a full-time, year round worker. Any person with some work, but less than either these numbers of weeks or hours per week is classified as some work. Persons with no weeks worked are classified as no work.

Family levels of engagement in paid employment reflect the number of hours worked by family members over the past 12 months. We multiply weeks worked by usual weekly hours for each family member who is at least 18 years of age and then total the number of hours for the family. Families with 3,500 or more hours of work per week are classified as having the equivalent of two full-time, year round workers. Families with less than 3,500, but more than 2,340 hours are considered to have the equivalent of one full-time, year round worker and one part-time worker. Families with 2,340 to at least 1,750 hours have the equivalent of one full-time year round worker. Families with at least one hour but less than 1,750 hours are classified as having less than a full-time year round worker. Families without any hours are classified as having no work.

[67] This study treats unmarried partner relationships identically to husband-wife relationships. Persons living in families that include an unmarried partner are grouped along with those living in husband-wife families in these tables. See Chapter Two for details of how CEO defined families.

continue to have the highest poverty rate (39.2 percent) among all family types.

- **Persons by family work experience:** The largest increase in the poverty rate under the CEO measure is for people living in families with no workers (8.4 percentage points).[68] Among families with some work activity, increases are largest for those with the equivalent of one full-time, year round worker (6.6 percentage points) and one full-time, year round and one part-time worker (6.2 percentage points).

Table 3.3b

Poverty Rates for Persons Living in Various Family Types

Family Type	CEO	OFFICIAL	Percentage Point Difference
Husband Wife/ Unmarried Partner[1]			
All	14.8	10.9	3.9
No Children	13.3	6.0	7.3
With Children	15.8	13.9	1.9
Single Female			
All	34.1	31.6	2.5
No Children	23.3	13.1	10.2
With Children	39.2	40.3	-1.1
Single Male			
All	18.4	12.9	5.5
No Children	17.3	7.8	9.5
With Children	19.9	19.5	0.4
Unrelated Individuals			
All	34.9	23.1	11.8
Living Alone	34.5	21.9	12.6
Living with Others	35.8	26.4	9.4
Work Experience of Family,[2] Equivalent of (using hours)			
Two Full-time, Year Round Workers	4.2	1.8	2.4
One Full-time, Year Round, One Part-time Worker	15.6	9.4	6.2
One Full-time, Year Round Worker	18.7	12.1	6.6
Less than One Full-time, Year Round Worker	47.1	43.3	3.8
No Work	61.0	52.6	8.4

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers

[1] In the CEO measure unmarried partners are treated as spouses. See text for explanation.

[2] See text for explanation of work experience categories.

[68] This increase may reflect the likelihood that families with no work tend to be composed of the elderly.

3.4 Differences in the Demographic Composition of the Poor

How does the CEO methodology change the composition of the poor? Groups that experience a larger than average rise in their poverty rates will generally become a larger share of the poor, while groups with a smaller than average rise will decline as a proportion of the population that is living in poverty.

Table 3.4 provides a look at the demographic composition of the population in poverty. The first column of numbers reports the proportion of all those who have a given demographic characteristic who are poor under the CEO measure. The second column does the same using the official measure. For comparative purposes the third column of numbers shows the distribution of the entire City population.

The pattern that emerges from the table is mixed. In some respects the CEO poverty measure creates a demographic profile of the poor that looks much closer to the demographic make-up of the City as a whole. This is true for the racial distribution of the poor, (as whites become a larger proportion of those living below the poverty line); the living arrangements of the poor, as persons living in female-headed families become a smaller share of the poor; and work activity, as people living in working families become a larger fraction of those in poverty.

But in other ways the population in poverty under the CEO measure diverges from the overall City population compared to those poor under the official measure. The elderly become a far greater share of the poor than their share of the City population, for example. This is also the case with respect to nativity and citizenship as the foreign-born become a disproportionately large share of the City's poor.

- **By age group:** Under the official poverty measure children are a disproportionately large share of the poor (36.4 percent of the poor against 24.0 percent of the population). This is markedly less true under the CEO methodology; their share of all the City's poor as a whole declines to 27.7 percent. At the other end of the age distribution, the elderly, whose share of the poor is nearly equal to their share of the population with the official measure (11.9 percent of the poor and 11.8 of the population) become a disproportionately large share of the poor under the CEO measure (rising to 16.4 percent of the poor).

- **By gender:** There is little change in the distribution of the poor by gender between the CEO and official distributions. Males rise slightly to 43.5 percent of the poor and females fall to 56.5 percent of the poor in the CEO distribution. Males are 47.6 percent and females are 52.4 percent of the City population.
- **By Race/Ethnicity:** The race/ethnic distribution of the poor is closer to that of the City as a whole under the CEO method. The share of the poor who are white grows from 19.4 percent to 24.6 percent, growing closer to the white share of the City population (34.7 percent). The black and Hispanic share of the poor falls, from 27.1 percent to 24.3 percent for the former, and from 40.0 percent to 35.9 percent for the latter. Both declines bring these groups' proportion of the poor closer to their proportion of the population (23.5 percent for blacks and 27.8 percent for Hispanics). The one place where the CEO measure creates more distance between the distribution of the poor and that of the whole City population is for Asians; under the official measure their share of the poor equals their share of the population (11.8 percent for both distributions). With the CEO measure Asians become slightly over-represented among the poor, as their share rises to 13.3 percent.
- **By Nativity/Citizenship:** A higher proportion of the City's poor are foreign-born under the CEO measure. The native-born share of the poor declines with the CEO measure, from 64.8 percent to 59.5 percent. Thus they move from being somewhat over-represented to under-represented relative to their share of the City population (62.7 percent). The proportion of the poor who are naturalized citizens rises with the CEO measure to 18.0 percent against 14.2 percent under the official measure. The shift makes their share of the poor closer to their share of the total population (19.2 percent). The over-representation of non-citizens among the poor increases with the CEO measure, growing to 22.6 percent from 20.9 percent with the official method. Their share of the population equals 18.1 percent.
- **By Family Type:** The most striking change within this demographic dimension is the falling share of the poor who live in female-headed families, a drop from 40.8 percent under the official measure to 34.4 percent under the CEO method. The share of the population for these persons is 23.2 percent. The other group for which the share of the poor increases is unrelated individuals. Their proportion of the poor rises from 22.4 percent under the official method to 26.3 percent under the CEO measure. This group accounts for 17.4 percent of the City population.
- **By Work Experience of the Family:** Families with the greatest engagement in employment become a larger share of the poor with the CEO poverty measure. Families with the

equivalent of two-full time, year round workers grow from 3.4 percent to 6.2 percent of the poor. The share of families with the equivalent of one full-time, year round worker and one part-time worker rises from 8.4 percent to 10.9 percent. And the share of families with the equivalent of one full-time, year round worker climbs from 15.8 percent to 18.9 percent. Shares fall for families with less than one full-time worker or no workers in the household.

Table 3.4

Distribution of Poor Persons

	Distribution of the Poor		Distribution of the Entire NYC Population
	CEO	OFFICIAL	
Age Group			
Under 18	27.7	36.4	24.0
18 thru 64	55.9	51.8	64.2
65 & up	16.4	11.9	11.8
Total	100.0	100.0	100.0
Gender			
Males	43.5	43.0	47.6
Females	56.5	57.0	52.4
Total	100.0	100.0	100.0
Race/Ethnicity			
Non-Hispanic White	24.6	19.4	34.7
Non-Hispanic Black	24.3	27.1	23.5
Non-Hispanic Asian	13.3	11.8	11.8
Hispanic, any Race	35.9	40.0	27.8
Non-Hispanic, Other	1.8	1.8	2.2
Total	100.0	100.0	100.0
Nativity/Citizenship			
Citizen by birth	59.5	64.8	62.7
Foreign born, naturalized citizen	18.0	14.2	19.2
Not a citizen	22.6	20.9	18.1
Total	100.0	100.0	100.0
Family Type			
Husband Wife/ Unmarried Partner[1]	34.5	32.5	53.5
Single Female	34.4	40.8	23.2
Single Male	4.8	4.3	6.0
Unrelated Individuals	26.3	22.4	17.4
Total	100.0	100.0	100.0
Work Experience of Family,[2] Equivalent of (using hours)			
To Full-time, Year Round Workers	6.2	3.4	33.7
One Full-time, Year Round, One Part-time Worker	10.9	8.4	16.1
One Full-time, Year Round Worker	18.9	15.8	23.3
Less Rhan One Full-time, Year Round Worker	25.2	29.6	12.3
No Work	38.8	42.8	14.6
Total	100.0	100.0	100.0

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note:

[1] In the CEO measure unmarried partners are treated as spouses. See text for explanation.

[2] See text for explanation of work experience categories.

WHY DOES THE CHANGE IN POVERTY RATES DIFFER ACROSS DEMOGRAPHIC GROUPS?

The comparisons between the CEO and official poverty rates detailed above combine two effects, a different threshold and a more inclusive definition of income. This section focuses on the effects of the new income definition on poverty rates. The tables in this section use the same six income concepts as those in Table 3.1, but detail the changes by demographic group. This provides some insight into the reasons why the change in the poverty rates vary for different groups of New Yorkers.

Tables 3.5 through 3.8 deliver several messages about how a more inclusive measure of family resources affects poverty rates. When the population is classified by age group (Table 3.5) the effect that medical out-of-pocket expenditures have on the poverty rate for elderly New Yorkers under the CEO measure can be seen. When family members are distinguished by whether their families include children (Table 3.6), notable differences arise in the effects of taxation, nutritional assistance and housing status. A look at families that include the equivalent of at least one full-time, year-around worker (Table 3.7) suggests that tax and in-kind benefit programs have a larger positive impact on working families led by a single parent than by two parents. The last table (Table 3.8) in this section is focused on the effect of CEO's housing adjustment on poverty rates; it reveals a dramatic decline in poverty rates for people living in public housing or who are receiving tenant-based subsidies when their incomes are adjusted to reflect their housing status.

Each of these tables reports the CEO-threshold-based poverty rates for the given income and demographic categories. Panel A lists, in descending order, an ever more inclusive concept of income. Each row of panel A adds an additional resource to the set of resources in the row above it. For example, Income Concept 3 adds the income value of near-cash nutritional subsidies to an income base of after-tax cash.

The rows in panel B give the percentage point difference between the successive change in the poverty rates of panel A. For example, the first row of panel B reports the difference between Income Concept 1 and Income Concept 2. This process continues until the next to last row which provides the percentage point change between the poverty rate of Income Concept 1 and Income Concept 6. To provide the reader context, the last row in the table gives each demographic group's share of the population.

Poverty rates by age group. Table 3.5 looks at how the different income concepts affect poverty by age group. What adjustments to income have driven the very different direction the poverty rate takes for children as opposed to the elderly? Under the first and most restrictive definition of disposable income (pre-tax cash), children have a higher poverty rate than the elderly (33.9 percent compared to 27.5 percent). But as income resources are added the poverty rate for children drops sharply, while the poverty rates for working-age and elderly adults decline modestly.[69] Because many tax credits are designed to help families with children, including the effect of taxation on income lowers the child poverty rate by 2.8 percentage points to 31.2 percent, but has a negligible effect on the poverty rates for both working-age and elderly adults (0.0 percentage points and 0.5 percentage points, respectively).

When nutritional assistance is added to after-tax income the poverty rate falls a further 2.6 percentage points for children, while it merely edges down for 18 through 64 year olds and New Yorkers 65 and older (by 1.0 percentage points and 0.8 percentage points respectively). The adjustment for housing expenses has an even more dramatic effect on child poverty, creating a further 7.3 percentage point decline, compared with a 2.2 percentage point drop for working-age New Yorkers and a negligible 0.9 percentage point decline for the elderly. Under the fourth income concept (after taxes, nutrition assistance, and the housing adjustment) the poverty rate for children is down to 21.2 percent, while it stands at 16.4 percent for 18 through 64 year olds and 25.3 percent for the elderly.

When resources are removed from income, first by subtracting work-related expenses, the poverty rate for children climbs by 2.9 percentage points, compared against a 1.7 percentage point rise for working-age adults. There is virtually no change for the elderly.[70] The next adjustment to income highlights one of the key reasons for the spike in the poverty rate for the elderly, medical out-of-pocket expenses. These drive the poverty rate for the elderly up by 6.4 percentage points, while the respective increases in poverty for children and working-age adults are only 2.4 percentage points and 1.9 percentage points.

[69] Readers should bear in mind that although the classification of people in this table is by their individual-level characteristics, their poverty rate is being determined by their family circumstances; the child poverty rate, for example, reflects the income and expenses of the family they live in.

[70] This pattern reflects the higher work-related expenses that families with children would be expected to incur because of childcare costs and the very low levels of work-related expenses for elderly population; relatively few of them are in families or are living with people who are in the workforce.

The combined effect of all these adjustments, reported in the next to last row of Panel B, lowers the poverty rate for children by 7.4 percentage points, leaves the poverty rate for working-age adults essentially unchanged (a 0.5 percentage point rise), and increases the poverty rate for the elderly by 4.5 percentage points, to 32.0 percent. Before the adjustments to pre-tax cash income, children had the highest poverty rate in the City (33.9 percent). Under the most inclusive income measure the elderly are now the poorest, with a poverty rate of 32.0 percent. The poverty rates using the final, most inclusive, income definition correspond to the CEO poverty rate reported in Table 3.3a.

Table 3.5

Changes in Poverty Rates, by Age Group

Income Concept	Under 18	18 thru 64	65 and Over
Panel A:			
1. Pre-tax Cash	33.9	19.5	27.5
2. After-tax Cash	31.2	19.5	27.0
3. After Tax, After Near-cash Nutritional Subsidies	28.5	18.6	26.2
4. After Tax, After Near-cash Nutritional Subsidies and Housing Adjustment	21.2	16.4	25.3
5. After Tax, After Nutritional Subsidies and Housing Adjustment, Minus Work-related Expenses	24.1	18.1	25.6
6. After Tax, After Nutrition and Housing Adjustment, Minus Work-related Expenses, Minus MOOP	26.6	20.0	32.0
Percentage Point Differences			
Panel B:			
Difference between Concept 2 and Concept 1	-2.8	0.0	-0.5
Difference between Concept 3 and Concept 2	-2.6	-1.0	-0.8
Difference between Concept 4 and Concept 3	-7.3	-2.2	-0.9
Difference between Concept 5 and Concept 4	2.9	1.7	0.3
Difference between Concept 6 and Concept 5	2.4	1.9	6.4
Difference between Concept 6 and Concept 1	-7.4	0.5	4.5
Group Share of the Population in the Table	24.0	64.2	11.8

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

Tables 3.6 and 3.7 classify people by the attributes of the families in which they live. Table 3.6 groups people into families that do, or do not, include children less than 18 years of age. Among those living with children, one- and two-parent families are examined separately. (Unrelated individuals are not represented in these tables).

Poverty rates by family type. As Table 3.4 reported, persons living in families with children have higher poverty rates than those who do not. And members of single-parent families are more likely to be poor than members of two-parent families. The poverty rates in Table 3.6 are consistent with this finding no matter what income definition is used. They are also consistent with the sharp decline in the child poverty rate that is evident in Table 3.5 as the concept of income widens.

The poverty rate for New Yorkers living in families without children rises from 13.7 percent to 16.1 percent between the first and last income measures. Tax programs do not lower the poverty rate for members of these families (it edges up by 0.7 percentage points) because refundable income tax programs are targeted to families with children.[71] Nutritional assistance programs also have a negligible effect (0.4 percentage points), perhaps because these families do not include children who could be receiving free or reduced-price school lunches. The housing adjustment does have some impact (creating a 1.7 percentage point decline). Including work-related expenses increase this group's poverty rate by a fairly modest 1.1 percentage points, as they have no childcare costs. Adding medical out-of-pocket expenses raise their poverty rate by 2.7 percentage points.

A sharply different pattern emerges for people living in families with children; poverty rates decline markedly as the income concept becomes more inclusive. In addition there are some interesting differences between one- and two-parent family members. Differences in the poverty rate with each change in the income measure are much larger for single-parent families than for two-parent families. For single-parent family members, the declines in poverty rates are by 3.5 percentage points, 4.1 percentage points, and 8.5 percentage points, respectively, as the effect of taxes, nutritional assistance, and the housing adjustment are sequentially added to resources. This compares with declines of 1.7 percentage points, 1.2 percentage points, and 5.1 percentage points for the same adjustments for two-parent families.

When work-related expenses are deducted from income, the rise in the poverty rate for single-parent families is considerably larger than that for two-parent families, 4.0 percentage points against 1.8 percentage points. This may be because these families lack a second parent who can provide childcare. Subtracting medical out-of-pocket spending from resources raises poverty rates for one- and two-parent family members by roughly similar amounts—2.8 percentage points and 2.0 percentage points, respectively. The effect of all these adjustments to disposable income is

[71] The Federal, State and City Earned Income Tax Credits are much more generous for families with children than they are for childless families and, of course, childless families can not make use of credits that are designed to offset the cost of raising children.

summarized in the next to last row in the table, which provides the percentage-point change in the poverty rate from the least to most inclusive definition of income. The poverty rate for people living in two-parent families drops by 4.2 percentage points, while the poverty rate for members of single-parent families tumbles by 9.2 percentage points.

Table 3.6

Changes in Poverty Rates, by Family Type

Income Concept	Without Children	With Children	
		Two-parent	Single-parent
Panel A:			
1. Pre-tax Cash	13.7	20.0	45.7
2. After-tax Cash	14.4	18.3	42.2
3. After Tax, After Near-cash Nutritional Subsidies	14.0	17.1	38.1
4. After Tax, After Near-cash Nutritional Subsidies and Housing Adjustment	12.3	11.9	29.6
5. After Tax, After Nutritional Subsidies and Housing Adjustment, Minus Work-related Expenses	13.4	13.8	33.6
6. After Tax, After Nutrition and Housing Adjustment, Minus Work-related Expenses, Minus MOOP	16.1	15.8	36.5
Percentage Point Differences			
Panel B:			
Difference between Concept 2 and Concept 1	0.7	-1.7	-3.5
Difference between Concept 3 and Concept 2	-0.4	-1.2	-4.1
Difference between Concept 4 and Concept 3	-1.7	-5.1	-8.5
Difference between Concept 5 and Concept 4	1.1	1.8	4.0
Difference between Concept 6 and Concept 5	2.7	2.0	2.8
Difference between Concept 6 and Concept 1	2.5	-4.2	-9.2
Group Share of the Population in the Table	37.4	40.4	22.3

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

Poverty rates for working families. Making work pay has been a policy priority since the early 1990s. Initiatives have included a rise in the Federal and New York State minimum wage; an expansion of the Federal Earned Income Tax Credit (EITC) and creation of New York State and City EITCs; and the provision of more funding for subsidized childcare. The focus of these programs has been on working families with children and Table 3.7 reflects that priority.

The table again distinguishes between family types. The difference between the previous table and this one is that Table 3.7 only includes families whose members collectively work at least 1,750 hours per year (equivalent to the minimum number worked by one full-time, year round worker). Given this level of work activity, it is unsurprising that poverty rates in Table 3.7 are uniformly lower than those in Table 3.6. Poverty rates are extremely low for members of families without children; even a modest salary can lift these typically small families out of poverty because the income threshold for them is so modest. (The CEO poverty threshold for a two-adult family is $17,081.)

Table 3.7

Changes in Poverty Rates by Types of Full-time, Year Round Working Families

Income Concept	Without Children	With Children	
		Two-parent	Single-parent
Panel A:			
1. Pre-tax Cash	4.4	15.2	23.9
2. After-tax Cash	5.4	13.4	20.0
3. After Tax, After Near-cash Nutritional Subsidies	5.3	12.3	16.0
4. After Tax, After Near-cash Nutritional and Housing Adjustment	4.5	8.2	9.8
5. After Tax, After Nutritional Subsidies and Housing, Minus Work-related Expenses	5.9	10.1	15.1
6. After Tax, After Nutrition and Housing, Minus Work-related Expenses, Minus MOOP	7.1	12.0	18.2
Percentage Point Differences			
Panel B:			
Difference between Concept 2 and Concept 1	1.0	-1.7	-3.9
Difference between Concept 3 and Concept 2	-0.1	-1.1	-4.0
Difference between Concept 4 and Concept 3	-0.8	-4.1	-6.2
Difference between Concept 5 and Concept 4	1.3	2.0	5.3
Difference between Concept 6 and Concept 5	1.3	1.9	3.1
Difference between Concept 6 and Concept 1	2.8	-3.1	-5.7
Group Share of the Population in the Table	35.4	46.9	17.7

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

Table 3.7 repeats a pattern evident in Table 3.6; members of families without children experience very small declines in poverty as income expands to include taxation, nutritional assistance and the housing adjustment. Indeed, taxation increases the poverty rate for this group, by 1.0 percentage points. The increases in poverty that result from deductions in income for this group are also relatively modest, because both work-related expenses (no childcare costs) and medical out-of-pocket costs are low.[72] Thus the poverty rate for people living in families without children climbs by 2.8 percentage points (from 4.4 percent to 7.1 percent) between the least and most inclusive income concept.

For people living in families with children, another pattern previously seen in Table 3.6 becomes evident. Again, declines in the poverty rate as the income concept expands are more dramatic for members of single-parent than two-parent families. The three adjustments that add income to resources result in a fall of 3.9 percentage points (taxation), 4.0 percentage points (nutritional assistance), and 6.2 percentage points (housing adjustment) for single-parent families. For two-parent families the corresponding declines are 1.7 percentage points, 1.1 percentage points, and 4.1 percentage points, respectively. The increases in poverty due to the reduction of resources because of childcare and medical out-of-pocket expenses are larger for single-parent families (5.3 percentage points and 3.1 percentage points, respectively) than for two-parent families (2.0 percentage points and 1.9 percentage points, respectively). The total reduction in poverty rates for single-parent families (5.7 percentage points) remains larger than that for two-parent families (3.1 percentage points), however.

Poverty rates by housing status. Table 3.8 reports the impact of the housing adjustment by housing status. The table classifies people as residing in one of six types of housing. Renters live in either public housing, private housing with a tenant-based subsidy, private housing that is rent-stabilized or -controlled, or private housing with a market-rate rent. Homeowners fall into two groups: those who own their housing free and clear and those who are paying off a mortgage.[73] The status adjustment CEO has developed applies to people living in housing whose cost to them is not set by the unregulated housing market. The housing types this applies to (noted in the table by a number one) are public housing, tenant-based subsidy, stabilized/controlled, and owned free and clear.

[72] Members of these families tend to be young adults.

[73] These categories are mutually exclusive. Thus anyone living in public housing is assigned to that category even if they are also receiving another form of subsidy. People with tenant-based subsidies often live in rent-controlled apartments, but all subsidy recipients who live in any type of private rental unit are assigned to the tenant-based subsidy group. All other renters are either living in rent stabilized/controlled or non-rent controlled apartments.

The most salient change in the poverty rate in this table is the one that occurs between income concepts 3 and 4, when the housing adjustment is added to income. The two groups that participate in means-tested housing assistance have very high poverty rates before the adjustment (56.6 percent for residents of public housing and 63.3 percent for recipients of tenant-based subsidies). The housing adjustment drops the poverty rate by 23.3 percentage points for the former group and by 26.9 percentage points for the latter. There is no change in the poverty rate for residents of rent-stabilized or -controlled units because the small number of persons lifted out of poverty by the adjustment is offset by an equal number who become poor because the adjustment lowers their disposable income. The final group whose poverty rate is adjusted for housing costs includes people who own their housing free and clear. The adjustment leaves their poverty rate virtually unchanged (a 0.2 percentage point decline).[74]

[74] This pattern reflects the wide variation in the generosity of the housing adjustment reported in Table 2.13, which reported a much larger adjustment for public housing residents and rent subsidy recipients than for others.

Table 3.8

Changes in Poverty Rates, by Housing Status

Income Concept	Renters				Owners	
	Public Housing[1]	Tenant-based subsidy[1]	Stabilized / Controlled[1]	Market Rate	Free and Clear[1]	With Mortgage
Panel A:						
1. Pre-tax Cash	61.8	68.0	29.3	21.3	13.2	6.8
2. After-tax Cash	59.3	66.3	28.4	20.7	13.2	6.5
3. After Tax, After Near-cash Nutritional Subsidies	56.6	63.3	26.4	19.2	12.8	6.2
4. After Tax, After Near-cash Nutritional Subsidies and Housing Adjustment	33.3	36.4	26.4	19.2	12.5	6.2
5. After Tax, After Nutritional Subsidies and Housing Adjustment, Minus Work-related Expenses	34.4	39.5	29.0	21.8	13.3	7.0
6. After Tax, After Nutrition and Housing Adjustment, Minus Work-related Expenses, Minus MOOP	37.9	42.8	32.4	24.9	16.1	8.1
Percentage Point Differences						
Panel B:						
Difference between Concept 2 and Concept 1	-2.5	-1.7	-0.9	-0.6	0.1	-0.3
Difference between Concept 3 and Concept 2	-2.7	-3.0	-2.0	-1.5	-0.5	-0.3
Difference between Concept 4 and Concept 3	-23.3	-26.9	0.0	N.A.	-0.2	N.A.
Difference between Concept 5 and Concept 4	1.0	3.1	2.5	2.6	0.7	0.8
Difference between Concept 6 and Concept 5	3.5	3.3	3.4	3.1	2.8	1.1
Difference between Concept 6 and Concept 1	-24.0	-25.3	3.1	3.6	2.9	1.2
Group Share of the Population in the Table	5.0	7.8	26.6	22.8	8.7	29.0

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers. N.A.- Not applicable.

[1] Indicates that housing adjustment has been applied.

WHY DO TAX CREDITS AND NUTRITIONAL PROGRAMS HAVE A RELATIVELY SMALL EFFECT ON THE CEO POVERTY RATE?

The chapter has noted in several places that under the CEO poverty thresholds the reduction in the poverty rate associated with the adjustment for housing costs is consistently larger than either the tax or nutritional assistance adjustments. We also found that the reductions in poverty rates were greater using the official poverty measure than the CEO method when the effect of taxation and nutritional programs to income were included (Recall Table 3.1).

This may be due to the way tax, nutritional, and housing programs are structured. The EITC, for example, rises quickly, reaching its peak within the first few thousand dollars of income earned. The credit remains at its highest level until income reaches the phase out point. The EITC does not phase out slowly, but drops off sharply, beginning at earnings of $16,810 for a married couple with children in 2006. A similar pattern exists for Federal tax credits designed to offset the costs of raising children; the Additional Child Tax Credit also begins to phase out over this income range. This credit does not increase beyond two children. The maximum credit possible is for $1,050 of care costs for one child and $2,100 for two or more children and begins to phase out when income reaches $15,000. The Tuition Credit has similar restrictions.[75] Because many State and City tax credits are structured similarly to, or as percentages of, the Federal credits (such as the EITC) they further contribute to this effect.

The CEO poverty thresholds place families who are below, but near, the poverty line in an income range where a number of tax credit programs are phasing out. The rapid phase out of these credits simultaneously creates very high tax rates on each dollar of additional income for workers and their families as their incomes approach the CEO poverty line. As Chapter Two illustrated, tax filers with incomes above $20,000 start to owe the government more in taxes than they receive from tax credits. Because the official thresholds are lower than the CEO thresholds ($20,444 compared to $26,138 for a two-adult, two-child family), families below, but near, the official thresholds are likely to be receiving more in the way of tax credits. And this may account for the larger effect tax programs have under the official measure.

Benefit levels and eligibility rules for the Food Stamp program mimics the effect of the tax system.

[75] There are two types of tuition credits, both of which shrink as income reaches $45,000 for single taxpayers and $90,000 for married taxpayers.

First, benefits decline as income levels rise. Second, families living above 130 percent of the Federal poverty guidelines ($26,000 for a family of four in 2006) are no longer eligible for the program. Means-tested housing assistance programs, by contrast, have a relatively high income ceiling, typically providing benefits to families with income of up to 50 percent of area median income, or $35,450 for a family of four in 2006. The City's rent stabilization and rent control programs are not means-tested and are not generally thought of as anti-poverty programs, but they are intended to protect the affordability of rental housing and may, therefore, have some effect on poverty.

3.5 Differences in Poverty Rates by Borough and Neighborhood

The CEO poverty measure affects poverty rates for different parts of the City as well as for different demographic groups. While all five boroughs have higher poverty rates under the CEO measure than they do under the Census measure, the change affects some more than others, as Table 3.9 shows.

Table 3.9

Poverty Rates, by Borough

Borough	CEO	OFFICIAL	Percentage Point Difference
Bronx	27.9	26.6	1.3
Brooklyn	27.0	21.5	5.5
Manhattan	20.4	16.8	3.6
Queens	19.6	11.7	7.8
Staten Island	13.1	8.4	4.8

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

Under the CEO poverty measure the Bronx remains the poorest borough, but its poverty rate increases only 1.3 percentage points relative to the Census measure, to a rate of 27.9 percent. Brooklyn's much larger increase of 5.5 percentage points leaves it only slightly less poor than the Bronx under the CEO measure, at a poverty rate of 27.0 percent. Manhattan has the third-highest poverty rate—20.4 percent—but its increase is just 3.6 percentage points from the Census measure.

Queens, in contrast, has the largest increase in poverty from the official to the CEO measure—7.8 percentage points—bringing its poverty rate to a level just below Manhattan's, at 19.6 percent. Staten Island remains the borough with the lowest poverty rate, 13.1 percent, 4.8 percentage points higher than under the Census measure. Some of the reasons for this pattern are discussed below.

Table 3.10

Distribution of Poor Persons, by Borough

Borough	CEO	OFFICIAL	Distribution of the Entire NYC Population
Bronx	19.8	24.2	16.3
Brooklyn	36.1	36.8	30.8
Manhattan	17.1	18.1	19.3
Queens	23.6	18.2	27.8
Staten Island	3.3	2.7	5.8
Total	100.0	100.0	100.0

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

The share of the poor who live in each borough also changes under the CEO measure. As shown in Table 3.10, Brooklyn continues to contain the largest share of the City's poor, at 36.1 percent. Queens, which experiences the largest increase in its poverty rate under the new measure, also contains an increased share of the City's poor—rising to 23.6 percent. The relatively small increase in the Bronx' poverty rates, however, means that its share of the City's poor actually falls by 4.4 percentage points under the CEO measure, leaving it with a 19.8 percent share of New Yorkers in poverty. Manhattan's 17.1 percent share of the City's poor under the CEO measure leaves it with a smaller proportion of the City's poor than any other borough except Staten Island, which has a 3.3 percent share of those who are poor under the CEO measure.

Table 3.11 explores the impacts of successively more inclusive definitions of income on each borough's poverty rate. As in tables 3.5 through 3.8, they are listed down the rows and poverty rates for each borough under each definition are shown across the columns in the first panel of the table. The second panel of numbers in the table provides percentage point differences in poverty rates between each resource measure.

Table 3.11

Change in Poverty Rates, by Borough

Income Concept	Borough				
Panel A	**Bronx**	**Brooklyn**	**Manhattan**	**Queens**	**Staten Is.**
1. Pre-tax Cash	34.9	27.8	21.6	17.1	12.2
2. After-tax Cash	33.5	27.5	21.3	16.2	11.4
3. After Tax, After Near-cash Nutritional Subsidies	31.2	25.8	20.2	15.5	10.6
4. After Tax, After Near-cash Nutritional Subsidies and Housing Adjustment	22.8	22.1	17.5	15.0	9.3
5. After Tax, After Nutritional Subsidies and Housing Adjustment, Minus Work-related Expenses	25.1	24.1	18.5	16.9	10.8
6. After Tax, After Nutrition and Housing Adjustment, Minus Work-related Expenses, Minus MOOP	27.9	27.0	20.4	19.6	13.1
Percentage Point Differences					
Panel B					
Difference between Concept 2 and Concept 1	-1.4	-0.4	-0.3	-0.9	-0.9
Difference between Concept 3 and Concept 2	-2.2	-1.7	-1.1	-0.7	-0.8
Difference between Concept 4 and Concept 3	-8.4	-3.7	-2.7	-0.5	-1.3
Difference between Concept 5 and Concept 4	2.2	2.1	1.0	1.9	1.6
Difference between Concept 6 and Concept 5	2.8	2.9	1.9	2.7	2.3
Difference between Concept 6 and Concept 1	-7.0	-0.8	-1.3	2.5	0.9
Group Share of the Population in the Table	16.3	30.8	19.3	27.8	5.8

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

Note: The differences are taken from unrounded numbers.

Of all the changes, the addition of the housing adjustment to income has the largest impact on poverty rates within each borough, but the largest decline, of 8.4 percentage points, occurs in the Bronx. This reflects the high proportion of the borough's population that is living in public housing or is receiving a tenant-based housing subsidy; they comprise 26.5 percent of Bronx residents, 12 percentage points more than the next highest borough, Manhattan, which has 14.5 percent of its residents in public or subsidized housing.[76]

[76] The HVS indicates that the proportion of residents who are either living in public housing or receiving tenant-based subsidies: Bronx-26.5 percent, Manhattan-14.5 percent, Brooklyn-13.6 percent, Staten Island – 4.6 percent and Queens-4.5 percent.

DIFFERENCES IN THE SPATIAL CONCENTRATION OF THE POOR

One of the most interesting differences between the spatial distribution of the poor under the CEO measure as compared with the Census measure is that poverty appears to be less geographically concentrated under the CEO measure. This is consistent with the finding that, in many demographic respects, the poor are more like the entire population of the City under the CEO measure. This lessens the geographic concentration of poverty throughout the city.

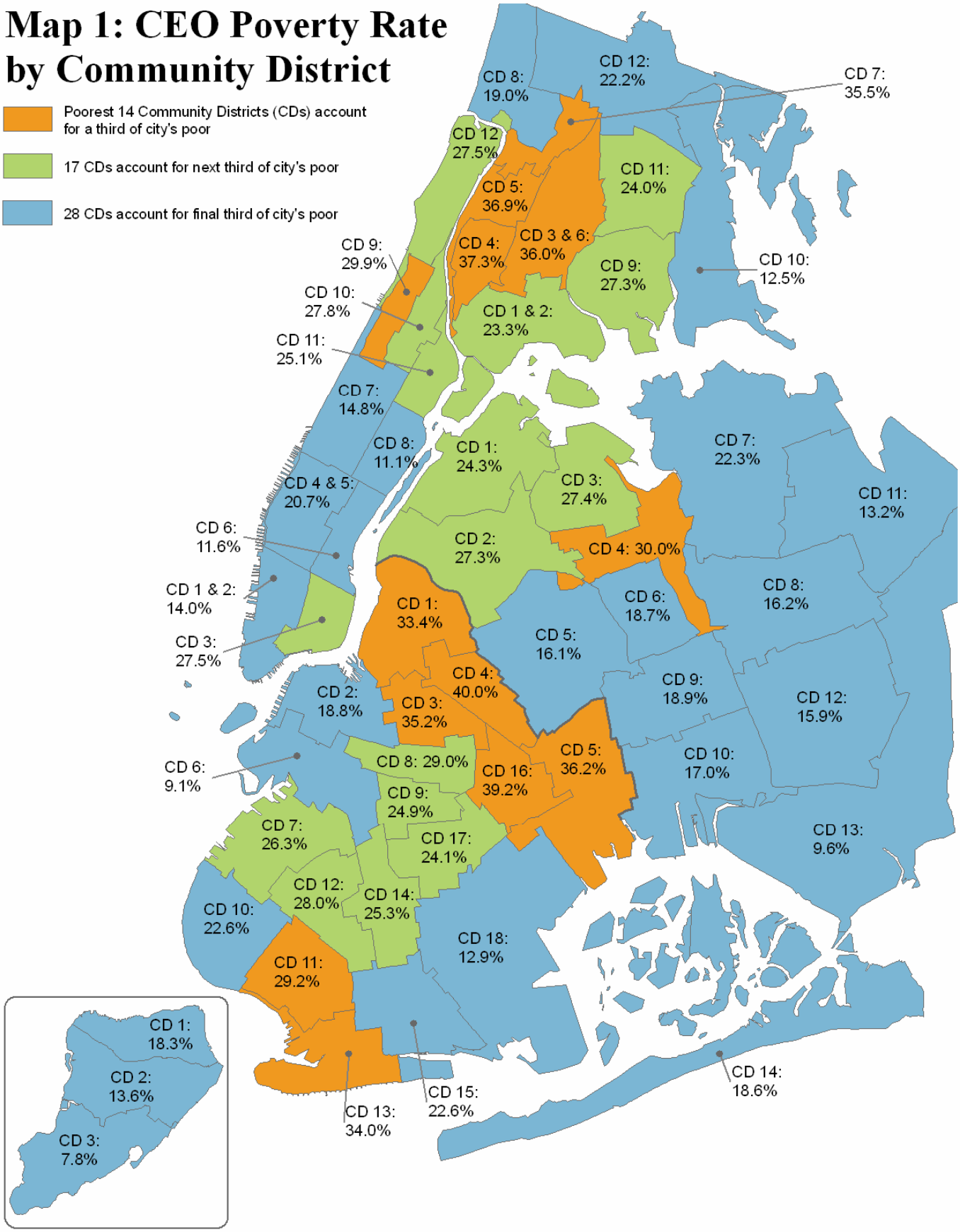
The maps below illustrate the differences between poverty rates at the Community District (CD) level when using the CEO poverty measure versus the official Census Bureau poverty measure. They also reveal the distribution of the City's poor population among CDs under both measures.

Poverty Rates by Community District

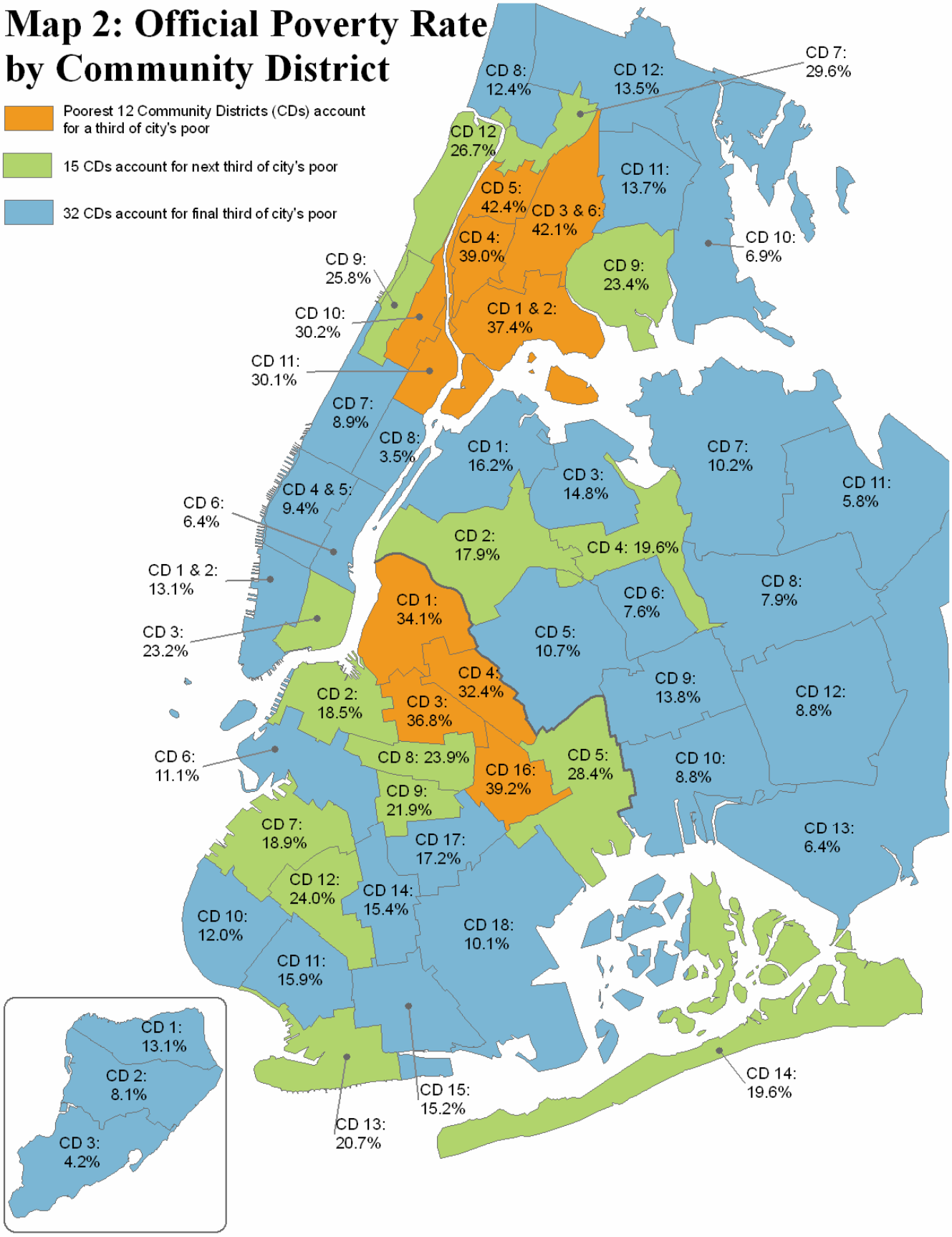
Map 1 and Map 2 illustrate poverty rates by CD under the CEO and official poverty measures. [77] Each map also illustrates the distribution of the City's poor under each poverty measure. Orange indicates the third of the City's poor population represented by the poorest CDs. Green represents the next third of poor residents, and light blue represents the final third of the City's poor.

[77] This analysis was conducted using the American Community Survey's public use microdata areas (PUMA). PUMA's correspond fairly well to New York City Community Districts (CDs). There are 55 PUMAs and 59 Community Districts; four PUMAs contain two CDs.

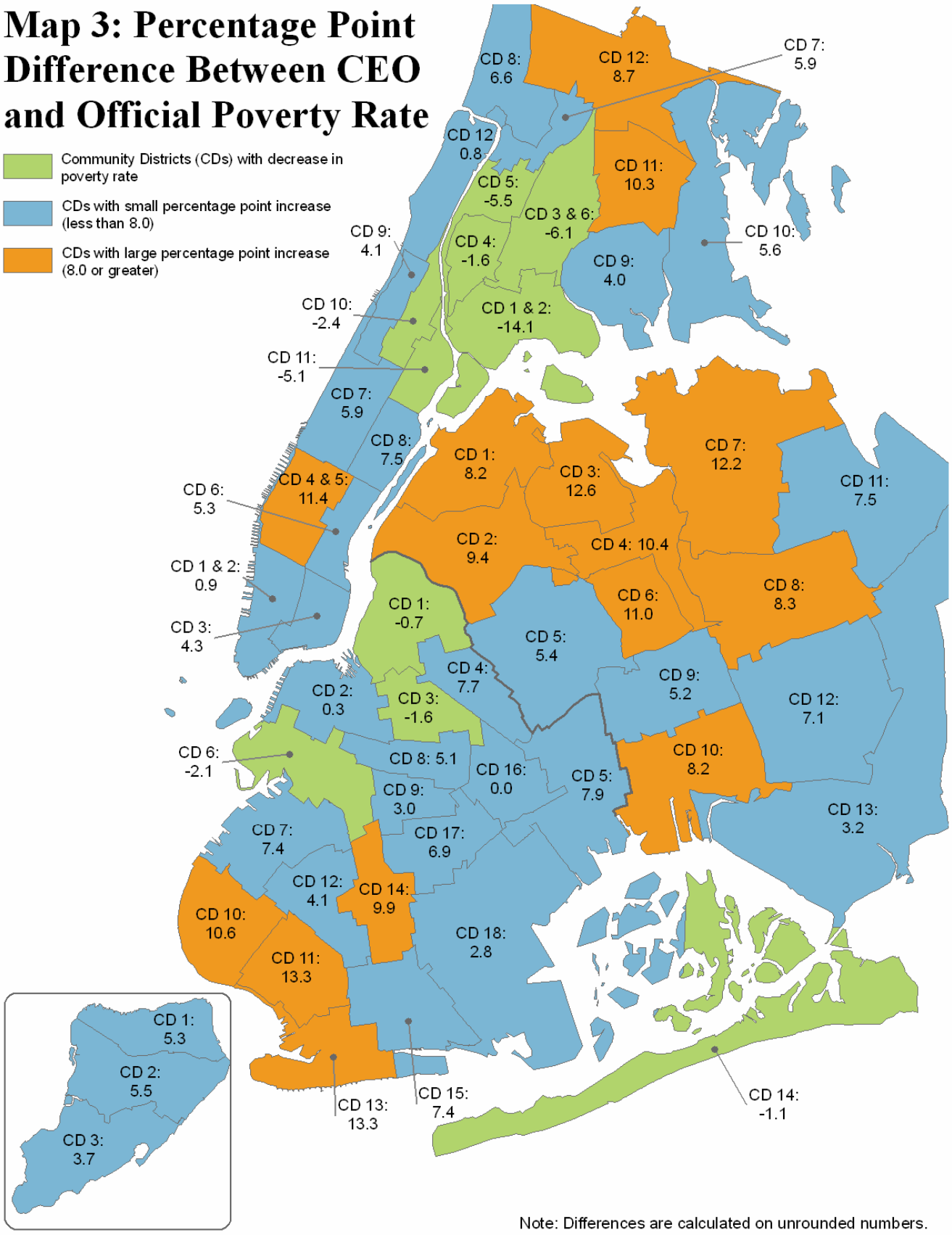
Map 1: CEO Poverty Rate by Community District



Map 2: Official Poverty Rate by Community District



Map 3: Percentage Point Difference Between CEO and Official Poverty Rate



Note: Differences are calculated on unrounded numbers.

The greatest decreases in poverty rates under the CEO measure occur in South Bronx CDs 1 through 6 and Manhattan CDs 10 and 11 (Central and East Harlem). The Brooklyn CDs 1, 3 and 6, (Williamsburg/Greenpoint, Bedford-Stuyvesant and Park Slope/Carroll Gardens/Red Hook, respectively), and Queens CD 14 (Rockaway), are the only other communities that experience a net decline in poverty rate under the CEO measure. All of these communities have a high proportion of people living in public housing or receiving tenant-based subsidies, which has a relatively large effect on poverty rates under the CEO measure. Taken together, the communities that experience a decrease in their poverty rate as measured by CEO have 32.8 percent of their residents living in public housing or receiving tenant-based subsidies, versus 12.8 percent for New York City as a whole.

On the other end of the spectrum, those communities that experience an 8.0 or greater percentage point increase in poverty rates under the CEO measure are represented by orange. As evident on the map, the most substantial increases in poverty rates occur in the CDs of northwest Queens. Queens CDs 1, 2, 3, 4, 6, 7 and 8, including the neighborhoods of Long Island City, Woodside, Jackson Heights, Corona and Flushing, all undergo large increases. These communities have a high percentage of foreign-born residents. In fact, over 56 percent of the residents of these seven northwest Queens CDs are immigrants, compared to a city wide rate of 37 percent. As indicated in Table 3.3a, the foreign-born experience a relatively large increase in poverty rate under the CEO measure.

The role of nativity poverty is not limited to Queens. The Brooklyn CDs 10, 11, 13 and 14, representing the southern Brooklyn neighborhoods of Bay Ridge/Dyker Heights, Bensonhurst, Coney Island/Sea Gate/Brighton Beach and Flatbush/Ditmas Park, collectively have a 47.8 percent immigrant population. These four CDs also have a significant share of elderly residents, which contributes to the increase in their poverty rates as well. Persons 65 and older comprise 17.2 percent of the population in these four CDs, well over the elderly's share of the entire New York City population, 11.8 percent.

While the distribution of the elderly and immigrant populations are associated with much of the variation in poverty rates, they do not explain all of it. For example, Manhattan CDs 4 and 5[78], representing Chelsea and Midtown, and Bronx CDs 11 and 12, representing Morris Park/Pelham Parkway and Williamsbridge/Baychester, also experience large increases in poverty rates when

[78] PUMA 3807 contains both Manhattan Community District 4 and 5.

using the CEO measure. But Manhattan CDs 4 and 5 do not have an especially large population of elderly, 12.3 percent, or immigrants, 23.2 percent, relative to the City as a whole. One possible explanation for the increase in poverty for these two CDs is that they have the City's lowest proportion of children, 7.9 percent. Under the CEO measure, families without children receive little in the way of upward income adjustments. Therefore they will have higher rates of poverty compared to other groups who are more likely to receive tax credits, housing subsidies, and other additions to income.

In sum, the variations in the geographic distribution of the poor mirror the changes seen when examining the variations across different demographic groups. The CDs that experience large percentage point decreases in poverty rates under the CEO measure have high concentrations of people living in public housing or receiving tenant-based subsidies. The CDs that have large increases in poverty rates generally have large concentrations of immigrant or elderly populations, or sometimes both. Districts with large young-adult populations and few children also see increases in their poverty rates under the CEO measure. While these details can explain a significant number of the changes in rates within Community Districts, there may be other factors that invite further exploration.

CONCLUSION

The first paragraph of this chapter posed two questions: why is the new poverty rate higher? And what does the new poverty methodology reveal that we did not see before? The answer to the first question lies in the balance between the opposing effects of raising the poverty threshold and expanding the definition of the resources that are counted as helping families to meet their basic needs. The CEO poverty threshold for a two adult, two child family stands at $26,138, while the Census Bureau's threshold for this family is $20,444. If this were the only change made to the poverty measure, the poverty rate would have to rise.

But following the recommendations of the National Academy of Sciences, the definition of resources used in the CEO measure expands to include the positive effects that tax credits, nutritional assistance, and housing programs have on the disposable incomes of low-income families. Even when income is further adjusted to include work-related expenses and medical out-of-pocket spending, those changes in measured resources would lower the poverty rate. The net result of both the higher threshold and more inclusive definition of income is a higher poverty rate

under the CEO measure than with the Census methodology, indicating that the effect of a more realistic measure of income adequacy outweighs the effect of counting more resources.

The higher poverty rate cuts across many demographic groups and neighborhoods, but the rise is not universal. People living in single-parent families are less poor under the CEO measure (and comprise a smaller proportion of the population in poverty) than with the Census Bureau method. The poverty rate is also lower in a number of neighborhoods often regarded as particularly poor, such as those in the South Bronx. For some groups within the City the rise in the poverty rate is especially pronounced, such as that for the elderly.

Many of the sources of this varying pattern were revealed as the chapter unpacked the elements of the resource measure. The unusually large increase in the poverty rate for the elderly appears to be driven by medical out-of-pocket spending. The lower poverty rate for children in single-parent families, in contrast, seems to lie in the relatively large impact that tax, nutrition, and housing programs have on the families they live in. Lower poverty rates in some neighborhoods are associated with the concentration of public housing and participation in housing subsidy programs. The relatively small impact that tax programs have on many low-income families is an outgrowth of their targeting (to families with children) and the way these programs are structured. For example, families below, but near, the CEO poverty threshold have incomes that put them in the phase out ranges for the Federal, State, and City Earned Income Tax Credits.

These insights are only an initial assessment of the data. But they make clear how an improved measure of poverty highlights policy successes and continuing needs in ways the current measure does not.

OVERVIEW OF APPENDICES

This report contains five Appendices that give further details on specific aspects of the CEO poverty measure. The methods used to estimate the thresholds are detailed in Appendix A. Appendix B discusses the tax model and the estimates of taxes and tax credits that it produces. Appendix C describes the imputation of housing status and housing costs using data from the New York City Housing and Vacancy Survey (HVS). Appendix D focuses on the estimation of work-related expenses, childcare and transportation. Finally, Appendix E discusses the estimation of out-of-pocket medical expenses.[79] Before turning to those Appendices, however, this overview provides a brief summary of the rationale for some of the broader measurement choices made in the development of the CEO poverty measure.

Over the past two decades the official poverty measure used by the Census Bureau has been widely criticized as outmoded and misleading. One response to this criticism was the establishment of a panel by the National Academy of Sciences to assess the measure and to recommend options for improving it. The Panel produced a set of recommendations leading to the development of a new, more realistic measure of poverty.

The NAS poverty measure, like the official Census Bureau measure, determines poverty status based on the needs and resources of a family. Thus, if the family is poor, then each member is also counted as poor. Whether a family is poor is determined by comparing its disposable income to an income threshold for families of its size and composition. If the family's income and other resources are above the income-adequacy threshold the family is considered to have at least marginally adequate resources; if they have less than the threshold they are considered poor.

Under both the Census measure and the NAS measure, then, three main elements are required to measure poverty: (1) a definition of what constitutes a "family" or other unit whose needs and resources can be measured; (2) a standard of need (or threshold) for each family type and size; and, (3) a measure of each family's available resources to compare to the threshold.

[79] CEO will provide the program code used to create the imputed estimates of the resources measures not reported in the American Community Survey upon request.

The first of these issues is addressed in Appendix A. The discussion in this Overview focuses on why CEO chose to account for certain family needs as deductions from resources rather than items in the threshold. A major criterion in the NAS Panel's deliberations was that the thresholds and the resource measure should be defined consistently with each other; the elements on both sides of the ledger must match. The Figure below lists the types of needs that are used to set thresholds and types of income that compose the measure of resources. The chart illustrates that "income" includes any resource that a family can use to meet the needs listed in the threshold.

NATIONAL ACADEMY OF SCIENCES' POVERTY MEASURE	
Thresholds	**Resources**
Based on annual out-of-pocket expenditures for these necessities: – Food – Clothing – Shelter – Utilities – Plus "a little more" for miscellaneous needs	Based on "disposable income," the annual flow of resources available to a family to obtain the items in threshold: – Pre-tax cash income – Plus net taxes – Plus subsidies for food and shelter – Minus work-related expenses – Minus medical out-of-pocket spending

Intuitively, it is appealing to think of the poverty threshold as the total amount a given family needs and the resource measure as the total income that is available to meet those needs. For the most part needs and resources are allocated in this way in CEO's application of the NAS methodology. However, some needs are easier to measure than others. Food, for example, is a fairly concrete need and the minimum amount that a family needs to spend on food will generally vary in a predictable way with the size and composition of the family. Clothing needs will tend to vary similarly.

But other needs vary with characteristics of the family that are either harder to observe or do not vary in a way that is easily captured by differences in the number of adults and children in them. The most obvious example of such a need is medical care, which varies not only with family size and composition, but also with the health status and health insurance coverage of family members. Childcare spending also varies for reasons that can't easily be observed in existing data, such as the availability of other family members (if they are not living in the same household), friends, or neighbors to help care for a child. What families need to spend for housing can not be predicted

based on family size and composition alone, especially in New York City, where there are a wide range of different subsidies and special rental statuses.

In principle, if adequate information were available, it might be possible to account for these needs either by putting them in the threshold or deducting them from resources, with equivalent results. However, because there is a wide degree of variation in the amounts families actually need to spend on medical care, childcare and housing, many different thresholds would be required. Families with or without health insurance, with or without childcare needs, and with or without housing assistance, would all have different thresholds, even if they included the same number of people. Establishing thresholds to account for all the possible combinations would soon become unworkable.

An unwieldy number of thresholds is not the only problem in estimating what families might need for these items. Sufficient information is not available and the attempt to create thresholds to reflect this variation in needs would often lead to inaccuracies. This problem may be clearest in the case of healthcare. The distribution of healthcare spending is dramatically skewed by the relatively small number of families with very high medical costs. Estimates of spending needs that used means, even among families that are similar in a number of ways that are relevant to medical needs, would therefore, overestimate what most families need. Estimates that relied on medians would fail to capture the heavy burden that medical out-of-pocket spending has on those families with high healthcare costs. This line of reasoning convinced the NAS that subtracting estimates of actual childcare costs and healthcare expenditures from disposable income was a better approach.[80]

Housing expenses represent something of a special case. In measuring housing needs CEO used an approach that is similar to that used for childcare and medical expenses—relying on information on what households actually spent out-of-pocket. Unlike childcare and medical care, however, housing costs are explicitly included in the poverty threshold. The variation in spending on housing of similar size and quality in New York City is very high—roughly two-thirds of the City's population lives in rental units and many renters receive a variety of different subsidies and other benefits. Those who receive rental subsidies or who live in public or rent-controlled or stabilized housing pay rents that are well below market rates, which affects the amount they need to secure adequate housing. Creating thresholds to account for these differences in housing status was impractical given the available data and given the large variety of possible adjustments.

[80] Constance F. Citro and Robert T. Michael, eds. "National Research Council, Panel on Poverty and Family Assistance." In Measuring Poverty: A New Approach. (Washington, D.C.: National Academy Press, 1995), 223-225.

Instead, CEO assumed that, in the instances where families are not paying market rates for their shelter, what they do pay for housing represented at least a lower-bound estimate of their needs. For these families actual out-of-pocket spending on housing was subtracted from the amount allowed for housing in the threshold; any resources remaining were assumed to be available to meet other needs. This approach, as described in Chapter Two, is consistent with the methods used to estimate childcare and medical needs, as detailed in Appendices D and E.

While putting these needs on the threshold side of the poverty measure is impractical, deducting spending on these needs from resources may also be problematic. Some families are not be able to spend as much as they actually need on important necessities—they may postpone medical care, for example, because they cannot pay for it or use inferior forms of childcare because more affordable options are not available. In this respect, out-of-pocket expenditures may underestimate actual needs. This has led some researchers to create estimates for needed health and childcare expenses in the poverty thresholds. Nonetheless, CEO decided to follow the NAS recommendation to deduct these items from resources because, in addition to the practical difficulty of computing a vast array of new thresholds, we did not feel confident that any of the existing methods for estimating these spending needs would result in less error than using actual spending patterns. Throughout this study, therefore, needs that vary significantly across families in hard-to-predict ways, such as housing, childcare and medical expenses have consistently been placed on the resource side rather than on the threshold side of the measure.

APPENDIX A

TECHNICAL ISSUES AFFECTING THE UNIT OF ANALYSIS AND THE POVERTY THRESHOLD

This Appendix covers issues related to the unit of analysis and the specification of the poverty thresholds. It also gives additional detail on the background and rationale for the specific choices made in setting the poverty thresholds.

THE UNIT OF ANALYSIS

Constructing the Family Units Used by CEO: Identifying Core Family Units

Two different types of units have been used for the analyses in this report: the expanded family unit, which is used to assess each family's poverty status and the tax unit, which is used to allocate tax payments and credits. CEO created these units by applying a concept known as the Minimal Housing Unit (MHU) to identify the core families and subfamilies within each household. The MHU is defined as the smallest identifiable family unit within the household, based on relationships such as marriage and parentage of minor children. This method reconfigures family relationships within households to identify families, unrelated subfamilies and unrelated individuals, and to construct tax filing units.

The first step in creating new units for this study was the identification of the MHUs within each household. Married couples, single adults and parents with minor children are counted as separate MHUs. Relationships are identified by inference based on relationship to the household head. For example, if one MHU head is identified as the "child" of the household head, and another is identified as the "sibling" of the head, we would code the first person as the niece or nephew of the second person. The methodology used in this study is an adaptation of the (2002) work that has been done by Jeffrey Passel.[81] This methodology proves to be especially helpful in identifying unrelated subfamilies in the ACS.

The relationship data in the ACS are the basis for creating new family units or MHUs.

[81] Jeffrey Passel. "Editing Family Data in Census 2000 Public-Use Microdata Samples: Creating Minimal Household Units (MHUs)." (August 23, 2002). The specific programs used in this study are available from CEO.

Data from the ACS are collected for all persons in the housing unit and are organized by way of a household roster - a listing of all current residents of the sample address.[82] One person is identified by the Census Bureau as the household reference person. Usually this is the person in whose name the home is owned or rented and is listed as the first person on the questionnaire. The ACS questionnaire asks for each household member's relationship to this reference person. Categories include both relatives (reference person, husband/wife, son/daughter, brother/sister, father/mother, grandchild, in-law, other relative) and non-relatives (roomer/boarder, housemate/roommate, unmarried partner, foster child, other non-relative).

Constructing the CEO "Poverty Unit"

In creating the family units used for poverty analysis (referred to here as the "poverty unit") it is necessary to think about how people within the same household share resources. The current method for determining poverty assumes that everyone related (by blood, marriage, or adoption) to the reference person is in a family that lives together and shares resources. (For Census purposes, each household can contain only one main family, although it may also contain subfamilies that don't include the reference person.) Thus, poverty status is determined for this family unit as a whole, and all of the people in the family are assigned the same poverty status. Everyone in the household that is not part of the main family unit is considered to be an unrelated individual or part of an unrelated subfamily (i.e., not related to the householder).

To form CEO's poverty units, this study organized people based on ACS data on their relationships to other members of the household. The *expanded family unit* is the largest poverty unit and includes the Census-defined extended or traditional family, in addition to unmarried partners and their children. The second type of poverty unit is *unrelated subfamilies*. People in this category are related to each other, but they are not related to the householder and his or her family; it is assumed that they do not share income and expenses with the householder's family. They are therefore treated as separate family units.

Some extra assumptions and inferences were necessary to create unrelated subfamilies because they are not identified in the ACS. For example, an unrelated roommate of the household head and her daughter are identified only as "non-relatives" of the reference person—that is, unrelated

[82] The ACS questionnaire instructs respondents to list persons who have lived in the household for at least two months or anyone else in the household who does not have another usual place of residence.

individuals. To create separate family units for such groups, assumptions were made to link this mother and child by using the variables for relationship, age, sex, marital status and position on the household roster. These new families reflect actual resource-sharing patterns better than treating each of these subfamily members as if they were separate unrelated individuals.

Unrelated individuals, the last type of poverty unit, include individuals living alone or individuals living with other unrelated people.

Household versus family as the unit of analysis: is family the right unit?

The rationale for a family-based poverty unit rests on a view that income- and resource-sharing occurs within families. People who are not living with other family members are currently treated as if they were one-person families. There is no issue of within-household resource sharing for most of these individuals, since the majority (72 percent) live by themselves.

But for those people who do live with other unrelated people, the definition of poverty unit becomes more complex because it is likely that many do so in order to share living expenses. These individuals may be living with families as boarders or with other non-relatives as roommates. The degree to which they are pooling income and living costs is likely to be highly variable. Some non-relatives may be sharing no more than housing costs, for example, but others may be also sharing expenses for food. A further complication is that non-family relationships are probably less stable over time than family ones; during the course of a year (the time period over which poverty is determined) living arrangements among non-relatives can change dramatically. The ACS data on household composition, however, only reflect living arrangements at the time of the survey.

Thus, there is no simple generalization about resource- and cost-sharing that could be applied to people who share housing with other unrelated people. Treating them as single person units is clearly an extreme assumption. A perhaps equally extreme alternative would be to measure poverty at a household level, in effect assuming that non-relatives share expenses and income to the same degree as family members.

This study treats all unrelated individuals as single-persons units, as does the Census Bureau. The NAS argument that resource sharing and the stability of living arrangements are greater among

family members than non-relatives supports this approach.[83] However, this is not a settled issue. For purposes of comparison, poverty rates at the household level are shown in Table A.1, which provides a comparison of the CEO family unit and *household-level* poverty rates by household type.

Table A.1

Poverty Rates with Alternative Poverty Units, by Household Type

Household Composition	CEO Poverty Unit Rate	Household Unit Poverty Rate	Percentage Point Difference	Household Type Share of Population
Family Members Only	20.4	20.4	0.0	79.5
Family Household w/non-relatives	28.6	13.0	15.6	4.4
Non-family Household w/non-relatives	33.1	12.5	20.5	3.5
Unrelated Person Living Alone	34.5	34.5	0.0	12.5
City-wide Poverty Rate	23.0	21.6	1.4	100.0

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from 2001 and 2004 Survey of Income and Program Participation, 2005 Medical Expenditures Panel Survey and 2005 New York City Housing and Vacancy Survey.

For the more than 90 percent of persons living in families or alone, moving from a household-level to a family (or poverty unit) level unit of analysis has no effect, because these households are composed only of family members or are single-person households. In both of these cases the family unit and the household are the same. For the two household types that include non-relatives, however, poverty rates are considerably higher under the CEO approach. In family households that include non-family members and in non-family households, the CEO family unit poverty rates are 15.6 percentage points and 20.5 percentage points higher, respectively. This is to be expected—counting people in more-inclusive units generally lowers the poverty rate, because it creates economies of scale that lower their total spending needs. However, because people living in these household types are a relatively small proportion of the New York City population, the impact of counting poverty rates at the household level on the city-wide poverty rate remains small. Overall, this change would decrease New York poverty rates by 1.4 percentage points.

[83] Constance F. Citro and Robert T. Michael, eds. "National Research Council, Panel on Poverty and Family Assistance." In Measuring Poverty: A New Approach. (Washington, D.C.: National Academy Press, 1995), 305.

Creating the Tax Unit

An important aspect of the CEO poverty measure is its use of "after tax" income. However, the ACS does not collect data on taxes. Thus, a tax simulation model is necessary to allocate tax liabilities and offsetting credits. The tax model, which is outlined in detail in Appendix B, is dependent on the formation of tax units, because households may include multiple tax filers, and the amount of tax each will pay depends upon their specific tax-filing statuses. Anyone who files a 1040 IRS tax form (or any couple for married filers) and their dependents make up a tax unit.

To form the tax unit it is necessary to identify filers, their filing status, and the number of dependents. A dependent is defined as any person who is less than 19 years of age, or 19-24 years old and enrolled in school, or who has personal income of less than $3,300.

A filer is anyone who is either 19 years of age or older, married, or has a dependent. There can be more than one filer per unit. We made a decision to create the largest possible pool of filers—no income cutoffs were used to determine filing eligibility. For example, even though some people have minimal incomes and therefore are not required to file a tax return, they can still be eligible for tax credits such as the EITC and therefore may benefit by being a filer. Making the filing population as broad as possible gives the tax simulation model the ability to assign taxes using different scenarios and assumptions.

Having gone through the process of creating MHUs simplifies the creation of tax units. As described above, an MHU generally defines a tax unit. For example, married couples with or without children, or parents with children who have already been identified as part of the same family or subfamily, form their own MHU, as do single individuals. Four filing statuses have been modeled for this study: 1) married, filing jointly; 2) head of household (single with at least one dependent); 3) married, filing separately;[84] and 4) single.

POVERTY THRESHOLDS

The poverty thresholds used are crucial to the determination of poverty rates. The methods used by CEO to construct the thresholds are discussed in detail in Chapter Two. This Appendix gives further background on the development of the CEO thresholds, and explores three further issues: (1) How

[84] Married filing separately/single was defined to be anyone living in a "non-family household" with marital status "married, spouse absent". See Appendix B for further explanation of these tax filing status categories.

(and why) does CEO's adjustments for differences in family size differ from the Census Bureau's; (2) How do CEO's thresholds compare with various other measures of income adequacy; and (3) How should the poverty thresholds be adjusted over time?

Alternative methods of adjusting thresholds for differences in family size

As Chapter Two discusses, this study uses a family-size adjustment developed by David Betson.[85] Why not use the family size adjustment implicit in the official Census poverty thresholds?

The Census poverty thresholds are the outgrowth of a set of thresholds developed for the Social Security Administration in the 1960s. Those thresholds were computed by multiplying the Economy Food Plan by three, because the typical family then spent about one-third of its budget on food. The Economy Food Plan amounts varied by family characteristics, and so did the resulting poverty thresholds. For example, because young men consume more calories than elderly women, the Economy Food Plan for families containing working-age men was considerably higher than the plan for families consisting of older women. Since the thresholds were simply three times the food plan, the thresholds for younger men were also correspondingly higher. No allowance was made for the fact that older people might face other, non-nutrition-related needs that young men did not.

The original thresholds were very detailed, varying according to the estimated caloric needs of each member of the family. In 1969, when the thresholds were adopted as the official measure of poverty, they were somewhat simplified, so that they no longer varied by the detailed ages and genders of the specific family, but only by broader characteristics such as number of children, number of adults, whether the head was elderly, and so forth.

The method used to construct the simplified scales, however, was to take the average adjustment in each family-size category as it appeared in 1969, and then apply that adjustment for families of that size for all subsequent years, regardless of the actual composition of the family-size category in each year. This gives a very odd set of adjustments, where an additional family member adds an irregular amount to the threshold as family size grows (see Table A.2). The Betson scales used in this study, shown in Table A.3, give a similar overall adjustment to needs as family size grows, but unlike the Census scales they do so in a regular and predictable way that takes into account factors other than

[85] Betson, David. 1996. *Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement.* University of Notre Dame. March. Available at: http://aspe.os.dhhs.gov/poverty/papers/escale.pdf.

calories needed to survive. Further, unlike the Census adjustments, they do not assume that households with elderly heads need less than similar households with heads under 65.

Table A.2

Factors Used by Census Bureau to Adjust Reference Family Thresholds for Units of Other Sizes and Types

Number of Persons	Number of Children					
	None	One	Two	Three	Four	Five
One Person (Unrelated Individual)						
Under 65 Years	0.51					
65 Years and Over	0.47					
Two Persons						
Householder Under 65 Years	0.66	0.68				
Householder 65 Years and Over	0.60	0.68				
Three Persons	0.77	0.79	0.79			
Four Persons	1.02	1.03	1.00	1.00		
Five Persons	1.23	1.24	1.21	1.18	1.16	
Six Persons	1.41	1.42	1.39	1.36	1.32	1.29

Source: Computed from official Census Bureau thresholds available at www.census.gov.

Table A.3

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

Number of Adults	Number of Children Under 18				
	None	One	Two	Three	Four
One	0.463	0.699	0.830	0.953	1.069
Two	0.653	0.880	1.000	1.114	1.223
Three	1.000	1.114	1.223	1.328	1.430
Four	1.223	1.328	1.430	1.529	1.625

Source: Computed by CEO based on Betson, David. 1996. *Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement* . University of Notre Dame. March. Available at: http://aspe.os.dhhs.gov/poverty/papers/escale.pdf.

Table A.4 compares a variety of poverty thresholds for families of different sizes and compositions. The difference between the CEO and official thresholds are expressed as the ratio of the CEO threshold over the corresponding official one. It illustrates both that the CEO thresholds are always higher than the official ones, and that the difference is not uniform. The variation is a result of the different scales.

Table A.4

Comparison of Poverty Thresholds

Family Type	CEO	OFFICIAL	CEO/OFFICIAL
1 Adult,[1] No Child	$12,114	$10,488	1.16
2 Adults,[1] No Child	$17,081	$13,500	1.27
1 Adult, One Child	$18,280	$13,895	1.32
1 Adult, Two Children	$21,702	$16,242	1.34
1 Adult, Three Children	$24,906	$20,516	1.21
2 Adults, One Child	$23,006	$16,227	1.42
2 Adults, Two Children	$26,138	$20,444	1.28
2 Adults, Three Children	$29,116	$24,059	1.21

Source: U.S. Bureau of the Census and CEO Calculations from Tables 2.3 and A.3

Note:
[1] Adult is non-elderly in official threshold.

How do the CEO poverty thresholds compare to other measures of income adequacy?

The CEO poverty thresholds for New York City are considerably higher than the official national-level Census Bureau thresholds. But they are not very different from a variety of income standards used to determine eligibility for means-tested programs that assist low-income families. As Table A.4 illustrates, the CEO standard is only slightly higher than the income cutoff for Food Stamps and the Free School Lunch program (which use 130 percent of the Federal poverty guidelines) and is below the eligibility standards for the Reduced-Price School Lunch program (185 percent of the Federal poverty guidelines), Medicaid for parents (150 percent of the Federal poverty guidelines), and Section 8 housing assistance (50 percent of area median income).

Table A.5

Income Eligibility Standards for Two Adult, Two Child Family, 2006

	Dollar Amount
Food Stamps	$26,000
Free School Lunch	$26,000
Reduced-price School Lunch	$37,000
Medicaid (for Parents)	$30,000
Section 8	$35,450
CEO Poverty Threshold	$26,138

Source: CEO tabulations based on 2006 poverty guidelines and program rules.

The CEO threshold can also be compared to income standards that have been developed for New York City (or its metro area) by other research organizations. Three such calculators are the Wider Opportunities for Women's (WOW) Self-Sufficiency Standard, the National Center for Children in Poverty's (NCCP) Basic Needs Budget, and the Economic Policy Institute's (EPI) Basic Family Budget. Each approach calculates the income needed to purchase the basic market basket items of housing, food, childcare, health insurance, transportation, other miscellaneous expenses and taxes based on the geographically-varied costs of the items. Table A.6 provides the annual cost of these items as calculated using these approaches.

Table A.6

Annual Cost for Basic Market Basket Items Two-Adult, Two-Child Family

	Self-Sufficiency Standard, 2004 [1]	Basic Needs Budget, 2006 [2]	Basic Family Budget, 2005 [3]
Housing	$12,096	$13,596	$12,900
Food	$10,236	$7,295	$7,044
Health Insurance	$3,408	$1,812	$6,168
Child Care	$16,944	$16,896	$14,340
Transportation	$1,680	$1,680	$3,852
Other Necessities	$4,440	$5,641	$5,388
Taxes	$8,424	$8,221	$8,964
Total	$57,228	$55,140	$58,656

Source: CEO tabulations based on information provided by Wider Opportunites for Women, the National Center for Children and Families and the Economic Policy Institute. See Notes.

Note:

[1] Wider Opportunities for Women. Based on two adults, one school-aged child and one pre-schooler living in Brooklyn.

[2] National Center for Children and Families. Based on two parent, one school-aged child and one pre-schooler family in 2006.

[3] Economic Policy Institute. Based on two parent, two child family.

The large differences between these estimates and the CEO poverty threshold result from two main factors. First, these measures are based on estimates of costs, rather than on what people actually spend. But more importantly, the differences reflect differences in what the two sets of concepts are trying to measure. The family budget concept tries to establish the income required by families to attain a "decent" or "adequate" standard of living without recourse to public or private assistance.[86]

[86] Diana M. Pearce. "The Self-Sufficiency Standard for the City of New York 2004." (The Center for Women's Welfare at the University of Washington, November 2004).

The poverty threshold tries to define a much more modest standard, a level at which families are clearly facing significant economic hardship. EPI's Jared Bernstein described the difference in testimony before Congress. "The distinction between these two standards - poverty and family budgets - recalls the views of poverty measurement pioneer Mollie Orshansky, who viewed her original poverty threshold as a measure of income inadequacy, not of income adequacy. Family budgets are closer to the latter."[87]

How should the poverty thresholds be updated over time?

Because this study measures poverty only for 2006, the question of how the income thresholds should change over time is not directly relevant to this report. However, this issue played an important role in our decision to use the NAS methodology and will become meaningful as CEO continues to issue reports on poverty in the years ahead.

The Census Bureau's current method of adjusting the poverty line is to multiply it by the annual change in the Consumer Price Index (CPI). This method is intended to maintain the poverty threshold's value relative to the cost of living, but it takes no account of changes in the standard of living over time.[88]

The NAS Panel criticized the official poverty measure for its updating methods, pointing out that over time they lead to poverty standards that have little relevance for today's needs. CEO agrees with the NAS finding that access to a fixed and ever more obsolete standard of living is too narrow a basis for an economically advanced, democratic society to judge who is poor. Over time, as family incomes rise, the goods and services that were once viewed as luxuries become, first, common comforts and later, necessities of a normal life. Thus the level of consumption requisite for adequate functioning as parents, workers, or citizens, is shaped by increases in standards of living for the population as a whole. A poverty threshold that does not reflect this reality represents a standard of adequacy that is blind to social change.

The growing distance between the standard of living represented by the official poverty threshold and the standard of living enjoyed by most of the rest of society has led some researchers to suggest that the poverty line should simply be set at a fixed percentage of median family income so that a

[87] Jared Bernstein. Testimony in Economic Opportunity and Poverty in America: Before the Subcommittee on Income Security and Family Support of the Committee on Ways and Means, 110th U.S. House of Representatives, First Session, 13 February 2007.

[88] Because it represents an unchanging standard approaches such as these are referred to as "absolute" poverty measures.

rising standard of living would be automatically translated into a higher poverty threshold.[89] One disadvantage of this approach, however, is that when incomes fall during a recession the poverty line falls as well, creating the possibility that the poverty rate would decline just when families were facing greater hardships.

The NAS Panel took a less relative approach, recommending that the poverty line be adjusted to reflect the rise in the level of expenditures for the necessities represented in its threshold. This approach would capture some of the growth in the standard of living over time, but only that part that was reflected in spending on necessities. This creates thresholds that gradually rise in inflation-adjusted value, but at a rate that is somewhat slower than the growth of median family income.[90] CEO anticipates an approach similar to the NAS recommendations for its future adjustments to poverty thresholds.

[89] This is the approach taken by the Organization of Economic Cooperation and Development. For example see: Organization for Economic Cooperation and Development. OECD Employment Outlook. (Paris, France, June 2001)
[90] Citro and Michael (1995), 154-157.

APPENDIX B

ESTIMATIONS OF TAX LIABILITIES AND CREDITS

The impact of taxation on disposable income is estimated in this study by applying tax laws and computation rules to the income data and family characteristics in the New York City sample of the ACS. While this produces a good estimate of tax payments, it is not an exact report of the actual taxes that these tax filers paid, which would require much more information to compute.[91]

At the time the estimates were made, summary information from actual tax returns was available for 2005, but not 2006 at the Federal, State and City level. The CEO model was developed for 2005 data and tested against the available tax returns data to judge its accuracy. After testing, the model was applied to the 2006 ACS data set used throughout this study.

The resulting tax information was estimated for individual records within each household, first by tax filing unit and then by CEO poverty unit. This creates tax estimates that differ from the way that tax data are reported by tax agencies, complicating direct comparisons. Estimates based on tax records are not easily related to Census data because of differences between filing units and families or households. A further difficulty is that access to *samples* of tax records is also limited for privacy reasons; not all filer samples are available for public use.

ESTIMATING TAX PAYMENTS

As noted earlier, the initial step in calculating tax liabilities and credits is to identify filers, their filing status, and number of dependents they may be claiming. Anyone who files a version of the 1040 IRS tax form (or any couple for married filers) and their dependents make up a tax unit. A filer is anyone who is either 19 years of age or older, married, or has a dependent. A dependent is defined as any person who is less than 19 years of age, or 19 to 24 years old and enrolled in school, or who has personal income of less than $3,300. All persons with wage income were considered to be potential filers, including those with earned income below the statutory filing threshold. Based on the characteristics of the filing unit each was assigned a filing status.[92]

[91] Confidentiality issues prevent the release of the type of detailed tax data that would be needed to examine actual tax payments for specific tax filers in New York City.

[92] The Federal tax code also includes newly widowed spouses, but the ACS data does not provide enough information to identify these taxpayers.

To construct tax returns, IRS Form 1040 and New York State IT-201 were used as models.[93] Limitations of the ACS data and the priority we placed on estimating tax credits for low-income families effectively meant that the equivalent of Forms IRS 1040A and NYS IT-150 were created for most cases. Rules used in the model are consistent with those found in IRS and New York State Division of Tax and Finance instructions for these forms, and the specific forms used for the various tax credits,[94] as well as supplementary instructions for tax preparers.

All filers were given a standard deduction for two reasons. First, there is not enough information in the ACS to create itemized deductions; second we assumed that there was a high likelihood that low-income filers would not itemize. Less than seven percent of all returns with itemized deductions are filed by filers with incomes under $20,000 and less than one third are filed by filers with incomes under $50,000.[95] Filers in New York State are even less likely to itemize on State returns since the State's standard deduction is larger than the mortgage interest deduction in most low- to middle-income households. Also, due to their limited relevancy to the task of poverty measurement, most credits were not phased out at higher incomes (above $50,000). The CEO tax estimates are, therefore, reasonably accurate only for filers with income below $50,000.

The CEO tax model estimated the following information for Federal returns: Federal Adjusted Gross Income (AGI), Self Employment Tax, Standard Deduction, Dependent Exemptions, Taxable Income, Tax Before Credits, Child and Dependent Care Credit (for 2006 only), Elderly and Disabled Credit, Tuition Credit, Child Tax Credit, Earned Income Tax Credit, Additional Child Tax Credit, and Tax After Credits.

New York State and New York City returns required estimates of New York State AGI, Standard Deduction, Dependent Exemptions, New York State Tax Before Credits, New York City Tax Before Credits, State and City Household Credit, State Child Tax Credit, State Dependent and Child Care Credit, State and City Earned Income Tax Credit, State Real Property Tax Credit (Circuit Breaker), State Tuition Credit, City School Tax Relief Credit (STAR) and State and City Taxes after credits. Finally, an additional net benefits variable was created showing the net difference between all tax liabilities, including payroll taxes (FICA), and all tax deductions and credits.

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[93] New York City taxes are filed using the State form. City tax and credits are calculated from the NYS adjusted gross income. There is no separate New York City standard deduction or exemption.
[94] For example, IRS Form EITC for the Earned Income Tax Credit.
[95] U.S. Bureau of the Internal Revenue Services. Statistics of Income-2006: Individual Income Tax Returns. (U.S. Department of Treasury, Washington, D.C.: July 2007) http://www.irs.gov/taxstats/indtaxstats/article/0,,id=134951,00.html#_sec1

In addition to filing status, taxes owed are determined by filers' tax brackets and tax rates. Tax brackets organize income by groups. They differ by filing status. For example, in 2006 the first Federal tax bracket for a head of household was from zero to $10,750; for a married couple the first bracket was from zero to $15,100. There are six brackets for each household type. Tax rates, which are different in each bracket, determine the amount of tax paid. The rates are the same for the six brackets regardless of filing status. The rate on the first bracket is 10 percent, for the second bracket 15 percent, etc. up to 35 percent on income over $336,550 for all household types.

The tax rate increases as income grows into higher tax brackets. But the higher rate is applied only to income in the higher bracket (also known as income received at the margin). A married couple with $25,000 in wages and salary and no other income would be taxed this way:

The couple's first $15,100 of taxable income is taxed at the rate of the first bracket:

1st bracket = $15,100 of income. Tax Rate = 10% Tax on this bracket = $1,510

Their next $9,900 of taxable income is taxed at the next highest rate:

2nd bracket = $9,900 of income Tax rate = 15% Tax on this bracket = $1,485

The income tax owed is the sum of the tax on both brackets—$2,995.

State and City income taxes use the same type of rate and bracket structure as the Federal government, but with fewer brackets and lower rates. All State and City taxes are assessed on earned income beginning with the first dollar of wages or salary earned.[96]

If the married couple in the above example had no deductions from their income and were eligible for no tax credits, they would pay $1,913 in FICA taxes, and $4,811 in combined income taxes ($2,985 Federal, $1,068 State and $748 City). Their total tax bill, or effective tax, would be $6,724, or 27 percent of their wages.

[96] Unearned income such as interest is also subject to the income tax, but some unearned income, such as capital gains, is taxed at a different rate than the income tax.

OFFSETTING THE TAX LIABILITIES: STANDARD DEDUCTIONS AND EXEMPTIONS

A tax of over 25 percent on low-income families would be a major barrier to making work a path out of poverty. In reality, there are enough offsets in the tax system so that taxpayers below the poverty line will rarely pay this much in taxes. Most will probably qualify for a refund and in many cases that refund can be larger than their initial tax liability.

Taxes are offset by deductions, exemptions, and credits. Deductions and exemptions lower taxable income. Tax credits offset taxes that would otherwise be owed.

The standard deduction is a fixed amount (based on family size and type) that can be deducted from gross income before taxable income is computed. At the Federal level in 2006 this deduction exempted $10,300 of income from Federal taxes and $15,000 from State and City taxes for married filers, for example. Similar deductions can be taken for State and City taxes. For the married couple in the example above, these deductions would cut their income taxes by almost half, reducing their net tax bill to 16 percent of their income.

Taxable income is also lowered by exemptions for tax filers and their dependents. For Federal filers in 2006 this meant $3,300 in tax exemptions per person. The State and City allowed $1,000 in exemptions for dependents, but not for a tax filer or the filer's spouse. If the married couple in our example has three children, their total Federal, State and City deductions and exemptions would be $44,800. They would owe $483 in State and City taxes, but owe no Federal taxes. Any Federal taxes they have paid during the year would be refunded to them (not including FICA payments). Their State and City taxes will be eliminated by tax credits and they may qualify for refundable tax credits that will give them up to several thousand dollars in refunds. (See Chapter 2 for discussion of the effect of tax

Text Box B.1

The ACS data files used in the model consisted of 60,512 un-weighted cases and 179 variables in 2005 and 61,890 un-weighted cases with 177 variables in 2006 respectively. For 2006, the most complete formulation of the model to date, 279 additional variables were created; of which 28 were final tax variables, in the sense that they would appear on Forms 1040 or IT-201, and the rest were intermediate variables. Variables used in estimating taxes were a combination of weighted ACS data and variables created within the tax units. The ACS variable PWGTP was used to weight all variables, including variables created in the tax units and tax model. The ACS money adjustment factor was used on all money variables.

credits on poverty rates.)

The main technique employed in this model is the use of decision points that generate branches representing possible outcomes. Each decision and subsequent branch might generate a tax, trigger the value of a tax credit, or remain neutral depending on where in the simulated tax return a decision was made. For example, in estimating the size of a standard deduction, the deduction was awarded based on filing status, then further refined based on the individual age and disability status of tax filers and their spouses. More detailed and complex conditions were established for each of the tax credits and tax liabilities.

Exceptions to this method were the estimation of payroll taxes, college tuition credits and the dependent childcare credit. Payroll taxes (FICA) were estimated at 7.65 percent of all wage income and had no other interaction with tax return variables in the tax program.[97] The dependent care credit is a significant tax credit for workers with dependent children, but this credit could not be estimated directly from the ACS data. A probability model was developed for qualified childcare costs and imputed for the tax units (see Appendix D). The credit was then calculated using these childcare cost estimates.

Tuition costs were also estimated separately and added to the tax units. Average tuition and financial aid data for New York City was assigned to college students (as identified in the ACS) based on whether they were enrolled in public or private college and were part-time or full-time students (derived from the number of hours they worked per week). Once tuition costs were assigned a decision was required regarding the type of tuition credit - Hope or Lifetime Learning - that would be claimed. We assumed that anyone 20 years of age or younger would be eligible for the Hope Credit, because we believe that students in low-income households may enter college later in their lives.

Estimates for the other tax credits and tax liabilities were based on demographic or other filer and family characteristics such as age or income. These estimates could be derived from available ACS variables.

[97] Public employees were also assigned a FICA payment. A more satisfactory method would be to remove them from the FICA rolls, but substitute a pension or retirement fund contribution as a wage deduction.

RESULTS

The tables below present results for some of the major elements in the CEO tax model and compares them with administrative data provided by Federal, State, and City agencies. (All the data in these tables are for tax year 2005 and, therefore, are not the tax estimates CEO used for estimating poverty rates in 2006.)

Table B.1 compares CEO adjusted gross income and taxable income against the U.S. Internal Revenue Service estimates by adjusted gross income bands of $5,000. The data is summarized for zero through $20,000 and $20,001 through $40,000 in the rows that are bordered. CEO's estimate of adjusted gross income is somewhat below that in the IRS data in the zero through $20,000 band, and above the IRS data in the $20,001 through $40,000 band. CEO's estimates for taxable income are 11.3 percent and 26.7 percent, respectively, above those provided by the IRS for these income bands' estimates of taxable income. Most tax liabilities and credits are calculated based on Federal AGI. CEO's estimates of AGI are close enough to the published aggregate tax return data to prove a sound base for further analysis.

Table B.1

Comparison of CEO and IRS Estimates of Adjusted Gross and Taxable Income, 2005

Income[1]	Adjusted Gross Income			Taxable Income		
	CEO	IRS	Percentage Difference[2]	CEO	IRS	Percentage Difference[2]
$0-$5,000	$673,633	$759,671	-11.3	$0	$22,675	-100.0
$5,001-$10,000	$2,216,815	$2,832,343	-21.7	$35,559	$127,906	-72.2
$10,001-$15,000	$4,009,354	$4,326,399	-7.3	$719,601	$621,296	15.8
$15,001-$20,000	$4,611,337	$4,891,700	-5.7	$1,529,276	$1,280,095	19.5
$0-$20,000	**$11,511,139**	**$12,810,113**	**-10.1**	**$2,284,436**	**$2,051,971**	**11.3**
$20,001-$25,000	$6,188,291	$5,458,162	13.4	$2,686,721	$2,061,702	30.3
$25,001-$30,000	$7,070,364	$6,226,726	13.5	$3,624,123	$2,904,495	24.8
$30,001-$35,000	$8,099,345	$6,919,805	17.0	$4,862,356	$3,690,245	31.8
$35,001-$40,000	$7,606,654	$6,998,172	8.7	$4,952,010	$4,066,772	21.8
$20,001-$40,000	**$28,964,653**	**$25,602,865**	**13.1**	**$16,125,209**	**$12,723,215**	**26.7**
$40,001-$45,000	$8,676,073	$6,907,273	25.6	$5,905,185	$4,207,832	40.3
$45,001-$50,000	$7,521,621	$6,483,607	16.0	$5,385,661	$4,090,188	31.7

Source: CEO tabulations from New York City Sample of 2005 American Community Survey and CEO tax model. IRS Data from IRS Wage & Investment: Planning, Research and Analysis. Individual Return Transaction File, Compliance Data Warehouse.

Note: Shaded rows are sums of preceding rows.

[1] Adjusted Gross Income.

[2] Differences are deviation of CEO from administrative numbers expressed as a percentage of the administrative data.

Tables B.2, B.3, and B.4 are organized in a similar manner. They provide comparisons of Federal, State, and City taxes after credits, the Earned Income Tax Credit, and in Table B.2 the Federal Child Credit, and in Tables B.3 and B.4 the State and City Household Credit. Table B.2 shows large differences between the CEO and IRS estimates for Federal taxes after credits. This may partly be due to the sources of gross income and differences in the tax situation of low and high income taxpayers. The CEO estimates do not capture unearned income other than interest, and the model does not compute taxes on unearned income such as capital gains. It is likely that some individuals with a very high gross income (not shown in the table) will move into a very low taxable income bracket and will have a tax due on that income. We did not attempt to capture taxes on this population, but believe the strength of our AGI and tax credits results are a better indicator of the accuracy of our model. The CEO estimates for the Earned Income and Child Tax Credits are fairly close.

Table B.2

Comparison of CEO and IRS Tax Data, 2005

Income[1]	Federal Tax After Credits			Federal Earned Income Credit			Federal Child Tax Credit		
	CEO	IRS	Percentage Difference[2]	CEO	IRS	Percentage Difference[2]	CEO	IRS	Percentage Difference[2]
$0-$5,000	-$62,286,684	$290,007,905	-121.5	$89,473	$49,608	80.4	$0	$1	-100.0
$5,001-$10,000	-$234,280,789	$6,623,683	-3637.0	$252,542	$349,765	-27.8	$0	$21	-100.0
$10,001-$15,000	-$213,267,370	-$376,885,894	-43.4	$352,851	$537,788	-34.4	$135	$622	-78.3
$15,001-$20,000	-$86,488,411	-$127,754,364	-32.3	$226,904	$339,380	-33.1	$5,900	$8,143	-27.5
$0-$20,000	**-$596,323,254**	**-$208,008,670**	**186.7**	**$921,770**	**$1,276,541**	**-27.8**	**$6,035**	**$8,788**	**-31.3**
$20,001-$25,000	$110,527,531	-$41,932,468	-363.6	$189,272	$198,383	-4.6	$20,099	$20,953	-4.1
$25,001-$30,000	$280,756,378	$231,751,103	21.1	$120,092	$105,812	13.5	$44,969	$36,287	23.9
$30,001-$35,000	$449,799,156	$311,684,145	44.3	$37,460	$33,105	13.2	$53,313	$46,809	13.9
$35,001-$40,000	$565,889,981	$631,961,780	-10.5	$3,382	$2,385	41.8	$59,430	$47,845	24.2
$20,001-$40,000	**$1,406,973,046**	**$1,133,464,560**	**24.1**	**$350,206**	**$339,685**	**3.1**	**$177,811**	**$151,894**	**17.1**
$40,001-$45,000	$737,642,331	$485,428,267	52.0	$0	$0	0.0	$74,447	$46,975	58.5
$45,001-$50,000	$803,623,811	$520,723,011	54.3	$0	$0	0.0	$64,350	$41,628	54.6

Source: CEO tabulations from New York City Sample of 2005 American Community Survey and CEO tax model. IRS Data from IRS Wage & Investment: Planning, Research and Analysis. Individual Return Transaction File, Compliance Data Warehouse.

Note: Shaded rows are sums of preceding rows.

[1] Adjusted Gross Income.

[2] Differences are deviation of CEO from administrative numbers expressed as a percentage of the administrative data.

Table B.3 provides information for New York State taxes. CEO estimates are below those from the State for taxes after credits — the Earned Income Tax Credit and the Household Credit for the lowest income bands. Above the $20,000 cut off, CEO estimates exceed the State administrative data. A similar pattern is evident for the City-level comparison given in Table B.4.

Table B.3

Comparison of CEO Tax Estimates and New York State Administrative Tax Data, 2005

Income[1]	Tax After Credits			NYS Earned Income Credit			NYS Household Credit		
	CEO	NYS	Percentage Difference[2]	CEO	NYS	Percentage Difference[2]	CEO	NYS	Percentage Difference[2]
$0-$5,000	-$79,610	-$29,081	173.8	$41,669	$17,373	139.9	$0	$6	-100.0
$5,001-$10,000	-$73,252	-$97,086	-24.5	$66,700	$84,931	-21.5	$2,136	$2,475	-13.7
$10,001-$15,000	-$81,832	-$143,609	-43.0	$99,609	$128,298	-22.4	$8,040	$8,542	-5.9
$15,001-$20,000	-$3,791	-$76,883	-95.1	$62,354	$86,777	-28.1	$11,551	$14,044	-17.8
$0-$20,000	**-$238,486**	**-$346,658**	**-31.2**	**$270,332**	**$317,378**	**-14.8**	**$21,728**	**$25,067**	**-13.3**
$20,001-$25,000	$70,199	$6,949	910.2	$50,922	$48,897	4.1	$12,219	$12,138	0.7
$25,001-$30,000	$150,899	$80,787	86.8	$32,383	$24,235	33.6	$5,770	$5,612	2.8
$30,001-$35,000	$244,533	$140,933	73.5	$10,171	$6,368	59.7	$1,296	$1,191	8.8
$35,001-$40,000	$266,856	$191,663	39.2	$1,006	$232	333.2	$0	$2	-100.0
$20,001-$40,000	**$732,486**	**$420,331**	**74.3**	**$94,481**	**$79,732**	**18.5**	**$19,285**	**$18,943**	**1.8**
$40,001-$45,000	$319,685	$211,971	50.8	$0	$0	0.0	$0	$0	0.0
$45,001-$50,000	$296,820	$211,019	40.7	$0	$0	0.0	$0	$0	0.0

Source: CEO tabulations from New York City Sample of 2005 American Community Survey and CEO tax model. NYS Data provided by Office of Tax Policy Analysis, New York State Department of Taxation and Finance.

Note: Shaded rows are sums of preceding rows.

[1] Adjusted Gross Income.

[2] Differences are deviation of CEO from administrative numbers expressed as a percentage of the administrative data.

Table B.4

Comparison of CEO Tax Estimates and New York City Administrative Tax Data, 2005

Income[1]	Tax After Credits			NYC Earned Income Credit			NYC Household Credit		
	CEO	NYC	Percentage Difference[2]	CEO	NYC	Percentage Difference[2]	CEO	NYC	Percentage Difference[2]
$0-$5,000	-$75,010	$1,979	-3890.9	$4,474	$2,645	69.1	$57	$4	1517.9
$5,001-$10,000	-$33,651	$4,839	-795.4	$12,627	$14,182	-11.0	$960	$942	1.9
$10,001-$15,000	-$22,476	$13,658	-264.6	$17,643	$21,693	-18.7	$1,715	$2,953	-41.9
$15,001-$20,000	$15,913	$29,446	-46.0	$11,345	$15,655	-27.5	$2,338	$5,607	-58.3
$0-$20,000	**-$115,223**	**$49,922**	**-330.8**	**$46,089**	**$54,175**	**-14.9**	**$5,070**	**$9,506**	**-46.7**
$20,001-$25,000	$57,318	$56,012	2.3	$9,464	$9,233	2.5	$1,089	$1,685	-35.4
$25,001-$30,000	$95,443	$86,673	10.1	$6,005	$4,585	30.9	$6	$2	218.0
$30,001-$35,000	$140,583	$115,061	22.2	$1,873	$1,171	60.0	$0	$0	0.0
$35,001-$40,000	$146,484	$130,494	12.3	$169	$37	352.5	$0	$0	0.0
$20,001-$40,000	**$439,828**	**$388,241**	**13.3**	**$17,510**	**$15,027**	**16.5**	**$1,095**	**$1,686**	**-35.1**
$40,001-$45,000	$181,328	$136,986	32.4	$0	$0	0.0	$0	$0	0.0
$45,001-$50,000	$166,749	$133,359	25.0	$0	$0	0.0	$0	$0	0.0

Source: CEO tabulations from New York City Sample of 2005 American Community Survey and CEO tax model. New York City Mayor's Office of Management and Budget, PIT Collections Data, 2005.

Note: Shaded rows are sums of preceding rows

[1] Adjusted Gross Income.

[2] Differences are deviation of CEO from administrative numbers expressed as a percentage of the administrative data.

AREAS FOR FURTHER RESEARCH

This is a first attempt on CEO's part to estimate combined Federal, State and City tax returns based on the ACS data. There is a strong likelihood that results will be improved with subsequent versions of the model. There are three general areas where more work could lead to improved estimates.

One possible source of error in our model lies in the assumptions behind the creation of the tax units. They are predicated on assumptions about relationships within ACS-defined households, the CEO poverty units, and taxpayer behaviors. The filing units used here are the product of an arduous testing and refining of tax units against control variables, with very good results. However, continued testing of other configurations of filers and dependents might result in further improvement.[98] Another source of error may lie in the more complicated decision trees created in the tax return. Although all efforts were made to check the accuracy of the conditional constraints, there is always room for improvement.

The most serious challenge lies with the limits of the ACS, which was not designed to provide all the information needed to estimate tax effects. Two examples related to disability status illustrate this point. Blind filers get an enlarged standard deduction. The ACS provides one variable, DEYE, which is used to report blindness or a hearing disability. We did not attempt to distinguish between blind and deaf filers, but gave all those with DEYE coded disabilities the blindness deduction, overstating the total standard deduction for filers. A second example involves the Child and Dependent Care Credit. There is no data for dependent care costs for the disabled and no indicator of when dependent care costs are incurred. Like childcare costs, such data would have to be imputed by a probability model.

While we were able to obtain acceptable results, further improvements could be achieved through better imputations and modeling of the requisite data.

[98] A potential source of problems arises in selecting tax filers for tax year 2007. The Federal Tax Rebate program required that many non-filers, particularly the elderly, file a return in order to claim it. This will likely lead to a change in the number of returns filed and the distribution of returns by filing status.

APPENDIX C

HOUSING STATUS AND EXPENSES

The American Community Survey (ACS), used as the basic source of data for CEO's poverty measure, does not contain data needed to measure the effect of housing status (e.g. residence in public housing) on families' out-of-pocket spending for shelter and utilities. To remedy this, data from the New York City Housing and Vacancy Survey (HVS) were merged with the ACS sample data for New York City.

To assign the HVS housing data to ACS households, we applied an imputation approach that matched individual HVS and ACS households on several characteristics. The characteristics used for the match were: (1) the Public Use Microdata Area (PUMA) or Community District where the household resides;[99] (2) whether the housing was owned or rented; (3) the number of people in the household; (4) household income; (5) ethnicity of the household head; and (6) whether or not the household head was 65 years of age and above.

Matching was conducted by first randomizing the order of the households in each file. Then, taking the first HVS record, we scanned through the ACS list to find the first ACS household that matched it on all of the characteristics mentioned. About 60 percent of households were matched on all characteristics, and 93 percent were matched on income, family size, renter/owner status and PUMA.

If, after circling through the entire ACS list, no household could be found to match all six characteristics of a particular HVS household, successive adjustments were made to the match criteria. First, age of head was dropped as a matching criterion. Ethnicity was then dropped if a match could not be made on the remaining five characteristics. We then widened the range of income in another iteration (described below). Finally, in the event we still could not find a match, we repeated the process among ACS households in contiguous PUMAs, starting with the PUMA with the closest median income and working outward. After making a match, we moved to the next household in the HVS list and began again.

We therefore always matched on household location (as described by the household's PUMA, and contiguous PUMAs with similar living conditions), renter/owner status, number of people in the

[99] The PUMAs created by the Census Bureau are designed to approximate New York City's Community Districts.

household, and income. In total, 99.5 percent of ACS households were matched through this process to HVS households, leaving the remaining 0.5 percent unmatched.

DETAIL OF CHARACTERISTICS USED IN IMPUTATION

We defined the characteristics used for matching in the same manner across the HVS and ACS data sets. Rental status was a binary variable equal to one if the household was renting their residence. The number of people in the household was capped at 6 to ease the matching process, and since only 1.8 percent of households in the ACS had more than 6 members.[100] We defined total household income (adjusted for equivalent household size) as an eight-category variable, equal to one, for example, if income was between $0 and $20,000, and increasing in $20,000 increments up until category eight (income between $140,000-$160,000 or above).

In cases where we were not able to match exactly on a specific income category, we relaxed the income constraint somewhat for households at the higher end of the income distribution (that is, those in categories six, seven and eight, with respective incomes between $100,000-$120,000, $120,000-$140,000, and $140,000-$160,000 or above). If, along with the other characteristics we were considering, we could not find an exact ACS match for an HVS household on income, we allowed HVS households in category six to be matched to ACS households in category seven; if this still did not work, we tried to match the HVS households to ACS households in category eight. Likewise, for HVS households in category eight, we first tried to match them with ACS households in category seven, then six. For HVS households in category seven, we decided arbitrarily to match first on ACS households in category six, then eight.[101] Because income constraints were only relaxed for families with more than $100,000 in income, it seems unlikely that this could have affected estimates of housing status for families with incomes near the poverty line. For lower-income households we always matched exactly on income category.

As for the remaining characteristics, ethnicity was defined as a four-category variable (White, Black, Asian or another (non-Hispanic) ethnicity, and Hispanic, any race). Finally, age of the household head was simply defined as being greater than or equal to 65 years of age, or below 65.

[100] Furthermore, the effect of household size on housing costs and other HVS variables were not likely to be very different whether there were 7 or 10 members in the household, for example.
[101] The number of cases in this instance was so small that it did not make a material difference which direction we decided to take first.

RESULTS

The summary statistics in Tables C.1and C.2 describe some of the characteristics of the households matched at various stages. In total, 135 out of 25,125 household records in the ACS remained unmatched after following the procedure described above; applying ACS weights, this represented just 17,773 households out of about 3 million, or one-half of one percent of the population. Table C.1 presents the number of matched cases at each stage of the imputation; about 61 percent of households were matched on all characteristics (PUMA, renting/owning status, number of people in the household, income, age, and ethnicity). Another 32 percent of households were matched by dropping age and ethnicity from the matching process (steps 2 and 3 of the imputation). Repeating the imputation process by relaxing the income constraint for higher-income households (steps 4 to 6) improved the number of matches by 2 percent. The final step in the imputation repeated the matching procedure within contiguous PUMAs, and further reduced the number of unmatched households by about 5 percent.

A priority in our analysis was being able to account for the renters in the ACS sample. The vast majority of low-income households in New York City would fall in this category, and most of the housing programs we were examining involved rent-based assistance.[102] We found that the matching process was able to capture the vast majority of renters in the early stages of imputation, and that of the remaining unmatched cases, about 60 percent were homeowners.[103]

[102] The rent subsidies we were examining included, for example, programs such as Section 8. As a check to see if the rent subsidy statuses we assigned to ACS households, based on the NYC HVS, were similar to actual program data, we compared the number of ACS households falling under rent subsidy programs with administrative data for the year 2006 provided by the New York City Human Resources Administration and other agencies. In total, 325,253 households in the administrative data were participating in rent subsidy programs, compared to our imputation results of 262,467 ACS households. This difference might be due to households receiving more than one type of subsidy, and therefore not being counted twice in the HVS; a further difficulty is that HVS survey respondents may not be aware that they are receiving a subsidy when it is an increase exemption, such as SCRIE or DRIE.

[103] A large share of unmatched cases were homeowners in the Bronx, Manhattan and Kings. Results available upon request.

Table C.1

Breakdown of Matched Households, by Steps in Imputation

Steps in Imputation	Description	Number of Cases		Percent of Weighted
		Weighted	Unweighted	
One	**Matched on All Characteristics Within Same PUMA**	1,829,396	15,259	60.6
Two	**Matched on all Characteristics Within Same PUMA, Except Age**	214,061	1,971	7.1
Three	**Matched on All Characteristics Within Same PUMA, Except Age and Ethnicity**	742,688	5,939	24.6
Four	**Matched on All Characteristics Within Same PUMA, Relaxing Income for Higher-income HH**	41,141	360	1.4
Five	**Matched on All Characteristics Within Same PUMA, Relaxing Income for Higher-income HH and Dropping Age**	4,061	44	0.1
Six	**Matched on All Characteristics Within Same PUMA, Relaxing Income for Higher-income HH, and Dropping Age and Ethnicity**	20,962	172	0.7
Seven	**Found Matches in Contiguous PUMAs, Starting with PUMA with Closest Median Income**	149,975	1,245	5.0
	Not Matched	17,773	135	0.6
	Total Households	3,020,057	25,125	100.0

Source: Matching was conducted across the 2005 New York City Housing and Vacancy Survey, and the New York City sample of the 2006 American Community Survey.

Note: Details on how the income criteria were relaxed are described in the Appendix. Households with total income below $100,000 were always matched exactly on the income criteria.

Table C.2 presents the income, age and race/ethnicity distribution of unmatched households relative to matched ACS households. Given that the number of unmatched households (and thus un-weighted records) is very small, Table C.2 should not be interpreted as a very precise description of unmatched households.[104]

As would be expected, there are some substantial differences across matched and unmatched households. The data in Table C.2 show that unmatched households tended to be younger and to have a higher total income than the matched sample, a trend driven primarily by unmatched households in Brooklyn and Queens. Although not presented here, median household size was about 5 for unmatched households versus 2 for matched households. This may explain the higher

[104] Standard deviations, for example, were very high; these are available upon request.

household income among unmatched households. As for ethnicity, the overall distribution was similar across different categories for matched and unmatched households, although substantial differences exist within boroughs. This is expected, however, since as mentioned earlier, matching was conducted within PUMAs and ethnicity was not one of the most important variables considered in the imputation.

Table C.2

Distribution of Matched and Unmatched Households Across Income, Ethnicity and Age

Borough	Matched / Unmatched	Number of HH	Median Income	Percentage of Households That Are:				
				White	Black	Asian / Other	Hispanic	Elderly[1]
Bronx	Unmatched	4,266	$77,199	30.3	35.7	1.6	32.5	16.5
	Matched	466,573	$40,996	15.4	31.8	4.4	48.3	17.2
Manhattan	Unmatched	2,427	$51,182	41.7	3.5	23	31.7	6.8
	Matched	733,166	$99,469	57.7	13.1	11.0	18.3	19.3
Staten Island	Unmatched	1,485	$14,897	56.8	8.7	16.9	17.5	8.4
	Matched	165,016	$81,128	70.1	9.7	7.3	12.9	19.2
Brooklyn	Unmatched	4,232	$83,000	57.3	16.2	3.5	22.9	7.3
	Matched	867,881	$51,784	40.3	33.4	8.7	17.6	20.8
Queens	Unmatched	5,205	$81,650	34	34.5	5.7	25.8	11.9
	Matched	769,694	$64,271	38.9	17	21.5	22.6	21.5
Total	Unmatched	17,615	$74,413	41.7	24	7.5	26.9	10.9
	Matched	3,002,330	$61,211	41.9	22.7	11.8	23.6	20.0

Source: Matching was conducted across the 2005 New York City Housing and Vacancy Survey, and the New York City sample of the 2006 American Community Survey.

Note: Data represent weighted numbers, using ACS household weights.
[1] Householder 65 or older.

APPENDIX D

ESTIMATION OF WORK-RELATED EXPENSES

Two major components of work expenses are covered in this report: childcare expenses and the cost of transportation to work. While other types of expenses could be incurred—for example, the cost of uniforms or other necessary work-specific clothing—little information is available on these expenses, and they seem unlikely to make up a large proportion of the budget for most families. This Appendix therefore focuses on the calculations made to estimate childcare and transportation costs.

ESTIMATING CHILDCARE EXPENSES

As described in Chapter Two, the 2001 and 2004 childcare modules of the Survey of Income and Program Participation (SIPP) provided the basis for estimating childcare expenditures for families in the ACS.[105] The approach used in this study was outlined by the NAS Panel and refined and discussed in Iceland and Ribar (2001).[106] CEO's methodology is based on their approach.

Data Sources

The SIPP surveys household members 15 years of age and over and collects information on sources of income, employment history, assets and liabilities, education, marriage, fertility, and childcare. Like the ACS, the SIPP contains information that allows people to be grouped into households, families, and related and unrelated subfamilies.

The SIPP childcare module contains weekly childcare expenditure data for children up to 14 years of age. Data on childcare expenditures by urban families from two different SIPP modules, 2001 and 2004, were used to estimate expenditures for this study. Pooling the two years allowed for a larger, richer set of data from which to obtain predicted expenses. The two modules could be treated as one data set because survey instruments and definitions of variables across the two years were the same,[107] and, as Table D.1 shows, childcare expenditures across the distribution of families were

[105] The 2001 and 2004 SIPP are the most recent rounds of this survey with data on childcare expenditures.
[106] John Iceland and David Ribar. "Measuring the Impact of Childcare Expenses on Poverty." (Paper presented, Population Association of America (PAA) Meetings, Washington, D.C., 2001)
[107] The 2004 module did ask a few more questions about individuals' language ability and citizenship status, but these variables were not used in our imputation.

also similar. The urban childcare consumer price index (CPI) was used to adjust prices to make them appropriate for the 2006 ACS families.[108]

Table D.1

Distribution of Childcare Expenditures Across 2001 and 2004 SIPP

	Percentage of Families with Expenditures		If Paid			
			Weekly Mean Expenditure		Weekly Median Expenditure	
	2001	2004	2001	2004	2001	2004
Children 0 thru 5	59.7	58.1	$104	$110	$84	$88
Children 6 thru 14	37.7	36.7	$91	$95	$60	$70

Source: The 2001 and 2004 Childcare Modules of the Survey of Income and Program Participation.

Note: Expenditures for 2001 and 2004 are reported amounts, prior to correcting for inflation. The SIPP records childcare expenditures for children through 14 years of age; however, CEO's imputations are only for children under 12.

Only families that had at least one child under 12 and where at least one adult was either working/looking for work were included in the analysis. This is because only childcare expenses that were actually necessary to allow a parent to work could be treated as work expenses. Similarly, childcare expenses counted as necessary for work were also capped by the income of the lowest-earning parent.

Estimation of Childcare Costs by Family Characteristics in the SIPP

To estimate the impacts of family characteristics on childcare expenditures, a regression-based approach was used.[109] This was carried out in two steps. First, we estimated the effects of different socioeconomic factors (*e.g.,* ages and number of family members, education and employment levels

[108] Specifically, the CPI used was for "Childcare and nursery school" under the U.S. city average for all urban consumers (CPI-U).

[109] In addition to a regression-based approach, we also considered a categorical imputation approach. This approach calculates mean (or median) childcare expenditures for different combinations of family socioeconomic characteristics in the SIPP, and then assigns that mean/median to families sharing the same characteristics in the ACS. By imputing childcare expenditures that were actually represented in the SIPP (as compared to predicted expenditures from the SIPP data), a categorical imputation approach can better preserve the distribution of childcare expenditures from the SIPP. This is particularly important if the tails of the distribution (i.e., those at the lower and higher end of the distribution of income/expenditure) are very different from the rest of the sample. A regression-based approach, on the other hand, focuses on the average impact of different socioeconomic characteristics on childcare expenditure, and thus replicates less precisely childcare expenditures of the very poor or the very wealthy. However, we found that in the SIPP, weekly expenditures were roughly similar across a large share of the income distribution. As a result, the tails of the distribution were not very different from the rest of the sample, so a categorical imputation was ultimately not used.

of adults in the family, proportion of adult female earnings in the family, and participation in welfare programs such as TANF) on the probability that a family paid for childcare. Specifically, we used a logit regression to determine the effects of these factors, where the dependent variable was whether or not the family used paid childcare. Second, on the sample of families actually paying for childcare, an OLS regression was estimated to determine the effects of these family characteristics on the weekly amount paid for childcare.[110]

For both of these regressions, separate results were calculated for married and single-headed families. As discussed earlier in the report, childcare needs and corresponding resource allocations across married and single-parent families can be quite different; thus, the effects of family socioeconomic characteristics on childcare expenditures are likely to vary greatly (and thus carry different interpretations) for the two groups.

Variables used to estimate childcare expenditures

To construct reasonable estimates of childcare expenditures for ACS families, we had to account for economic and demographic characteristics that might affect childcare spending. The study was limited to characteristics that were included in both the SIPP and ACS, however, because estimated effects of these characteristics from the SIPP regressions had to be applied to families with the same characteristics in the ACS. We were also limited to characteristics for which data were actually collected, excluding such important factors as personality and preferences that would affect childcare decisions.

The set of family characteristics in our regressions included family composition variables such as the number of children in different age groups, number of grandparents in the family, and the number of adults between 18-65 years of age. We also included the race/ethnicity of the family head (black or Hispanic, with white as the control), as well as adult educational attainment,[111] to account for other, potentially unobserved, social factors that might affect childcare decisions as well.

[110] Family weights were used in the regressions, although the unweighted estimates were also very similar.
[111] The education variable, in particular, was a categorical variable that took the following values: 0=some high school; 1=completed high school; 2=completed some college or vocational training; 3= completed associate degree; 4=completed college; 5=completed graduate school.

Family income and employment status also drive spending on childcare. On the income side, we included per capita family earnings in the regressions.[112] In addition, we included whether the family received Food Stamps as a proxy for their welfare status. While Food Stamp recipients might not necessarily need less childcare, their expenditures are likely to be constrained. Given its correlation with welfare status, Food Stamp receipt would likely overlap with eligibility for subsidized care — a variable that is particularly important in the New York City context, but not reported in the ACS (or, to a sufficient degree, in the SIPP). Whether the family rented or owned their residence was also included as another measure of wealth.

On the employment side, we included weekly hours worked by adults in the family, as well as the proportion of earnings from adult women in the family (as a measure of their availability/dependence on others to take care of children in the family). The number of government employees in the family was another factor we included in the regressions, since related childcare benefits and predictability of working schedules could also impact family childcare decisions.

The results discussed below show the effects of these socioeconomic characteristics on childcare use as well as expenditures in the SIPP. Not surprisingly, these effects varied across married and single-family samples.

Regression results

Table D.2 gives regression results that may be interpreted as odds ratios (or the odds of paying for childcare given an increase in that variable, relative to the odds of paying for childcare if that variable decreases).[113] An additional child between 0-5, for example, roughly doubles the odds of paying for childcare across both the married and single family samples. For the most part, the effects of the family characteristics on the likelihood of paying for childcare were similar across the two samples. However, there were some scattered differences — Food Stamps, for example, have a larger, negative impact on the probability of paying for childcare among married-parent families.

[112] Earned income included any reported income generated from employment; we took the log of this variable in the regressions so that we could interpret its effect on childcare spending in percentage terms.

[113] An odds ratio of one for a particular explanatory variable means that the likelihood of the outcome (*i.e.*, paying for childcare) is the same whether that variable increases or decreases by one unit. An odds ratio greater than one means that an increase in that variable raises the likelihood of paying for childcare, and vice-versa if the odds ratio is less than one.

Table D.3 examines the effects of social and economic characteristics on the amount of childcare expenditures for those families who are predicted to use paid care. There were greater differences across the married- and single-parent samples in this regression. Childcare expenditures across both samples were significantly affected by the presence of young children in the family (younger than 12 years), the amount of family earned income, and the total weekly hours worked by adults in the family. The magnitudes of these effects were not necessarily similar across the two samples. For example, an additional child between the ages of 6 and 11 raised the average weekly childcare expenditure by 12 percent in married-parent families, compared to 20 percent in single-parent families. Typically greater employment, income, and educational attainment led to greater childcare expenditures, and these effects were statistically significant. Looking at the magnitude of the other effects, families that received Food Stamps, as well as families with grandparents and a greater number of adults in the family, paid less for childcare.

Table D.2

Estimation Results on SIPP Sample for the Probability of Paying for Childcare

	Married Sample	Single Parent Sample
Reference Person in Family is Black (Y=1, N=0)	1.08 [0.11]	1.02 [0.11]
Reference Person in Family is Hispanic (Y=1, N=0)	1.25*** [0.11]	0.89 [0.12]
Number of Children in Family: 0-5 Years	2.23*** [0.11]	2.11*** [0.18]
Number of Children in Family: 6-11 Years	0.87*** [0.044]	1.1 [0.085]
Number of Children in Family: 12-18 Years	0.79*** [0.049]	0.74*** [0.071]
Number of Grandparents in Family	1.07 [0.093]	0.94 [0.075]
Number of Adults Between 18-65 Years	0.55*** [0.045]	0.71*** [0.076]
Log per Capita Earned Family Income	1.86*** [0.100]	1.50*** [0.11]
Proportion of Adult Womens' Earnings Relative to Total Adult Earnings	5.24*** [0.53]	4.23*** [0.64]
Total Weekly Hours Worked by Adults in Family	1.01*** [0.0013]	1.01*** [0.0026]
Anyone in Family Receives Food Stamps (Y=1, N=0)	0.58*** [0.12]	0.89 [0.13]
Maximum Schooling Level Obtained Among any Adult in Family	1.03 [0.026]	1.14*** [0.046]
Family Rents Residence (Y=1, N=0)	1.12 [0.093]	0.98 [0.10]
Number of Family Members that are Government Employees	1.08 [0.060]	1.16 [0.14]
Constant	6.54*** [0.47]	5.45*** [0.62]
Observations	8,177	3,019

Source: The 2001 and 2004 Childcare Modules of the Survey of Income and Program Participation.

Note:

(1) Odds ratios are reported for each explanatory variable, reflecting the odds of paying for child care given an increase in that variable, relative to the odds of paying for childcare if that variable decreases. An odds ratio of one means that the likelihood of paying for childcare is the same whether the explanatory variable increases or decreases by one unit. An odds ratio greater than one means that an increase in that variable raises the likelihood of paying for childcare, and vice-versa if the odds ratio is less than one.

(2) Robust standard errors in brackets; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

(3) Only families that had at least one child under 12, and where at least one adult was economically active (i.e., working or looking for work), were included. For descriptions of explanatory variables used in the estimation, please see discussion above.

(4) All estimations use family weights from the SIPP.

Table D.3

Estimation Results on SIPP Sample on the Amount of Childcare Expenditures

	Married Sample		Single Parent Sample	
	Coefficient	**Mean**	**Coefficient**	**Mean**
Reference Person in family is Black (Y=1, N=0)	0.055 [0.051]	0.12 [0.32]	0.06 [0.071]	0.33 [0.47]
Reference Person in Family is Hispanic (Y=1, N=0)	0.032 [0.052]	0.19 [0.40]	0.039 [0.076]	0.2 [0.40]
Number of Children in Family: 0-5 Years	0.42*** [0.035]	1.16 [0.70]	0.46*** [0.058]	0.87 [0.70]
Number of Children in Family: 6-11 Years	0.12*** [0.030]	0.59 [0.74]	0.20*** [0.053]	0.71 [0.77]
Number of Children in Family: 12-18 Years	0.015 [0.041]	0.2 [0.51]	0.14** [0.057]	0.21 [0.53]
Number of Grandparents in Family	-0.08 [0.065]	0.07 [0.37]	-0.04 [0.055]	0.19 [0.61]
Number of Adults between 18-65 Years	-0.03 [0.050]	2.12 [0.44]	-0.20** [0.079]	1.29 [0.70]
Log per Capita Earned Family Income	0.39*** [0.035]	6.84 [1.69]	0.23*** [0.059]	6.13 [2.07]
Proportion of Adult Womens' Earnings Relative to Total Adult Earnings	0.61*** [0.079]	0.42 [0.29]	0.15 [0.092]	0.87 [0.32]
Total Weekly Hours Worked by Adults in Family	0.0030*** [0.00081]	83 [27.6]	0.0056*** [0.0018]	49 [26.2]
Anyone in Family Receives Food Stamps (Y=1, N=0)	-0.15 [0.14]	0.02 [0.13]	-0.35*** [0.11]	0.17 [0.38]
Maximum Schooling Level Obtained Among any Adult in Family	0.044*** [0.015]	3.25 [1.46]	0.068*** [0.026]	2.11 [1.32]
Family Rents Residence (Y=1, N=0)	0.02 [0.049]	0.21 [0.41]	-0.11* [0.061]	0.56 [0.50]
Number of Family Members that are Government Employees	0.011 [0.032]	0.32 [0.58]	-0.28*** [0.075]	0.17 [0.40]
Constant	0.39 [0.31]		1.82*** [0.49]	
Observations	2,050		894	
R-squared	0.208		0.188	

Source: The 2001 and 2004 Childcare Modules of the Survey of Income and Program Participation.

Note:

(1) Only families that paid for childcare, had at least one child under 12, and where at least one adult was economically active (i.e., working or looking for work), were included. For descriptions of explanatory variables used in the estimation, please see discussion above.

(2) Robust standard errors in brackets for the regression estimates; *** p<0.01, ** p<0.05, * p<0.1. Standard deviations in brackets for variable means.

(3) All estimations use family weights from the SIPP.

Imputing Estimated Expenditures into the ACS

The estimated effects of each of the family characteristics presented in Tables D.2 and D.3 were then applied to the same characteristics of families in the ACS data to predict whether, and how much, each family would pay for childcare. Thus, for each ACS record in the relevant sample, a predicted probability of paying for childcare was calculated. An ACS family with a predicted probability of paying greater than the median was imputed as paying for childcare. For both the married and single-parent samples, the median predicted probability was about 0.3, and so families with predicted probabilities of paying for childcare greater than this threshold were imputed with estimated weekly expenditures. Although this threshold might seem low in absolute terms, it is important to consider the appropriate threshold relative to the distribution of predicted probabilities itself, to ground the threshold in the appropriate context.

Similarly, estimated weekly expenditures were calculated for the ACS families by multiplying the vector of regression coefficients from the SIPP childcare expenditure regression (Table D.3) to the ACS family's vector of socioeconomic characteristics. To arrive at an annual figure, these weekly expenditures were then multiplied by the least number of weeks worked in the last 12 months by any parent in the ACS data.

Table D.4 presents the distribution of estimated childcare expenditures for working families in the ACS with at least one child under 12.[114] The share of families paying for childcare, as well as how much they paid, are presented across the distribution of income. As expected, we found that the percentage of families paying for childcare, and annual spending on childcare, rose systematically with income. For example, about 20 percent of working families with young children in the 10th and 20th percentiles of family income were estimated to have paid for childcare, compared to nearly 70 percent between the 70th-90th percentiles.[115] For families in the ACS who paid, median estimated weekly childcare expenditures were about $60-$70 for families in the 10th-20th percentiles of income

[114] About 658,000 families fit these criteria, representing about 22 percent of the roughly 2.94 million families in the New York City ACS.

[115] To provide a context, median family income in the 20th percentile was about $13,000 (with a maximum of about $21,000), compared to median and maximum income in the 70th-80th percentiles of about $95,000 and $107,000, respectively.

(translating roughly to $2,000-$3,000 in median annual spending), compared with about $165-$220 a week for families between the 80th-99th percentiles of income (about $8,500-$10,500 annually).[41]

Table D.4

Estimated Childcare Expenditures, by Income Level

Percentile of Income	Number of Poverty Units	Share Paying for Childcare	If Paying			
			Annual Expenditures		Weekly Expenditures	
			Mean	Median	Mean	Median
0-10	59,467	20.4	$2,483	$2,269	$69	$62
10-20	71,566	20.3	$3,131	$3,165	$76	$73
20-30	72,256	37.2	$3,823	$3,648	$93	$90
30-40	71,219	41.6	$4,309	$4,245	$98	$94
40-50	63,361	41.3	$4,974	$4,732	$113	$107
50-60	69,762	44.5	$5,404	$5,335	$126	$119
60-70	63,105	50.8	$6,325	$5,891	$134	$121
70-80	61,169	63.4	$7,124	$6,961	$153	$144
80-90	59,409	67.5	$8,752	$8,405	$180	$167
90-99	60,338	66.6	$11,533	$10,536	$241	$224
Total	657,505	45.1	$6,719	$5,702	$146	$125

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from the 2001 and 2004 SIPP.

Note:

(1) Poverty units with at least one parent working or looking for work, and at least one child under 12, represented the sample for the calculations.

(2) Poverty unit weights were used to construct the estimates. Specifically, the poverty unit weight = (Number of persons in the poverty unit/number of persons in the household)*(ACS household weight).

We found that the estimates for higher-income families are similar to the 80th percentile of 2005 New York City market rates for childcare, as reported by the New York City Administration for Children's Services. Specifically, the Administration for Children's Services reports that the average weekly childcare expenditure for child day care in New York is $225; about $134 for registered family day care; about $150 for group family day care; and $94 for legally-exempt family childcare and in-home care.[116]

[41] SIPP childcare expenditures were reported on a weekly basis. Corresponding ACS childcare expenditures were thus initially estimated from the SIPP on a weekly basis, and to arrive at an annual figure they were then multiplied by the least number of weeks worked in the last 12 months by any parent in the ACS poverty unit.

[116] These figures come from October 2005 market rate data provided by the New York City Administration for Children's Services, and represent the 80th percentile of expenditure. Legally-exempt care refers to informal care provided by the parents'/primary caretaker's family, friends, or neighbors; such arrangements do not have to be licensed

As for low-income families, however, given the availability of subsidized care in New York City, our predictions would be substantially overestimated if the opportunity to obtain subsidies were not factored into the calculations. The SIPP data on which our estimates were based did include subsidies received,[117] and as mentioned above, we also tried to account for the likelihood of receiving a subsidy by including Food Stamp receipt in the regressions. Nevertheless, to see whether our estimates reflected similar expenditures to families receiving subsidized care, we compared estimated expenditures with New York City administrative data of low-income working families receiving childcare subsidies.[118] Monthly income for families in the administrative data ranged from $0-$3,600; we therefore compared their expenses with estimated ACS expenditures for families in the same income range. These comparisons are presented in Table D.5 below.

Table D.5

Comparison of Subsidized to Estimated Childcare Expenditures, 2006

Monthly Income Range[1]	Administrative Data[2]				American Community Survey Data[3]			
	Number of Families	Monthly Expenses (Percentile of Expenses in Range)			Number of Families	Estimated Monthly Expenses (Percentile of Expenses in Range)		
		25th	50th	75th		25th	50th	75th
$0–$793	3,403	$2.70	$3.00	$3.00	38,684	$0.00	$0.00	$0.00
$794–$995	3,785	$3.00	$3.00	$5.80	16,228	$0.00	$0.00	$183.10
$996–$1,151	3,779	$3.00	$4.10	$6.00	14,646	$0.00	$0.00	$197.10
$1,152–$1,321	3,789	$3.00	$7.00	$12.00	16,558	$0.00	$0.00	$171.60
$1,322–$1,516	3,916	$6.00	$12.50	$21.60	15,003	$0.00	$0.00	$0.00
$1,517–$1,732	3,818	$11.30	$22.50	$33.80	23,597	$0.00	$0.00	$157.00
$1,733–$1,989	3,597	$23.00	$36.00	$44.00	21,736	$0.00	$0.00	$288.60
$1,990–$2,299	3,782	$33.00	$48.00	$53.00	32,891	$0.00	$0.00	$296.60
$2,300–$2,651	3,781	$51.80	$58.00	$67.00	31,356	$0.00	$0.00	$375.90
$2,652–$3,622	3,778	$63.00	$70.00	$117.10	77,274	$0.00	$0.00	$393.70

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from the 2001 and 2004 SIPP. Administrative data on subsidized child care were provided by the NYC Administration for Children's Services, for the year 2006.

Note: Poverty unit weights were used to construct the ACS estimates. Specifically, the poverty unit weight = (Number of persons in the poverty unit/number of persons in the household)*(ACS household weight).

[1] The income ranges above reflect deciles of monthly family income in the administrative data. Specifically, in the administrative data, $0-$793 was the range of income for families in the 0-10th percentile of income, $794–$995 was the range of income for families in the 10th-20th percentile of income, and so on. Estimates for ACS families are presented in the same bands of income as the administrative data expenditures.

[2] Only families that used subsidized childcare for employment-related reasons are included in administrative data.

[3] ACS families are those where at least one parent is working or looking for work, and that have at least one child under 12.

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or registered by the city government, but must meet certain State regulations. For more information, see http://www.nyc.gov/html/acs/downloads/pdf/childcare_legally_exempt_faq.pdf .

[117] The SIPP accounted for subsidies by recording childcare expenses net of subsidies. The size of the subsidies families were receiving is unknown.

[118] Administrative data on subsidized childcare were provided by the New York City Administration for Children's Services, for the year 2006.

The administrative data show that median monthly childcare spending by most working families under the subsidy programs is very low. Even families at the highest end of the distribution, for example, with monthly income between $2,600 and $3,600, had median spending of only $70 a month. The CEO estimated median monthly childcare costs, on the other hand, were zero for all families with monthly income between $0-$3,600. The CEO approach therefore underestimates median childcare expenses to some degree, but given the low level of childcare spending in the administrative data, it is not a large difference.

At the 75th percentile of expenditure, we found that the CEO estimates are substantially higher than spending in the administrative data. The CEO estimates range from $200 to $300 a month, while the maximum is less than $120 in the administrative data. One reason for the variation across the two data sources is that participation in subsidized care is not automatic, even if a family falls within an eligible income bracket. The administrative data include only families receiving childcare subsidies, whereas low-income American Community Survey families in Table D.5 (reflecting a much greater span of families) were not necessarily assumed to receive subsidized care. A high proportion of ACS families, particularly at lower income levels, do not use paid care at all. Among those who do use such care, some will have to pay market rates, resulting in higher costs than those experienced by families with access to subsidized care. A greater variance in costs in the American Community Survey sample would therefore result from greater diversity in types of care used.

ESTIMATION OF TRANSPORTATION COSTS

As described in detail in Chapter Two, expenses for transportation for work were estimated for this study based on information collected in the ACS on the type and frequency of each worker's commute. This information was combined with information from various sources on the expense associated with different types of commuting to arrive at a weekly cost. This weekly cost was then multiplied by the number of weeks each person worked to calculate their annual transportation cost. Table D.6, below, gives details on the number and percent of workers using each mode of transportation and the annual median and mean cost calculated for each of these modes.

Table D.6

Journey to Work Mode and Annual Costs per Family

Mode of Transport	Number of Commuters	Percent	Median	Mean
Drove Alone	846,903	20.7%	$1,520	$1,991
Drove with Others	201,308	4.9%	$730	$881
Bus	477,431	11.7%	$940	$822
Subway	1,377,796	33.7%	$940	$877
Railroad	77,338	1.9%	$2,000	$2,101
Ferry	7,778	0.2%	$0	$0
Taxi	48,002	1.2%	$4,800	$4,238
Motorcycle	2,423	0.1%	$1,168	$1,313
Bike	18,037	0.4%	$0	$0
Walked	342,120	8.4%	$0	$0
Worked at Home	144,286	3.5%	$0	$0
Other Method	20,316	0.5%	$940	$833
No Mode	530,437	13.0%	$451	$485
Total	4,094,175	100.0%	$940	$1,005

Source: CEO tabulations from New York City Sample of 2006 American Community Survey augmented with data from the following sources: *Regional Travel-Household Interview Survey* , February 2000, New York Metropolitan Transportation Council-New Jersey Transportation Planning Authority; *IRS Revenue Procedure 2005-78* established the standard mileage rates for deductible costs of operating an automobile for business purposes; *The New York City Taxicab Fact Book* , March 2006, Schaller Consulting.

The rest of this section gives specific details on how transportation costs were calculated for each mode. For those commuting via subway or bus, for example, the study assumed everyone purchased a Metrocard. There are varying types of Metrocards with different costs per ride. For example, if one purchases a fixed price multi-ride Metrocard, a 20 percent bonus is given. In addition, when using an unlimited ride card, the cost per ride will vary based on the number of rides in the given period. To calculate a universal cost per ride in effect in 2006, we assumed 10 rides a week (unless otherwise noted) and created a weighted average. Table D.7 below shows the price per ride based on the different types of Metrocards.

Table D.7

Weighted Average Cost per Subway or Bus Trip

		Percent of Use	Cost per Ride
Pay per Ride	Pay per Ride	17.5%	$2.00
	Multiple Ride Card (20% discount)	17.5%	$1.67
Time-Frame Pass	7-day Unlimited (based on 12 rides/wk)	54.0%	$2.00
	30-day Unlimited (based on 12 rides/wk)	11.1%	$1.48
Weighted Average Cost per Ride		100%	$1.88

Source: Derived from data in *New Fare Discounts for Transit Riders in New York City,* NYPIRG Straphangers Campaign, November 2002.

For those who commuted via automobile or motorcycle, we used an average speed of 16.4 miles per hour[119] and information from the ACS on the length of the commute to estimate the miles traveled to work. This value was multiplied by the IRS Standard Mileage Allowance[120] to arrive at a cost per trip.

The IRS Revenue Procedure indicates that in addition to the Standard Mileage Allowance, tolls and parking can be deducted. Because tolls likely add significant costs for those commuting via auto in New York, we created the following rules to establish toll costs:

- Everyone used an EZ-pass.
- For cases where the toll is assessed when traveling in one direction, the toll is divided by 2 to get a per-trip cost.
- Those who lived in Staten Island and worked in another borough paid a toll of $2.40 per trip. Those who lived in a borough other than SI and worked in SI paid a toll of $4 per trip.
- Those who worked in NJ paid a toll of $2.50 per trip.
- Those who worked in a county in New York State north of the City and lived in a borough other than the Bronx paid a toll of $4 per trip.

Combining all of this information yields the following formula:

[119] New York Metropolitan Transportation Council – New Jersey Transportation Planning Authority. Regional Travel-Household Interview Survey. (February 2000).
[120] IRS Revenue Procedure 2005-78 established the standard mileage rates for deductible costs of operating an automobile for business purposes.

Cost per commute = (Minutes to Work/16.4mph) * IRS Standard Mileage Allowance) + Per Trip Toll Cost. For those who indicated that they carpooled, we divided their weekly cost by the number of persons they travel with to establish their portion of the weekly commuting cost.

For those taking the railroad, a distinction between traveling within and outside of New York City was drawn. Analysis of the ACS established that the majority of those traveling by railroad outside of New York City were using Long Island Railroad, Metro North or New Jersey Transit. We assumed an average price of $65 per week based on the monthly, weekly and per trip fares for these routes. For those traveling within the city borders by railroad, we assumed a $40 weekly cost based on sample fares from Jamaica to Penn Station and Fordham to Grand Central Station.

For those commuting by taxi, we established that a large portion were traveling within their borough of origin and their "Minutes to Work" was generally less than 60 minutes, with many traveling less than 30 minutes. The average fare for a yellow medallion cab for 2006 was $9.61.[121] There were no data for other taxi or livery cars but we assumed the cost of this type of transportation in the outer boroughs would be less. We settled on an $8 per trip cost.

We assumed that those who walked, bicycled, traveled by ferry or worked at home had a weekly commuting cost of zero.

We gave those that commuted via "other method" the average cost of a subway or bus trip ($1.88). There were also about 530,000 cases where a person had worked in the last 12 months but didn't have a journey to work value. They are listed as "No Mode" in Chapter 2. We gave these respondents the average cost of a subway or bus trip.

[121] Average fare for a 2.8 mile trip, Schaller Consulting. The New York City Taxicab Fact Book. (March 2006).

APPENDIX E

MEDICAL EXPENDITURE IMPUTATION

As discussed in Chapter 2, the 2005 Medical Expenditure Panel Survey (MEPS) was used as the basis for assigning medical out-of-pocket expenditures from the MEPS to families in the ACS. The estimates of medical expenditures for families in the MEPS were constructed by Jessica Banthin and researchers at the Agency for Healthcare Research and Quality (AHRQ), with whom we worked closely on this analysis.

As with childcare and housing, the imputation approach for medical expenditures reflected the way these expenses are distributed across families. In contrast to the pattern for childcare spending, where expenditures were flat along a substantial part of the income distribution, the distribution of medical expenditures is highly skewed relative to the distribution of income. Medical expenditures are very low for the lower to middle part of the income distribution, and climb steeply at the top end. If we used a regression-based imputation, which is based on estimating average expenditures, we would assume away this pattern and therefore assign expenditures to the poor that are likely to be far higher than the actual expenditures by low-income families reported in the MEPS. To estimate medical expenditures for ACS families, we therefore used a "hot-deck" imputation approach—one that matches cases within socioeconomic groups across the two databases, on a partially random basis. As described below, this approach is more likely to ensure that the resulting distribution of predicted medical expenditures in the ACS closely reflects the MEPS distribution of medical expenses.

STEPS IN THE IMPUTATION

First, we constructed social and economic groups to be used in matching cases across the two databases. In the MEPS sample, families were grouped into "cells," each reflecting a different combination of a set of family socioeconomic characteristics that were highly correlated with family medical expenditures. These characteristics included family size, income, and other characteristics of the family head.[122] The set of MEPS cells reflected all the different combinations of these characteristics.

[122] Since the 2005 MEPS had only 12,810 families, the entire sample was used in creating the cells, instead of sub-setting it (as with the SIPP in the childcare imputation) to urban families or the New York City population specifically. In fact,

Next, each ACS family, based on their characteristics, was matched to one of the MEPS cells. Across all families in each cell, we calculated the 25th, 50th, and 75th percentiles of annual medical out-of-pocket expenditures.[123] These families were then randomly assigned one of the three percentiles of annual expenditure appropriate to that cell. This procedure helped ensure that the distribution of medical expenditures in the ACS followed the distribution in the MEPS more closely, and that socioeconomic characteristics relevant to medical expenditures were also included in making estimates.

To determine which family characteristics to include in creating cells, using the MEPS sample, family-level regressions were run on annual out-of-pocket medical expenditures controlling for a range of socioeconomic characteristics such as family size and income (mentioned above), as well as gender, employment and marital status, educational attainment, and ethnicity of the family head. Separate regressions were estimated for the elderly and non-elderly samples. As with the childcare and housing imputations, only characteristics in the MEPS that were also included in the ACS could be used to match families across the two data sets.

Controlling for these variables, the characteristics that had the largest impact (both in magnitude and statistical significance) on family medical expenditures were used to construct the cells for matching. For the non-elderly sample, these characteristics included: (1) family size, measured in 1-person increments from "1" to "5 and over"; (2) income status, measured by a percentage of the Federal poverty line based on equivalent income (taking the values "Less than 100 percent", "100-199 percent", "200-299 percent", "300-399 percent", and "400 percent or more");[124] (3) whether or not the family head worked full-time (35 hours or more); (4) race/ethnicity of the family head (white, black, Hispanic, and other; (5) whether or not the family head had graduated from college; and (6) whether or not the family received Food Stamps. For the elderly sample, all of the above

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when comparing the distribution of expenditures across the 2005 MEPS sample with New York City aggregate estimates from the Agency for Healthcare Research and Quality, the distribution of the MEPS data was found to be similar and in fact slightly higher than the aggregate New York City estimates. We therefore decided to maintain the predicted expenditures from the total MEPS sample.

[123] As mentioned earlier, because the distribution of medical expenditures increased exponentially with small increases in income above the median, imputing the mean expenditure (which would be driven by very high expenditures at the upper end of the income distribution) for a given cell would substantially overestimate medical expenditures for most families. Doing so would also misrepresent the skewed distribution of medical expenditures in the MEPS. We therefore decided to randomly assign the 25th, 50th, and 75th percentiles of the distribution of medical expenditures for families within a given cell, to account for the tendency of medical expenditures to be highly skewed.

[124] Using other poverty measures to construct our poverty analysis may seem inconsistent. However, our interest was primarily in a variable that reflected family income and could be used in the hot-deck imputation. Family income as a percentage of the Federal poverty line was suitable in this case, since the Federal poverty measure is based only on pre-tax income. This variable provides a simple breakdown of where the family lies in the income distribution.

characteristics except full-time employment status were used, since most of the elderly sample did not work full-time. Given the New York City context, we were also interested in the effect of citizenship status on expenditures, and so we attempted to break down ethnic groups by citizenship status. However, there were only enough observations to allow us to do this for Hispanic-headed families.

The ACS does not include a measure of health insurance status, so whether or not a family had insurance could not be used in the imputations. The impact of insurance status on expenditures in the MEPS was checked in additional regressions, however, and found to be relatively small once other characteristics were taken into account. Insurance status in these regressions was included as two variables — receipt of public insurance, and receipt of private insurance. For the elderly sample, public insurance status was highly correlated with Food Stamp receipt, education, and ethnicity. For the non-elderly sample, public insurance status had no significant effect on medical expenditures. Having private insurance, however, had a significant upward impact on expenditures in the non-elderly sample even when controlling for the socioeconomic characteristics described above.

As a separate check, therefore, additional logit estimations and cross-tabulations were run for insurance status on the other socioeconomic characteristics in the medical expenditure regression, again for both the elderly and non-elderly samples.[125] Overall, the logit regressions showed that all of the variables we ultimately included in constructing our cells (income, family size, employment, education, marital status, ethnicity, and Food Stamp receipt) had a highly statistically-significant effect on private and public insurance status, across both the elderly and non-elderly samples. These findings confirmed the cross-tabulation results and earlier regressions we had done. Therefore, we concluded that the socioeconomic characteristics that we ultimately used in constructing the cells for the hot-deck procedure incorporated most of the factors that determined insurance status as well.[126]

IMPUTATION RESULTS

In total, for the non-elderly sample in the MEPS, there were 64 cells/combinations of the socioeconomic characteristics described above. For the elderly sample, there were only 15 cells. Tables E.1 and E.2 below provide examples of these cells across the two samples.

[125] Results are available upon request.
[126] Future rounds of the ACS are expected to include insurance status. This variable could then be included directly in the imputations to update future CEO poverty rates.

The difference in cells across the two samples is due to criteria placed on the number of families in each cell. So that the percentiles of expenditure for each cell could be based on a reasonable number of observations, only cells that contained at least 100 MEPS families were allowed. For cells that had less than 100 families after accounting for all the socioeconomic characteristics mentioned above, we limited the number of characteristics describing that cell, one by one, until at least 100 families were represented. The regressions mentioned above helped us to determine which of these socioeconomic characteristics were less important in determining medical expenditures (*i.e.,* those that would be dropped first if less than 100 families were represented), and which were more relevant.

The order in which characteristics are presented in Tables E.1 and E.2, from left to right, reflects their (decreasing) importance based on the regression results. Family size, income level, and employment status were the most important, while educational attainment and receipt of Food Stamps were often absorbed by the other categories.

Table E.1

Examples of Cells Created for Elderly Families, Characteristics of Family/Family Head

Variables Used in Imputation						Distribution of Annual Out-of-pocket Medical Expenditures					
Family-level		Characteristics of Family Head									
(1)	(2)	(3)	(4)	(5)	(6)						
Family Size	Income (% of Poverty)	Race / Cit-izenship	Marital Status	Graduated from College	Food Stamps	Number of Records	Weighted Population	Mean	25th Perc.	Median	75th Perc.
1 person	<100%	White	no	any	any	164	1,506,819	$2,079	$377	$1,588	$2,933
1 person	<100%	Non-white	any	any	any	143	712,943	$1,111	$157	$472	$1,658
2 persons	0-199%	White	any	any	any	191	2,103,565	$4,848	$2,304	$4,255	$6,753
2 persons	0-199%	Non-white	any	no	any	105	522,646	$3,182	$649	$2,051	$4,885
2 persons	200-299%	any	any	any	any	163	1,797,584	$5,929	$3,377	$4,990	$8,040
2 persons	300-399%	any	any	any	no	108	1,214,530	$5,441	$3,227	$4,864	$7,187
3 or more persons	any	White	any	any	any	110	1,392,497	$7,013	$2,941	$5,911	$8,098
3 or more persons	any	Non-white	any	any	any	107	497,700	$5,521	$1,295	$2,994	$6,183

Source: 2005 Medical Expenditure Panel Survey; Agency for Healthcare Research and Quality (AHRQ) estimates.

Note:

(1) There were a total of 15 cells for the elderly sample, of which a subset are presented in this Table.

(2) Employment status was not included as a characteristic in constructing cells for the elderly sample, since most of the elderly were not working full time.

(3) For cells with less than 100 families across all six characteristics, the characteristics were dropped one by one (starting with (6) and moving leftwards) until the minimum size of 100 was achieved.

(4) “Any” indicates that all values of that characteristic are included.

Table E.2

Examples of Cells Created for Non-Elderly Families, Characteristics of Family/Family Head

Variables Used in Imputation							Distribution of Annual Out-of-pocket Medical Expenditures					
Family-level characteristics		Characteristics of Family Head										
(1)	(2)	(3)	(4)	(5)	(6)	(7)						
Family Size	Income (% of Poverty)	Works Full-time	Race / Cit-izenship	Marital Status	Graduated from College	Food Stamps	Number of Records	Weighted Population	Mean	25th Perc.	Median	75th Perc.
1 person	<100%	any	White	any	any	yes	112	962,618	$778	$70	$313	$1,130
1 person	<100%	any	White	any	any	no	330	4,525,863	$1,006	$18	$325	$881
1 person	<100%	any	Black	any	any	any	191	1,668,663	$991	$0	$109	$441
1 person	<100%	any	Hispanic (all)	any	any	any	143	1,131,520	$750	$0	$58	$595
1 person	200-299%	yes	White	any	any	any	208	2,988,061	$1,179	$181	$840	$1,557
1 person	200-299%	yes	Non-White	any	any	any	149	1,214,971	$1,235	$264	$673	$1,357
1 person	200-299%	no	any	any	any	any	199	2,273,705	$1,421	$137	$646	$1,820
3 persons	100-199%	yes	any	any	any	any	154	1,011,726	$1,443	$380	$1,029	$1,712
3 persons	100-199%	no	any	any	any	any	184	1,226,917	$1,466	$82	$478	$1,978
3 persons	400+%	yes	White	any	yes	no	205	2,627,150	$4,408	$2,365	$3,875	$5,681
3 persons	400+%	yes	White	any	no	no	149	1,924,304	$4,426	$1,929	$3,420	$5,316
3 persons	400+%	yes	Non-White	any	any	no	112	910,782	$3,295	$1,258	$3,248	$4,442
3 persons	400+%	no	any	any	any	any	166	2,119,895	$5,454	$2,160	$3,811	$6,076
5 or more persons	<100%	any	Excluding Hispanic Non-	yes	any	any	129	624,819	$1,952	$27	$496	$2,126
5 or more persons	<100%	any	Excluding Hispanic Non-	no	any	any	114	586,906	$999	$7	$164	$742
5 or more persons	<100%	any	Hispanic Non-citizen	any	any	any	137	322,181	$655	$18	$197	$759

Source: 2005 Medical Expenditure Panel Survey; Agency for Healthcare Research and Quality (AHRQ) estimates.

Note:
(1) There were a total of 64 cells for the non-elderly sample, of which a subset are presented in this Table.
(2) For cells with less than 100 families across all seven characteristics, the characteristics were dropped one by one (starting with (7) and moving leftwards) until the minimum size of 100 was achieved.
(3) “Any” indicates that all values of that characteristic are included.

Looking at the tables, one striking feature is that mean annual expenditures are, more often than not, much higher than median expenditures. This makes a difference in the imputation — particularly for the elderly sample, for whom annual expenditures are significantly higher than the non-elderly sample. In some cases (for example, for the non-elderly sample that is less than 100% of the poverty line based on equivalent income), mean expenditure is even higher than spending at the 75th percentile.

As expected, spending on medical care tends to increase with family size and income. Race/ethnicity and citizenship status also tend to have interesting effects within the non-elderly sample—of families below 100 percent of the poverty line, those headed by Hispanics tend to have lower medical expenditures compared to blacks and whites, even accounting for the same employment, marital, education, and Food Stamp receipt status.[127] Thus, the race/ethnicity variable appears to be explaining some variation in expenditures that may not be a direct function of race itself, but of circumstances (such as insurance status) that are not directly observable. As for other variables, after controlling for family size, income, and ethnicity, there was not a great deal of variation in expenditures associated with education, marital status, and Food Stamp receipt; nonetheless the effects of these variables go in the expected directions.

Estimated expenditures for ACS families based on these cells are presented in Table E.3, which reflects the estimated out-of-pocket medical expenditures estimated for elderly and non-elderly families by poverty status. Nearly every family was imputed a positive medical expenditure, owing to the detailed data in the MEPS. However, we found that expenditures among elderly-headed families were substantially higher than those for non-elderly families, and for the latter, expenditures were often quite low. Elderly families with incomes below the CEO poverty threshold, for example, typically had median expenditures in the $1,600 range, while non-elderly families below poverty had median expenditures ranging from about $400-$600. Median expenditures rose for families with poverty statuses ranging from less than 50 percent to 200 percent of the poverty threshold. However, expenditures for families at the upper end of these distributions were not as sensitive to increases in income. Similarities across these wealthier groups in terms of lifestyle or health, as well as access to a certain quality of health care, may be one reason for this trend.

[127] Variation in race was much more limited in the elderly sample, also contributing in part to the lower number of cells for that group.

Table E.3

Estimated Medical Expenditures, by Poverty Status

Poverty as a Percent of CEO Threshold	If Paying			
	Elderly Family Heads		Non-elderly Family Heads	
	Mean	Median	Mean	Median
<50%	$2,096	$1,658	$509	$380
50-74%	$1,979	$1,588	$611	$441
75-99%	$1,949	$1,658	$856	$595
100-124%	$2,064	$1,658	$1,125	$858
125-149%	$3,022	$2,566	$1,457	$1,072
150-174%	$3,280	$2,941	$1,766	$1,409
175-199%	$3,155	$2,774	$1,865	$1,557
200-224%	$3,619	$3,227	$2,040	$1,751
225-249%	$3,610	$2,774	$2,040	$1,751
250-274%	$4,085	$3,912	$1,933	$1,751
275-299%	$3,788	$3,227	$1,907	$1,718
300%+	$3,967	$3,912	$1,945	$1,604

Source: 2005 Medical Expenditure Panel Survey; Agency for Healthcare Research and Quality (AHRQ) estimates.

Note: Poverty unit weights were used to construct the estimates. Specifically, the poverty unit weight = (Number of persons in the poverty unit/number of persons in the household)*(ACS household weight).