

*Treading Water in Quicksand:
A Look at Poverty, Income Inadequacy and Self-
Sufficiency in Massachusetts*

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Prepared for:

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Funding provided by:

Skillworks

September 2004

Table of Contents

About the Workforce Solutions Group and Skillworks.....	2
Introduction.....	4
Data Sources and Concepts.....	6
A Demographic and Socioeconomic Profile of Massachusetts Families in 2000	133
The Race/Ethnic Origins of Family Householders	199
The Educational Attainment of the State’s Family Householders	21
Poverty Trends in Massachusetts, 1979 – 2002.....	288
Poverty Rates of Key Demographic Subgroups of Families in Massachusetts	3030
The Geographic Structure of Family Poverty Rates in 1999	388
The Incidence of Low Income Challenges Among Massachusetts Families, 1999.....	433
Geographic Variations in the Incidence of Low Income Challenges Among Families in Massachusetts.....	5151
Estimates of the Incidence of Family Economic Self-Sufficiency Challenges Among Massachusetts Families, 1999	54
Methodologies for Estimating the Incidence of FESS Challenges Among Massachusetts Families and Unrelated Individuals.....	599
Estimates of the Number and Per Cent of Families With an Income Below the Self-Sufficiency Standard: 1999.....	60
Family Economic Self-Sufficiency Deficits and the Educational Attainment and Nativity Status of the Family Householder	677
The Incidence of Family Economic Self-Sufficiency Deficit Challenges Among Different Types of Families in Massachusetts.....	699
The Incidence of Family Economic Self-Sufficiency Deficit Challenges Among Unrelated Persons in Massachusetts in 1999	71
Measuring the Mean and Aggregate Size of Poverty and Family Economic Self-Sufficiency Deficits	788
Summary of Key Findings and Future Research Issues.....	833
Appendix A: Comparisons of the U.S. Census Bureau Estimates of the Number of Family Households in Massachusetts Counties in 2000 with the Number of Families in the County Based on the PUMA Assignment Model	90
Appendix B: Methodologies for Calculating the Values of Family Economic Self-Sufficiency Standards for Family Subgroups	922
Appendix C: A Graphical Portrait of the Incidence of Poverty, Low Income, and Family Economic Self-Sufficiency Challenges Among Families in Massachusetts Counties in 1999	100
Appendix D: Estimates of the Per Cent of Families in Massachusetts with a Family Income Below the Family Economic Self-Sufficiency Standard by County and Type of Family, 1999	1066
Appendix E: Estimates of the Mean and Aggregate Size of the Self-Sufficiency Income Deficits of Massachusetts Families by County and Family Type in 1999.....	11111

About the Workforce Solutions Group

The Workforce Solutions Group is a coalition led by the Women's Union, the Massachusetts Workforce Board Association, the Organizing and Leadership Training Center and the Massachusetts AFL-CIO that is dedicated to improving the Massachusetts workforce development system. Its unique strength is that it brings together a broad range of employers, unions, education and training providers, community colleges, immigrant advocates, workforce investment boards and interfaith organizations. These diverse groups are united by their common interest in having a strong and effective workforce development system.

The Workforce Solutions Group's goal is to use the combined strength of its constituencies to build public and political support for workforce development reform that increases workers' skills, advances families to self-sufficiency and promotes job creation and economic growth. In pursuit of this goal, the Group is carrying out a regionally-based, statewide campaign that aligns grassroots organizing and coalition building with coordinated media, research, marketing and advocacy strategies. In addition to research, the Workforce Solutions Group is conducting a series of eight regional forums around the state to bring together our diverse constituencies to discuss the challenges and opportunities in the system and develop policy recommendations.

The Workforce Solutions Group is the statewide public policy and advocacy grantee of Skillworks.

About Skillworks

SKILLWORKS – *Partners for a Productive Workforce* (formerly known as the Boston Workforce Development Initiative) is a five-year investment of approximately \$15 million on the part of philanthropy, government, community organizations, and employers to change how workforce development is done in Boston. The goal is to create a system that helps low-skill, low-income residents move to family-sustaining jobs and helps employers find and retain skilled employees.

SKILLWORKS is a comprehensive, community-based approach to economic development. Designed and led by the Boston Foundation, the City of Boston, the Commonwealth of Massachusetts and other local and national donor organizations, it is unique in the way a broad set of public and private stakeholders have come together to improve economic opportunity for citizens. Designed with help from Jobs for the Future, a nationally recognized non-profit workforce development organization, the initiative is supported by the Boston Private Industry Council, Management Consulting Services, and Abt Associates. The initiative is working with a wide array of employers and educational institutions to design programs that provide low-income workers skills training for mid-level jobs at regional hospitals, health research centers, universities, and the hospitality industry. These institutions are critical to Boston's economy in the 21st century, and will provide thousands of low-income Bostonians with the resources they need to purchase affordable housing, send their children to college, and become stakeholders in the American Dream.

The other funding organizations include the Annie E. Casey Foundation, The Hyams Foundation, Paul and Phyllis Fireman Foundation/One Family Campaign, Fleet Financial Charitable Asset Division, Making Connections Boston, Rockefeller Foundation, State Street Foundation, and United Way of Massachusetts Bay.

Introduction

As part of its research and public policy promotion work in support of the Skillworks, the Workforce Solutions Group has been preparing a series of research papers and reports on labor market developments in the Commonwealth and trends in the economic well-being of Massachusetts families and workers. In two earlier research reports prepared by the Center for Labor Market Studies, trends in the level and distribution of the real incomes of Massachusetts families over the decade of the 1990s were examined.¹ Findings on the growth of the median real incomes of families between 1989 and 1999 were presented and analyzed, with separate breakouts of the data for key geographic areas within the state (metropolitan areas, counties, selected cities and towns) and for selected demographic and socioeconomic subgroups of families across the state. The economic forces underlying the changing levels and distribution of family incomes also were examined.

The typical family in the state experienced only a very modest increase in its real income (3.4%) over the past decade, a rate of growth far below the near 26% growth rate of median real income during the decade of the 1980s. Massachusetts' rate of growth of median real family income went from 3rd highest among the states in the 1980s to only 41st highest in the 1990s. The 1990s also witnessed growing gaps in the median incomes of families across family types (married couple, female headed, male headed), the educational attainment of the family head, and among the affluent, the middle class, and the low income population. The distribution of family incomes in the state had become markedly more unequal by the end of the 1990s, with the bulk of the gains in real incomes concentrated among those families in the top ten per cent of the distribution.²

This research report is primarily devoted to an analysis of income inadequacy challenges facing a wide array of Massachusetts families at the end of the 1990s. A wide variety of income

¹ See: (i) Andrew Sum, Ishwar Khatiwada, Mykhaylo Trubs'kyy, with Sheila Palma, *Family Income Developments in Massachusetts During the 1990s: Mediocre Growth for the Average Family Amidst Sharply Rising Income Inequality*, Prepared for the Workforce Solutions Group, Boston Workforce Development Initiative, Boston, January 2004; (ii) Andrew Sum, Ishwar Khatiwada, Paulo Tobar, and Sheila Palma, *Changes in the Economic Well-Being of Families in Sub-state Areas of Massachusetts: Implications for the Future Targeting of Economic Development and Workforce Development Programs*, Prepared for the Workforce Solutions Group, Boston Workforce Development Initiative, Boston, June 2004.

² Using DOR income tax return data for 1999 rather than the U.S. Census Bureau family income data from the 2000 Census yielded even higher estimates of income inequality. The DOR income data capture income sources (capital

inadequacy measures are used by economists, sociologists, and other social scientists. Three alternative measures of income inadequacy are used in this paper: the poverty income thresholds of the federal government, a measure of the low income status of families as represented by 200% of the existing poverty income thresholds, and the Family Economic Self Sufficiency (FESS) standards of the Women's Educational and Industrial Union (WEIU) and Wider Opportunities for Women. For each of these three measures of income inadequacy, we will provide estimates of the number and per cent of Massachusetts families (and at times for unrelated individuals) that had incomes in calendar year 1999 below each of these three standards. These estimates of income inadequacy are presented for all families in the state, for selected geographic areas (counties, Local Workforce Investment Board service delivery areas), and for a rather wide array of demographic and socioeconomic subgroups of families across the state and selected sub-state areas.

Our report begins with an overview of the data sources that were used in conducting the empirical analyses and a discussion of the key income inadequacy concepts and measures: the federal government's poverty income thresholds, the family income measures used to represent "low incomes," and the Family Economic Self-Sufficiency standards of the Women's Educational and Industrial Union.³ The second section of the monograph will provide a detailed demographic and socioeconomic profile of family households in the Commonwealth at the time of the 2000 Census, including their distribution by family type, the presence in the home of related children under 18 years of age, the educational attainment of the family householder, the race/ethnicity of the householder, and the nativity status of the householder. The educational attainment distribution of family householders also will be presented by type of family, race/ethnic group, nativity status, and selected geographic areas of the state. A few comparisons of Massachusetts and U.S. family characteristics will be presented.

The third section will present our estimates of the poverty rates of all families in Massachusetts for selected time periods (1979, 1989, 1999, and 2002) and for a comprehensive array of demographic, socioeconomic, and geographic subgroups at the time of the 2000 Census. The fourth section will be devoted to findings on the incidence of low income challenges among

gains, management bonuses, stock options) not available from the 2000 Census and provide more reliable data on property income.

³ For a review of the FESS standards and their values for selected types of families, See: Jean Bacon, Laura Henze Russell, and Diana Pearce, The Self-Sufficiency Standard: Where Massachusetts Families Stand, Women's Educational and Industrial Union, United Way of Massachusetts Bay, Boston, 2000.

Massachusetts families at the time of the 2000 Census. These estimates will be provided for all families across the state and for a diverse set of families in demographic, socioeconomic, and geographic subgroups (counties, LWIBs). The fifth section will present and assess key findings on the number and per cent of families and unrelated individuals in Massachusetts who had incomes below the Family Economic Self-Sufficiency standards in calendar year 1999.⁴ These estimates of the share of families with incomes below the Self Sufficiency standards will be provided for selected categories of families (adults only, single parent families with one or more related children, married couple families with one or more children), for subgroups of families classified by the gender, race/ethnicity, educational attainment, and nativity status of the householder, and by county across the state.⁵ The final section of the paper will summarize key findings of the study and briefly discuss their implications for the Boston Workforce Development Initiative.

Data Sources and Concepts

Nearly all of the estimates of the number and percent of Massachusetts families that are poor, low income, or with incomes below the Family Economic Self-Sufficiency standards are based on the findings of the 2000 Census of Population and Housing.⁶ The long form questionnaire that was used in conducting the 2000 Census collected information on family incomes, the sources of those incomes, and on the poverty status of families.⁷ The long form questionnaire was administered to a representative sample of one of every six households in each city, county, and state. The U.S. Census Bureau has provided a set of public use data files for use by social science researchers in analyzing the findings of the 2000 Census long form questionnaires for households. We have used the 5-100 Public Use Micro-data Samples (PUMS)

⁴ Unrelated individuals are those persons who live on their own or in households with others to whom they are not related (roommates, unmarried partners, borders).

⁵ We also will breakout estimates of the incidence of Family Economic Self-Sufficiency challenges among demographic subgroups of unrelated individuals in the state and variations in the incidence of such problems across counties of the state.

⁶ A few of the estimates presented in this monograph are based on the 1980 and 1990 Censuses and on the March Current Population Surveys for selected years from 1990 to 2003. The March CPS survey contains a work experience and income supplement that collects data on the money incomes of all household members 15 and older in the previous calendar year. These individual incomes for individual family members are aggregated to estimate family income and the family's poverty status.

⁷ The poverty income threshold and the 200% of poverty income threshold standard are based on pre-tax, money incomes only. They exclude the value of employee benefits, such as health insurance, pension contributions, or company cars, and exclude in-kind benefits such as food stamps or rental subsidies as well as federal and state Earned Income Tax Credits. The FESS standard does account for some of these benefits, such as Earned Income Tax Credits.

to conduct the analyses appearing in this report. This comprehensive data set provides us with findings on the incomes, earnings, and poverty status of 1 of every 20 households in the state as well as on the demographic and socioeconomic characteristics of the members of these family households, especially the head of the family or in Census parlance the “family householder”.

In some cases, our estimates of the poverty or low income status of families at the county level in Massachusetts are based on published estimates of the U.S. Census Bureau which follow strict county boundaries. For many of our poverty and low income estimates and for all of our Family Self Sufficiency Income estimates at the county level, we rely on close approximations to county boundaries using combinations of Census Public Use Micro-data Areas (PUMAS) to form counties. On the public use data files containing the micro-records from the long form questionnaires, the U.S. Census Bureau does not provide county identifiers on the data files. Instead, areas of 100,000 or more people (combinations of cities/towns, parts of large cities) are categorized into PUMAS. These PUMAS unfortunately can cross county lines; thus, decisions have to be made as to how to assign such PUMA’s to specific counties. Some counties will be assigned more families than they actually have in residence while the remaining counties will have slightly fewer. The PUMA classification scheme for the Family Economic Self-Sufficiency Analysis provided pretty close fits for most counties. (See Appendix A for further details). Ninety-nine per cent of families were assigned to one of the 14 counties (Barnstable, Dukes, and Nantucket counties have to have combined for this analysis). In 8 of the 12 cases, the number of families assigned to a county fell within ± 2 per cent of the official estimates of the number of families. In 11 of the 12 cases, the counts were within $\pm 11\%$. In one case, Hampshire, there was a gap of 19 per cent between the PUMA assigned number of families and the official count of resident families in that county, but the total number of families involved in this gap was only 6,400.

The bulk of the income analyses presented in this paper are focused on the economic well-being of families in the Commonwealth rather than on all households.⁸ Following conventional Census Bureau definitions, a family household consists of two or more persons who are related to each other by blood, marriage, or adoption. A family household may or may not

⁸ A household consists of one or more persons occupying separate living quarters. Households can be either family households or non-family households.

contain any related children under the age of 18.⁹ Since the poverty, low income, and self-sufficiency status of families frequently varies considerably by the number of children present in the home, we will provide separate breakouts of the data for families by the presence of children under 18 in the home. For the Family Economic Self-Sufficiency measures, we also will present estimates of the number and per cent of unrelated individuals who had incomes below the self-sufficiency standard for their geographic area.¹⁰

The poverty income estimates appearing in this paper are based on the poverty income definitions and measures of the federal government as updated annually by the Office of Management and Budget to reflect changes in the cost-of-living as measured by the Consumer Price Index for All Urban Consumers. The poverty income thresholds vary with the number of persons in the family, the age of the family householder, and the number of children under 18 in the family.¹¹ The 1999 weighted average poverty thresholds for families containing two to nine persons are displayed in Table One. These poverty income thresholds ranged from \$11,214 for a family of two to \$17,029 for a four person family to a high of \$34,417 for families containing nine or more persons. The same poverty income thresholds are applied to all states, metropolitan areas, and cities across the country.

⁹ Household relationships in the Census data are always defined relative to the householder of the family. In a married couple family, the householder can be either the husband or the wife.

¹⁰ Unrelated individuals include persons living by themselves or in households with others to whom they are not related; i.e., roommates, unmarried partners, etc. Each unrelated individual is treated as a household of one in determining their poverty, low income, and self-sufficiency status.

¹¹ Households headed by an individual over the age of 65 are assigned a lower poverty income threshold by the federal government.

Table 1:
Weighted Average Poverty Thresholds and Low Income
Thresholds for Families Containing Two to Nine Persons, 1999

	(A)	(B)
Family Size	Weighted Average Poverty Threshold	Low Income Threshold
Two (head under 65)	\$11,214	\$22,428
Three	13,290	26,580
Four	17,029	34,058
Five	20,127	40,254
Six	22,727	45,454
Seven	25,912	51,824
Eight	28,967	57,934
Nine or More	34,417	68,834

Source: U.S. Census Bureau; poverty income thresholds are updated annually by the Office of Management and Budget.

The poverty status of a family is determined by comparing the pre-tax, money income of the family with its poverty income threshold. The money income measure used to determine a family's poverty status includes income from employment, property income, and income from a wide array of cash transfer programs, but excludes capital gains, federal and State Earned Income Tax Credits, and in-kind benefits from the federal, state, and local governments, such as food stamps, rental subsidies, and Medicare/Medicaid health care benefits. If the family's combined money income is below the assigned poverty income line for its given size and age composition, then the family is classified as poor.

The federal government's poverty income measures have been subject to a wide array of criticisms by economists, sociologists, political scientists, and other social analysts over the past decade, with some analysts claiming the poverty measures exaggerate the true extent of poverty while many others critique the measures as under-estimating the magnitude of income inadequacy challenges in the nation, individual regions, states, or cities. Among the major criticisms¹² from the point of view that the poverty lines underestimate true income inadequacy are those that focus on the poverty line's reliance on outdated family budgets which assume that one-third of a family's income is still spent on food, the poverty line's failures to adjust for the

¹² For a detailed review of alternative critiques of the federal government's poverty lines, See: (i) Andrew Sum, W. Neal Fogg, and Garth Mangum, *Poverty Ain't What It Used to Be*, Sar Levitan Center for Social Policy Studies,

changing relative costs of housing in the budget of low income families, the lack of any adjustments in the poverty line for changes in the average living standards of American families since the early 1960s, and the failure of the existing poverty lines to adjust for differences in the cost of living across regions, states, and local areas, especially housing cost differences. A wide array of alternative poverty lines have been proposed over the past 15 years, with these alternative poverty lines ranging from 113% to 176% of the existing poverty income thresholds.¹³

During the past few years, a number of poverty and welfare reform researchers, including those at the Urban Institute and the Manpower Demonstration Research Corporation, have developed a measure of “low incomes” for families that utilizes 200 per cent of the current federal government poverty lines as the thresholds for determining whether a family is low income.¹⁴ The 1999 values of these low income thresholds for families in the U.S. by family size are displayed in Column B of Table 1. The values of these “low income thresholds” in 1999 ranged from \$22,428 for a family of two, to \$34,058 for a family of four, to \$68,834 for a family containing nine or more persons.

These low income thresholds will be used to estimate the numbers, demographic/ socioeconomic characteristics, and geographic locations of Massachusetts families with 1999 money incomes below these low income thresholds. Estimates of the incidence of low income challenges among families will be provided for the state as a whole, counties across the state, Local Workforce Investment Board service delivery areas, and for families in a wide array of demographic and socioeconomic groups, classified by family type, the presence of children, and the educational attainment, race/ethnic origin, and nativity status of the family householder.

Our third set of measures of family income inadequacy in Massachusetts is based on the Family Economic Self-Sufficiency standards developed jointly in our state by the Women’s

Johns Hopkins University, Baltimore, 1999; (ii) Garth Mangum, Stephen Mangum, and Andrew Sum, *The Persistence of Poverty in the United States*, Johns Hopkins University Press, Baltimore, 2003.

¹³ For a review of the sources of these alternative poverty income measures including the National Research Council’s Panel on Poverty and Family Assistance,

See: Garth Mangum, Andrew Sum, and Neeta Fogg, “Poverty Ain’t What It Used to Be,” *Challenge: The Magazine of Economic Affairs*, March-April 2000, pp. 97-130.

¹⁴ For examples of applications of this measure of low incomes,

See: (i) Gregory Acs, Katherin Ross Phillips, and Daniel McKenzie, *Playing by the Rules but Losing the Game: America’s Working Poor*, Urban Institute, Washington, D.C., May 2000; (iii) Jennifer Miller, Lisa Grossman, et. al., *Building Bridges to Self-Sufficiency: Improving Services for Low Income Working Families*, Manpower Demonstration Research Corporation, New York City, 2004.

Educational and Industrial Union and Wider Opportunities for Women.¹⁵ The Self-Sufficiency methodology attempts to address a number of the methodological shortcomings of the federal government's poverty lines by providing locally based cost measures for housing and child care, taking federal and state taxes and Earned Income Tax credits into account in determining the amount of gross income needed by a family to achieve the desired consumption bundle, and varying child care costs with the age of the children in the family and the local cost of child care. According to a report of the Women's Educational and Industrial Union, the Self-Sufficiency standard is intended to represent the amount of income needed by families in Massachusetts "to meet their basic needs for housing, food, transportation, child care, health care, miscellaneous expenses, and taxes."¹⁶ Estimates of the 1999 values of the Family Economic Self-Sufficiency standards for selected subgroups of families in Suffolk County are displayed in Table 2 below. The values of these family standards range from \$17,713 for a one person household, to \$36,202 for one adult with a pre-school aged child (3-5 years old), and to \$46,580 for a family with two adults, one pre-school child, and 1 child over 6. We have used estimated Family Economic Self-Sufficiency standards for Massachusetts families in 1997 and 2003 to impute values for calendar year 1999.¹⁷ We also have applied a set of equivalence scales originally recommended by the National Research Council's Panel on Poverty and Family Assistance to estimate the appropriate self-sufficiency standards for other types of families in our state.¹⁸ A description of the specific methods used to derive these alternative self-sufficiency standards for other types of families is presented in Appendix B.

¹⁵ See: Jean Bacon, Laura Henze Russell, and Diana Pearce, *The Self-Sufficiency Standard: Where Massachusetts Families Stand*, Women's Educational and Industrial Union, United Way of Massachusetts Bay, Boston, 2000.

¹⁶ *Ibid.* These budgets measure the amount of income needed to cover these expenses without either public or private subsidies, such as rental subsidies, food stamps, child care subsidies, or free day care from family members.

¹⁷ See: Diana Pearce, *The Self-Sufficiency Standard for Massachusetts*, Women's Educational and Industrial Union, Boston, April 2003.

¹⁸ See: Constance F. Citro and Robert T. Michael (Editors), *Measuring Poverty: A New Approach*, National Academy Press, Washington, D.C., 1995.

Table 2:
Family Economic Self-Sufficiency Standards for Selected Types of Families in Suffolk County,
1999
 (Imputed)

Family Type	Standard
1 Adult, no children	\$17,713
2 Adults, no children	29,776
1 Adult, 1 child under 6	36,202
1 Adult, 2 children over 6	32,042
2 Adults, 1 child under 6, 1 child over 6	46,580

Source: Women's Educational and Industrial Union, selected publications, imputation by CLMS.

The values of the Family Economic Self-Sufficiency standards for Massachusetts families substantially exceed the federal poverty income thresholds and are higher than the low income thresholds based on twice the poverty line for families of a given size and composition. The ratios of the Family Economic Self-Sufficiency standards to the federal government's poverty lines for the subset of family types appearing in Table 2 typically range from 2.5 to 3.0, with the relative size of the gaps largest for families with children under the age of six due to the high market costs of child care for such families. For example, the Family Economic Self-Sufficiency budget for a single mother family with a pre-school aged child (ages 3 to 5) in the city of Boston was \$36,202 versus a poverty income threshold of only \$11,483 for a family of two with one child under 18 years of age.¹⁹ The FESS standard for this family was 3.14 times the official poverty line. The relative size of the income gaps between the FESS budgets and the federal government's poverty line is smallest for unrelated individuals. The estimated FESS standard for one adult in the city of Boston in 1999 was \$17,713 versus a poverty line of \$8,667 for a one person household, a relative difference of 2.04 or approximately the same as the multiple for the low income threshold which is 2.0 times the poverty line. Given the variations in the relative size of the differences between the Family Economic Self-Sufficiency Standards and the poverty lines and low income thresholds by family type and age composition, one would expect that the application of the FESS methodology will yield a higher incidence of income inadequacy challenges among families with pre-school aged children (under 6) than among families with no children under 18 or only children ages 6 and older in the home.

¹⁹ The official poverty income thresholds of the federal government do take the number of children under 18 into account but do not distinguish children under age 6 or infant children (under age 3) from older children.

The available Family Economic Self-Sufficiency standards for selected subgroups of families and unrelated individuals by county in Massachusetts were expanded to produce FESS standards for all other family types in each county, incorporating a common equivalence scale formula recommended by the National Research Council's Panel on Poverty and Family Assistance.²⁰ (See Appendix B for a more detailed discussion of the methods used to produce these FESS standard estimates.) These other family types include families with 2 or more adults and no related children under 18, families with one parent and 3 or more children, married couple families with 3 or more children, and families with 3 or more adults and various combinations of children under the age of 18. We also estimated the numbers of unrelated individuals (18 and older) in each county with incomes below the Self-Sufficiency thresholds for single adults. For each county and the state, we have produced estimates of the number and per cent of families with incomes below the Self-Sufficiency thresholds in calendar year 1999. These estimates were also generated for various types of families (adults only, single parent families, married couple families with children under 18) and by selected demographic characteristics of the family householder (age group, educational attainment, race-ethnic origin, and nativity status). For the first time, comprehensive estimates of the incidence of Family Economic Self-Sufficiency challenges for detailed demographic and socioeconomic subgroups are available for the Commonwealth of Massachusetts.

A Demographic and Socioeconomic Profile of Massachusetts Families in 2000

Knowledge of the demographic and socioeconomic characteristics of Massachusetts families is important in and of itself by providing us with insights as to who our families really are and how their composition has changed over time. The demographic and socioeconomic characteristics of these families also have important implications for the level and structure of poverty, low income, and Family Economic Self-Sufficiency challenges. The composition of families (married couple, single parent), the educational attainment of family householders, and the nativity status of family householders influence the size of their annual incomes and, thus, the likelihood of their being poor, low income, or unable to achieve economic self-sufficiency.

²⁰ This equivalence scale formula treats each child in the family as the equivalent of .7 adults and incorporates economies of scale in consumption coefficient of .75. The formula for a given family type is equal to $(A + .7C)^{.75}$, where A = the number of adults (18 and older) in the family and C = the number of children. The exponent .75 is the power to which the sum in brackets is taken to determine the value of this family's income adjustment factor relative to a family with two adults and two children.

At the time of the 2000 Census, there were 1.584 million family households in Massachusetts, accounting for slightly under 65% of the total 2.443 million households residing in the state.²¹ The share of all households in Massachusetts that are family households has declined steadily and sharply since 1950. At the time of the 1950 Census, nearly 90 per cent of all households in the Commonwealth were categorized as family households. By 1980, this ratio had declined to 71% and it fell to 67.4% in 1990 before declining to a new historical low of 64.8% in 2000.²²

Slightly over three-fourths of the state's families in 2000 were married couple families. Another 18% of the state's families were headed by unmarried women, many of whom contained children under 18. The remaining 5 to 6 percent of the families were male headed families with no female spouse present in the home. The composition of family households in Massachusetts by family type in 2000 was nearly identical to that for the nation as a whole. In the U.S., 76.5% of all family households were married couple families in 2000 versus 76.4% in our state. Massachusetts had a slightly higher share of its family households in the female householder category (18.1% vs. 17.5%) (Table 4). Many of these female-headed families had children under 18 present in the home. As will be revealed below, the economic well-being of female headed families with children differs quite considerably from that of female-headed families with no children under 18 in the home, especially in terms of the incidence of poverty and low income challenges.

²¹ As noted earlier, there are two types of households in the state: family households and non-family households. The latter group consists of single individuals living alone or with others to whom they are not related.

²² For a review of historical trends in household size, composition, and householder characteristics, See: Andrew Sum, Neeta Fogg, Jackie Sum, and Alice Winkler, *One Hundred Years of Population and Economic Changes: The Massachusetts Experience, 1890-1990*, Center for Labor Market Studies, Northeastern University, Boston, 1991.

Table 3:
Distribution of Family Households in Massachusetts by Type of Family, 2000

	(A)	(B)
Type of Family	Number	Per Cent
Married Couple	1,211,434	76.4
Female Householder, No Male Spouse Present	287,081	18.1
Male Householder, No Female Spouse Present	86,006	5.4
Total	1,584,521	100.0

Table 4:
Comparisons of the Percentage Distribution of U.S. and Massachusetts Families by Family Type, 2000

	(A)	(B)	(C)
Family Type	U.S.	Massachusetts	Massachusetts – U.S.
Married Couple	76.5	76.4	-.1
Female Householder, No Male Spouse Present	17.5	18.1	+.6
Male Householder, No Female Spouse Present	6.0	5.4	-.6

Family households also can be categorized by the presence of related children under 18 years of age in the home. At the time of the 2000 Census, only a slight majority of the state's families (50.5%) had one or more related children present in the home (Table 5). Nearly twenty-one per cent of the families had only one child present in the home, and another 20 per cent had two children living in the home. Only 10 per cent of the state's families had 3 or more related children under 18 in the home, and fewer than 1 per cent of all of the state's families had 5 or more children.

Table 5:
Distribution of Family Households in Massachusetts by the
Number of Related Children Under 18, 2000

	(A)	(B)
Number of Related Children Under 18	Number	Per Cent
0	783,773	49.5
1	327,436	20.7
2	314,752	19.8
3	119,351	7.5
4	29,744	1.9
5 or More	9,465	.6
Total	1,584,521	100.0

The mean number of persons per family household in Massachusetts during 2000 was 3.11 (Table 6). This mean family size was slightly below that of the U.S. (3.14) at the time of the 2000 Census. Mean family size in Massachusetts has declined nearly steadily and strongly since 1940 when mean family size was 3.83 (Table 6). By 1970, mean family size fell to 3.62, and it would drop to 3.11 by the time of the 2000 Census, a near 20 percent reduction since 1940. Small family size by itself should have facilitated the ability of the state to reduce poverty and low income challenges over the past few decades, given the positive statistical link between family size and the probability of a family being poor in the United States.²³ Smaller families have lower poverty incomes thresholds and FESS budgets.

²³ For example, during 1999, poverty rates of U.S. families ranged from a low of 7.6 per cent for families containing only two persons to 9 per cent for four person families, to 17 per cent for families containing six persons and to a high of 30 per cent among families with eight or more persons.

See: Garth Mangum, Stephen Mangum, and Andrew Sum, *The Persistence of Poverty in the United States*, p. 58.

Table 6:
Trends in Mean Family Size in Massachusetts, 1940 – 2000

Year	Mean Persons Per Family
1940	3.83
1950	3.73
1960	3.61
1970	3.62
1980	3.31
1990	3.15
2000	3.11

The likelihood of a child under 18 being present in the home varied by type of family and the nativity status of the family householder. Slightly less than one-half of married couple families and male-headed families with no wife present had a related child under 18 in the home in 2000 (Table 7). Among female-headed families, nearly 64 per cent had one or more children under 18 present in the home. A high fraction of these single mother families were at a high risk of poverty and dependency, and, as will be revealed below, given the high costs of housing and child care, a substantial majority of them were unable to achieve economic self-sufficiency in our state in 1999.

Table 7:
The Per Cent of Massachusetts Families with One or More
Related Children under 18 by Family Type, 2000

Family Type	Per Cent With One or More Related Children
Married Couple	47.6
Female Householder, No Male Spouse Present	63.7
Male Householder, No Female Spouse Present	48.6
All Families	50.5

During the past two decades, foreign immigration in Massachusetts has increased markedly and generated all of the population growth in the state during the 1990s.²⁴ At the time of the 2000 Census, there were somewhat over 272,000 families in Massachusetts with a

²⁴ See: (i) Andrew Sum, Ishwar Khatiwada, Kamen Madjarov, Mykhaylo Trubs'kyy, and Sheila Palma, *The Impacts of Foreign Immigration on Population Growth, the Demographic Composition of the Population, and Labor Force Growth in the Northeast Region During the 1990s Decade*, Report Prepared for Fleet Bank, Boston, 2003, (ii)

householder that was foreign born, accounting for 17 per cent of all families in the state (Table 8).²⁵ Families with a foreign born householder were less likely to be married couples than their native born counterparts (71% vs. 78%). An above average share of the families with a foreign born householder were female-headed families (22%), with children frequently being present in the home. This latter group of families was at high risk of being poor, low income, and unable to achieve economic self-sufficiency. Given the younger ages of their householders, immigrant families in Massachusetts in 2000 were more likely than their native born counterparts to contain one or more related children under 18 years of age (Table 9). Fifty-nine per cent of immigrant families had related children present in the home versus only 49 per cent of families with a native born householder. In each of our three family type categories, immigrant families were more likely to contain children. For example, 56% of married couple, immigrant families had one or more children in the home versus only 46% of married couples headed by a native born individual. Female-headed immigrant families (71%) were also more likely to contain children than their native born counterparts (61%).

Table 8:
The Percentage Distribution of Families in Massachusetts by Nativity
Status of Householder and Type of Family, 2000 (in %)

	(A)	(B)
Type of Family	Native Born	Foreign Born
Married Couple	77.7	70.6
Female Householder, No Male Spouse Present	17.2	22.3
Male Householder, No Female Spouse Present	5.1	7.0
Total Number of Families	1,312,483	272,083
Per Cent of All Families in State	82.8%	17.2%

Andrew Sum, W. Neal Fogg, et. al., *The Changing Workforce: Immigrants and the New Economy in Massachusetts*, Citizens Bank and the Massachusetts Institute for A New Commonwealth, Boston, 1999.

²⁵ Persons born in Puerto Rico, the U.S. Virgin Islands, or one of the other outlying territories of the U.S. are classified as foreign born in this analysis.

Table 9:
The Per Cent of Families in Massachusetts with One or More Related
Children under 18 by Nativity Status of Householder and Type of Family

	(A)	(B)	(C)
Type of Family	Native Born	Foreign Born	Foreign Born – Native Born
Married Couple	46.0	55.7	+9.7
Female Householder, No Male Spouse Present	61.6	71.4	+9.8
Male Householder, No Female Spouse Present	48.8	59.0	+10.2

The Race/Ethnic Origins of Family Householders

The 2000 Census questionnaires also collected data on the race/ethnic backgrounds of family members. We have organized the race/ethnic data to classify family householders into one of the following five, mutually exclusive race/ethnic groups:

- Asian, Pacific Islander, not Hispanic
- Black, not Hispanic
- Hispanic²⁶
- Other, not Hispanic²⁷
- White, not Hispanic

At the time of the 2000 Census, families with White, non-Hispanic householders accounted for 1.336 million families in the state or 84 per cent of all families (Table 10). Hispanics were the second largest race/ethnic group, representing just under 6 per cent of all families in the state, followed by Blacks (4.6%), Asians (3.3%), and other non-Hispanics (2.3%). The race/ethnic characteristics of family householders varied fairly considerably across counties of the state at the time of the 2000 Census. The share of White, non-Hispanic families varied from a low of 48% in Suffolk County, to 79% in Hampden County, to highs of 96 to 97 per cent in Berkshire and Franklin Counties (Table 11). Suffolk County was the only county in which non-Hispanic Whites represented a minority of all family householders. Black and Hispanic families together accounted for nearly 40 per cent of all families in Suffolk County in 2000 with

²⁶ Hispanic persons can be members of any race. We have excluded Hispanics from the count of all races so that the above five groups are mutually exclusive.

Asians representing another 7 per cent. A high fraction of these families headed by Asians and Hispanics were also immigrant families. Black families were heavily concentrated in just one county (Suffolk) with nearly half of all Black families of the state residing in this county. Three out of every four Hispanic families lived in one of the following four counties: Essex, Hampden, Middlesex, and Suffolk, with one of four Hispanic families living in Suffolk County.

Table 10:
The Distribution of Massachusetts Families by the Race/Ethnic
Characteristics of the Family Householder, 2000

	(A)	(B)
Race/Ethnic Characteristic	Number	Per Cent
Asian, Pacific Islander, not Hispanic	51,991	3.3
Black, not Hispanic	72,779	4.6
Hispanic	92,941	5.8
Other, not Hispanic ⁽¹⁾	36,822	2.3
White, not Hispanic	1,335,654	84.0

Note: Other category includes American Indians, Alaskan Natives, and persons of mixed race.

Source: 2000 Census of Population and Housing, 5-100 PUMS files, tabulations by author.

²⁷ The “other, not Hispanic group” includes American Indians, Alaskan Natives, and persons of mixed race. The 2000 Census was the first to allow persons to identify more than one race.

Table 11:
The Share of Families with a White, non-Hispanic
Householder in Counties of Massachusetts, 2000

County	Per Cent
Barnstable, Dukes, Nantucket	94.3
Berkshire	96.7
Bristol	90.5
Essex	85.4
Franklin	97.2
Hampden	78.7
Hampshire	88.3
Middlesex	85.7
Norfolk	90.4
Plymouth	90.3
Suffolk	48.0
Worcester	87.4
All	84.0

The Educational Attainment of the State’s Family Householders

During the past two decades, the real wages and annual earnings of Massachusetts workers have become more strongly associated with their educational attainment.²⁸ Workers with no high school diploma have lost ground, especially during the 1990s, as have year, round male workers with only a high school diploma.²⁹ Among both men and women, gains in real annual earnings of workers during the 1990s were highest among those with a Bachelor’s or higher degree.

We have used the findings from the 2000 Census long form questionnaires on the educational attainment of respondents to classify all family householders into one of six educational attainment categories, ranging from those without a regular high school diploma/GED certificate to those holding a Master’s or more advanced academic degree (Table 12). At the time of the 2000 Census, 232,000 of the state’s family householders, or nearly 15 per

²⁸ For a review of the annual earnings experiences of the state’s workers during 1989 and 1999, [See: Andrew Sum, Paul Harrington, Neeta Fogg, et. al., *The State of the American Dream in Massachusetts: 2002, ...*](#)

²⁹ Among husbands in non-elderly married couple families, median real annual earnings declined for each educational group except those with a Bachelor’s or higher degree. In fact, those with a Bachelor’s degree were only able to maintain their median real annual earnings over the decade. [See: Andrew Sum, Ishwar Khatiwada, et. al., *Family Income Developments in Massachusetts During the 1990s....*](#),

cent, lacked a regular high school diploma/GED certificate (Table 12). Just under 60 per cent of the family householders had completed at least one year of post-secondary schooling, 41 per cent held an Associate's or higher degree, and slightly more than 34 per cent obtained a Bachelor's or higher degree.

Table 12:
The Distribution of Massachusetts Families by the
Educational Attainment of the Family Householder, 2000

	(A)	(B)
Educational Attainment	Number	Per Cent
Less than 12 Years or 12 Years No Diploma/GED	232,044	14.6
High School Diploma, GED	412,191	26.0
13-15 Years, No Degree	281,858	17.8
Associate's Degree	112,547	7.1
Bachelor's Degree	302,982	19.1
Master's or Higher Degree	242,899	15.3

A comparison of the educational backgrounds of family householders in Massachusetts with those of their national counterparts reveals that Massachusetts householders were better educated than their national peers on every key comparison (Table 13). Nearly 19 per cent of the nation's family householders had failed to graduate from high school or obtain a GED certificate versus fewer than 15 per cent of the state's family heads. While close to 60 per cent of the state's family householders had completed at least one year of post-secondary schooling, only 53 to 54 per cent of their U.S. peers had done so. Over one-third (34.4%) of the state's family householders held a Bachelor's or higher degree versus only 25 per cent of the nation's family householders, and the state was characterized by a considerably higher percentage of its householders with a Master's or more advanced academic degree (15 vs. 10 per cent).

Table 13:
Comparisons of the Percentage Distribution of U.S. and Massachusetts
Family Householder, by Educational Attainment, 2000
(in %)

	(A)	(B)	(C)
Educational Attainment	U.S.	Massachusetts	Massachusetts – U.S.
Less than 12 or 12 No Diploma/GED	18.8	14.6	-4.2
High School Diploma/GED	27.6	26.0	-1.6
13-15 Years, No College Degree	21.9	17.8	-4.1
Associate's Degree	6.3	7.1	+0.8
Bachelor's Degree	15.4	19.1	+3.7
Master's or Higher Degree	10.0	15.3	+5.3

The educational attainment backgrounds of the state's family householder in each family type category were analyzed separately (Table 14). On average, family householders in married couple families were better educated than their counterparts in the two other family subgroups; i.e., female-headed families with no male spouse present in the home and male-headed families with no female spouse. Only 13 per cent of the householders in married couple families had failed to obtain a regular high school diploma or a GED certificate versus 21 per cent of the unmarried householders in female and male headed families.³⁰ Sixty-two per cent of the householders in married couple families had completed at least some post-secondary schooling versus only 47 per cent and 45 per cent of their unmarried female and male counterparts. The householders in married couple families were twice as likely as their unmarried peers to have obtained a Bachelor's or higher academic degree. At the time of the 2000 Census, just under 40 per cent of householders in married couple families held a Bachelor's or higher degree in comparison to only 18% of unmarried female, family householders and 22% of unmarried men. Among the householders in female-headed families, those family heads with related children present in the home were less well educated than their counterparts with no children under 18 in the home, placing them and their children at greater risk of poverty and other forms of income inadequacy, especially an inability to achieve economic self-sufficiency. As will be shown below, the vast majority of single mother families in the state were unable to achieve economic

self-sufficiency in 1999, and the odds against them doing so were raised considerably when they lacked any post-secondary schooling.

Table 14:
The Percentage Distribution of Family Householders by
Educational Attainment and Family Type, Massachusetts: 2000

	(A)	(B)	(C)
Educational Attainment	Married Couple	Female Householder, No Male Spouse Present	Male Householder, No Female Spouse Present
Less than 12 or 12, no Diploma	12.7	21.0	20.9
High School Diploma/GED	24.1	31.8	33.7
13-15 Years, No Degree	17.0	21.1	18.0
Associate's Degree	7.0	8.2	5.6
Bachelor's Degree	21.4	10.9	13.2
Master's or Higher Degree	17.8	6.9	8.6

The percentage distributions of family householders by educational attainment in each of five major race/ethnic groups in Massachusetts in 2000 are displayed in Table 15. The educational attainments of family householders varied considerably by race/ethnic group at both the bottom and top of the distribution. The per cent of family householders lacking a high school diploma or a GED certificate ranged from a low of slightly under 12 per cent among White, non-Hispanics to 21 to 23 per cent among Blacks and Asians, respectively, to a high of just under 41 per cent among Hispanics. The state's Hispanic family householders, a high fraction of whom were foreign born, were 3.5 times more likely to have left school without obtaining a high school diploma than their White, non-Hispanic counterparts. Asian family householders (65%) were the most likely to have completed at least one year of post-secondary schooling closely followed by White, non-Hispanics (63%) while only 32% of Hispanic householders had completed some college. Asian family householders were the most likely to have obtained a Bachelor's or higher academic degree. Approximately 53% of Asian householders held a Bachelor's or higher degree versus 37% of White, non-Hispanics, 21% of Black family householders, and only 12% of Hispanic family householders. The far more limited educational attainment of the state's Hispanic family householders, particularly when combined with limited English speaking skills, places a high fraction of them at risk of income inadequacy.

³⁰ In a married couple family, either the husband or the wife can be the householder of the family. In the 2000 Census in Massachusetts, the husband was classified as the householder in almost 80% of the cases but the share so classified did vary by the educational attainment of the wife and husband.

Table 15:
The Percentage Distribution of Massachusetts Family Householders by
Educational Attainment within Race/Ethnic Groups, 2000

	(A)	(B)	(C)	(D)	(E)
Educational Attainment	Asian Only, Not Hispanic	Black Only, Not Hispanic	Hispanic	Mixed Race, Not Hispanic	White Only, Not Hispanic
Less than 12 or 12 no Diploma	23.0	20.7	40.9	23.4	11.7
High School Diploma, GED	12.2	27.7	27.4	27.0	26.2
13-15 Years, No Degree	8.0	22.4	15.3	20.0	18.0
Associate's Degree	4.0	7.8	4.4	6.9	7.4
Bachelor's Degree	19.3	12.9	6.7	13.7	20.6
Master's or Higher Degree	33.6	8.4	5.3	9.0	15.9

As noted earlier, a rising fraction of the state's families are immigrant families, and all of the growth in the state's family households over the 1990s decade was generated by immigrant families. Given their growing demographic importance, the educational backgrounds of foreign born family householders were examined and compared to those of native born family householders in the state (Table 16). Foreign born family householders were considerably more likely than native born householders to lack a high school diploma/GED certificate. At the time of the 2000 Census, one-third of the state's foreign born family householders lacked a regular high school diploma/GED certificate versus only 11 per cent of native born family householders, a relative difference of three to one. Foreign born householders were less likely than their native born counterparts to have completed some post-secondary schooling (45 per cent vs. 62 per cent), and they were less likely to have obtained a Bachelor's or higher academic degree (28% vs. 36%). However, at the highest level of formal schooling, i.e., those with a Master's or higher academic degree, foreign born family householders matched the educational performance of their native born counterparts. Between 15 and 16 per cent of both groups of family householders held a Master's or higher academic degree (Table 16).

Table 16:
The Percentage Distribution of Massachusetts Family Householders by
Educational Attainment within Nativity Status Groups, 2000

	(A)	(B)	(C)
Educational Attainment	Native Born	Foreign Born	Foreign Born – Native Born
Less than 12 or 12, No Diploma	10.7	33.4	+22.7
High School Diploma/GED	26.9	21.9	-5.0
13-15 Years, No Degree	19.0	12.2	-6.8
Associate’s Degree	7.6	4.6	-3.0
Bachelor’s Degree	20.6	12.2	-8.4
Master’s or Higher Degree	15.2	15.7	+5

How do the educational backgrounds of the state’s foreign born and native born family householders compare to those of their respective national counterparts? To answer this question, we analyzed the educational attainment of both groups of family householders in the state and the nation. Key findings are displayed in Table 17. In 2000, a higher fraction of Massachusetts family householders were foreign born in comparison to the U.S. (17.2% vs. 13.6%). Foreign born family householders in Massachusetts were modestly better educated than their U.S. counterparts. While 32.5% of the state’s immigrant householders held an Associate’s or higher degree, only 30.3% of their national peers did so, a difference of 2.2 percentage points in favor of Massachusetts (Table 17). The educational advantage of the state’s native born family householders was considerably greater. Over 43% of all native born family householders in Massachusetts at the time of the 2000 Census held an Associate’s or higher degree versus only 32 per cent of their national counterparts. These families with well educated, native born householders tend to experience the lowest rates of income inadequacy on each of our three income measures: poverty, low incomes, and economic self-sufficiency.

Table 17:
Comparisons of the Percentage Distribution of U.S. and Massachusetts
Family Householders by Nativity Status and Selected Educational Attainment Groups, 2000

	(A)	(B)	(C)
Nativity/Educational Status	U.S.	Massachusetts	Massachusetts – U.S.
Foreign Born	13.6	17.2	+3.6
• % with Associate’s or Higher Degree	30.3	32.5	+2.2
Native Born	86.4	82.8	-3.6
• % with Associate’s or Higher Degree	31.9	43.4	+11.5

The educational attainment of family householders in Massachusetts also varied considerably across counties and Local Workforce Investment Board (WIB) service delivery area during 2000. Across counties of the state, the per cent of family householders with a bachelor’s or higher degree ranged from lows of 21% in Bristol County and 22% in Hampden County to highs of 46% to 47% in Middlesex and Norfolk Counties (Table 18). In Bristol and Suffolk Counties, close to one-fourth of the family householders lacked a high school diploma or a GED certificate while only 8% of those in Barnstable/Dukes/Nantucket and Norfolk Counties lacked a regular high school diploma/GED. Across the 16 Local Workforce Investment Board service delivery areas, the per cent of family householders with a Bachelor’s or higher academic degree ranged from lows of 17% in the Greater New Bedford WIB area and 21% in the North Central WIB to highs of 40% in Metro North and just under 57% in the Metro South/West WIB service delivery area. Under 10% of family householders in the Cape Cod, Metro South/West, and South Coastal LWIB areas lacked a high school diploma/GED while nearly one-fourth of those in Boston and 31% of those in the Greater New Bedford LWIB areas did so.

Table 18:
The Percentage Distribution of Massachusetts Families by the
Educational Attainment of the Family Householder within Each County, 2000

County	(A) Less than 12 or 12, No Diploma	(B) High School Diploma/GED	(C) Some College, Including Associate's Degree	(D) Bachelor's or Higher Degree
Barnstable, Dukes, Nantucket	7.4	24.5	31.3	36.8
Berkshire	13.1	31.7	27.1	28.1
Bristol	25.8	28.4	24.8	21.0
Essex	13.8	26.3	25.1	34.8
Franklin	12.3	32.9	26.6	28.2
Hampden	19.1	31.0	27.7	22.2
Hampshire	10.8	20.1	22.8	46.3
Middlesex	10.6	21.1	21.8	46.5
Norfolk	8.0	21.8	23.8	46.4
Plymouth	10.7	29.3	29.6	30.4
Suffolk	24.2	28.0	21.9	25.9
Worcester	16.5	28.8	26.9	27.8

Poverty Trends in Massachusetts, 1979 – 2002

Poverty rates in Massachusetts for both all persons and families have varied over the past few decades, reflecting changes in national and state economic conditions which influence the level and distribution of real incomes.³¹ The poverty rate for all persons in the Commonwealth during 1979 was 9.6%, nearly 3 percentage points below the national poverty rate for all persons in the U.S. during that year (Chart 1). During the 1980s, strong gains in jobs, wages, per capita income, and median real family incomes in the state helped lower the person poverty rate to 8.9%, more than four full percentage points below the 13.1% poverty rate for the nation. The family poverty rate of the state also declined from 7.8% to 6.7% during the decade of the 1980s. The much more limited growth of median real family income in the decade of the 1990s and the growing inequalities in worker earnings and family incomes pushed up the person poverty rate of

³¹ For a review of poverty developments in Massachusetts during the 1980s and 1990s, See: (i) Randy Albelda and Marlene Kim, *A Tale of Two Decades: Changes in Work and Family in Massachusetts, 1979-1999*, University of Massachusetts, Boston, 2002; (ii) Andrew Sum, Anwiti Bahuguna, Neeta P. Fogg, et. al., *The Road Ahead: Emerging Threats to Workers, Families and the Massachusetts Economy*, Teresa and H. John Heinz III Foundation and MassINC, Boston, 1998; (iii) Andrew M. Sum, Paul Harrington, Neeta Fogg, et. al., *The State of the American Dream in Massachusetts: 2002*, Massachusetts Blue/Cross/Blue Shield and the Massachusetts Institute for A New Commonwealth, Boston, 2002.

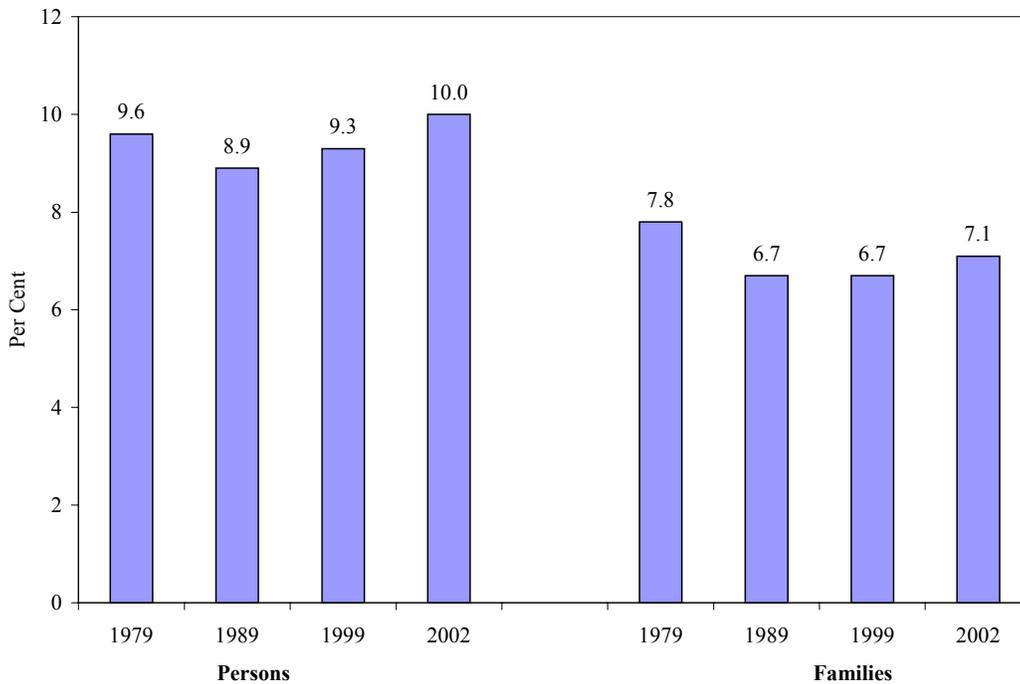
the state from 8.9% in 1989 to 9.3% in 1999 and kept the family poverty rate at 6.7%, its value at the end of the 1980s. The family poverty rate did, however, fluctuate considerably over the decade of the 1990s, rising sharply during the early years of the 1990s as the state underwent a very severe economic recession characterized by steep job losses and declining real family incomes and declining from the mid-1990s through the end of the decade as the state experienced strong job growth, rising real earnings, and rising family incomes. A separate analysis of family poverty rates from 1986-88 to 1997-99 by Albelda and Kim based on March CPS income data revealed that poverty rates of families with at least one employed adult increased from 4.8% in the late 1980s to 6.5% in the late 1990s.³² Part of this rise may have been attributable to the increased number of single mother families with some paid work experience during the 1990s that were unable to obtain annual earnings sufficiently high to raise their families above the official poverty line. A more detailed understanding of the sources of the rise in the poverty rate of working families in the 1990s is needed to guide future public policy formulation in the anti-poverty area.

From early 2001 through 2003, Massachusetts labor markets deteriorated rapidly and continuously. Wage and salary job losses mounted to over 200,000 by the end of 2003, and the state's unemployment rate more than doubled from 2.6% in 2000 to an annual average of 5.8% in calendar year 2003. Weakened labor markets pushed up poverty problems in the state. By 2002, the latest year for which poverty data are available from the CPS survey, the person poverty rate in the state had climbed to 10.0% and the family poverty rate rose to 7.1% (Chart 1).³³ The estimated rise in the family poverty rate between 1999 and 2002 is actually quite modest, given the severity of job losses in the Commonwealth over the past few years and the more than doubling of the annual average unemployment rate of the state. The poverty measures, however, do not adjust for differences in the cost of living across states or metropolitan areas. The use of a rental cost of housing adjusted poverty line sharply raised the poverty rate of our state.

³² See: Randy Albelda and Marlene Kim, *op.cit.*

³³ In the early fall of 2004, the U.S. Census Bureau will release data from the March 2004 CPS survey which will provide estimates of family incomes and the poverty status of persons and families in the state during calendar year 2003.

Chart 1:
Trends in the Incidence of Poverty Rates among Persons and Families in Massachusetts, 1979, 1989, 1999, and 2002
 (in %)



Poverty Rates of Key Demographic Subgroups of Families in Massachusetts

Knowledge of the incidence of poverty challenges among all families and demographic, socioeconomic, and geographic subgroups of families is indispensable for formulating antipoverty policies and programs within a given state. In this section, we will examine estimates of the 1999 poverty rates for a diverse array of family subgroups classified by family type, the presence of children, and the race/ethnic backgrounds, nativity status, and educational attainment of the family householder. Family poverty rates also will be presented for counties and Local Workforce Investment Board (LWIB) service delivery areas.

Nationally, family poverty rates vary considerably across family types and the presence of children in the home.³⁴ Estimates of 1999 poverty rates of Massachusetts families by family type and the presence of children under 18 are displayed in Table 19. Poverty rates of Massachusetts families varied considerably across family types, ranging from a low of 3 per cent among married

couple families to a high of 22 per cent among female-headed families. As a consequence of their rising numbers and a continued high relative incidence of poverty, female headed families in Massachusetts accounted for a majority of all poor families in 1999. Nearly 6 of every 10 poor families in the state were headed by an unmarried woman in 1999. Families headed by unmarried males accounted for another 8 per cent of all poor families in the state.

Table 19:
1999 Poverty Rates of Families in Massachusetts by
Type of Family and Presence of Related Children under 18 in the Home
(in %)

	(A)	(B)	(C)	(D)
Presence of Related Children in Home	All Families	Married Couple	Female Householder, No Male Spouse Present	Male Householder, No Female Spouse Present
All	6.7	3.0	22.0	9.4
No Related Children Under 18	3.2	2.5	6.3	5.0
One or More Related Children Under 18	10.3	3.5	31.0	14.1
One or More/None	3.2	1.4	4.9	2.8

Source: 2000 Census of Population and Housing, 5-100 PUMS files, tabulations by authors.

The incidence of family poverty challenges in our state is strongly associated with the presence of children in the home. During 1999, families with one or more related children under 18 living in the home faced a poverty rate of 10.3% versus a poverty rate of only 3.2% among families in which there were no children present in the home, a relative difference of 3.2 to one. In each of the three family type groups, those families with children were more likely to be poor than their counterparts with no children under 18 in the home. The relative size of the gap between the poverty rates of these two groups of families was especially large for female-headed families. When related children were present in the home, the poverty rate for female-headed

³⁴ See: (i) Robert Lerman, "The Impact of the Changing U.S. Family Structure on Child Poverty and Income Inequality," *Economica*, 63, No. 250, 1996, pp. S119-S139; (ii) Garth L. Mangum, Stephen L. Mangum, and Andrew M. Sum, *The Persistence of Poverty in the United States...*

families was 31% versus a rate of only 6% when there were no children under 18 in the home.³⁵ A fairly sizeable gap in poverty rates also existed between unmarried male headed families with and without children. When one or more children were living in such families, 14 per cent of these families were poor versus a poverty rate of only 5 per cent when there were no children under 18 in the home.

Families with an immigrant householder faced a poverty rate nearly three times higher than that of families with a native born householder (14.5% vs. 5.2.%) (See Table 20). Among both groups of families, poverty rates varied considerably across family types, being much higher among families headed by unmarried men and women. For example, of those families headed by a foreign born individual, poverty rates ranged from a low of 8% among married couple families to 15% for those headed by an unmarried male to a high of nearly 34% for those families headed by an unmarried woman.³⁶ The last poverty rate was four times higher than that of immigrant, married couple families and nearly seventeen times higher than that of married couple families with a native born householder, whose 1999 poverty rate was only 2.0%.

Table 20:
1999 Poverty Rates of Families in Massachusetts by
Type of Family and Nativity Status of Family Householder
(in %)

	(A)	(B)	(C)	(D)
Nativity Status Of Householder	All Families	Married Couple	Female Householder, No Male Spouse Present	Male Householder, No Female Spouse Present
All	6.7	3.0	22.0	9.4
Native Born	5.2	2.0	18.9	7.6
Foreign Born	14.5	8.3	33.7	15.4

Source: 2000 Census, 5-100 PUMS files, tabulations by CLMS.

Given the strong, positive statistical links between the annual incomes of families and the educational attainment of family heads, one would expect family poverty rates to be strongly linked to the educational attainment of the family householder. Findings in Table 21 clearly

³⁵ In most cases, the children are the own child of the householder. But, in other cases, these children can be the grandchildren, nieces, or nephews of the family householder.

³⁶ “Unmarried” does not imply single. A number of these women were previously married, but were separated, divorced, or widowed at the time of the 2000 Census. Single mothers do, however, run higher risks of being poor than their separated or divorced counterparts.

reveal this to be the case in Massachusetts. The 1999 poverty rates of families fell steadily and strongly with the level of schooling of the family householder. Seventeen per cent of families headed by an individual lacking a high school diploma/GED certificate were poor versus only 8 per cent of those with a regular high school diploma, only 4.6 per cent of those holding an Associate's degree, and fewer than 2 per cent of the families headed by a person with a Bachelor's or higher degree (Table 21). These strong associations between family poverty rates and the educational attainment of the family householder prevailed among families in each family type category. Among families headed by unmarried women, poverty rates varied from a low of under 6 per cent for those families headed by a woman holding a Master's or higher degree to a high of nearly 38 per cent for those headed by a woman lacking a high school diploma/GED certificate. During 1999, poverty in Massachusetts came close to being eliminated among the state's married couple families with a householder holding a Bachelor's or advanced degree. Only slightly more than 1 per cent of such families were poor in that year.

Table 21:
1999 Poverty Rates of Families in Massachusetts by Type of
Family and Educational Attainment of Family Householder

	(A)	(B)	(C)	(D)
Educational Attainment of Family Householder	All Families	Married Couple	Female Householder, No Male Spouse Present	Male Householder, No Female Spouse Present
Less than 12 or 12, no diploma	17.0	9.1	37.6	15.7
High School Graduate/GED	8.4	3.5	23.5	10.0
13-15 Years, No Degree	6.5	2.3	20.4	8.2
Associate's Degree	4.6	1.9	13.4	8.2
Bachelor's Degree	1.9	1.2	7.5	3.5
Master's or Higher Degree	1.7	1.3	5.8	3.8

The poverty rates of both families with related children in the home and families with no children under 18 also were strongly associated with the educational attainment of the family householder (Table 22). Among families with one or more related children in the home, poverty rates ranged from lows of 2 to 3 per cent among those families headed by a person with a Bachelor's or higher degree to nearly 14 per cent for those headed by a person with a high school

diploma but no completed years of college, to a high of just under 30 per cent for those headed by a person who failed to graduate from high school or earn a GED or its equivalent. In each educational attainment category, however, families with children present in the home were two to four times more likely to be poor as families with no related children under 18. As a consequence of these patterns, children under 18 were the most poverty prone age group in the Commonwealth at the time of the 2000 Census.³⁷

Table 22:
1999 Poverty Rates of Massachusetts Families with and Without Related Children under 18 by Educational Attainment of the Family Householder
(in %)

	(A)	(B)	(C)
Educational Attainment	One or More Children Under 18 in Home	No Related Children Under 18 in Home	Col. A/Col. B
Less than 12 or 12, No Diploma	29.5	7.6	3.9
High School Diploma/GED	13.6	3.5	3.9
13-15 Years, No Degree	9.8	2.5	3.9
Associate's Degree	6.8	1.8	3.8
Bachelor's Degree	2.7	1.1	2.5
Master's Degree or Higher	2.2	1.2	1.8
All	10.3	3.2	3.2

The poverty rates of families classified by the race/ethnic origin of the family householder are displayed in Tables 23 and 24. Family poverty rates in Massachusetts during 1999 varied markedly by race/ethnic group from a low of 4 per cent for White, non-Hispanic families to 12 per cent for Asian families to a high of 28 per cent for families headed by a person of Hispanic origin (Table 23). The poverty rate of Hispanic families in 1999 was, thus, seven times higher than that of White, non-Hispanic families across the state. In each major race/ethnic group, the poverty rates of families tended to decline steadily as the educational attainment of the family head improved.³⁸ Among Hispanic families, poverty rates declined from a high of just under 38% for those families headed by a person lacking a high school diploma/GED certificate to 21%

³⁷ For a review of the changing age structure of poverty rates in the United States, See: Garth L. Mangum, Stephen L. Mangum, and Andrew M. Sum, *The Persistence of Poverty in the United States*, especially Chapter 2.

³⁸ The association was weakest for families headed by an individual of mixed race. There was little variation in poverty rates for families in this race group headed by a person with no high school diploma to those with 1-3 years

for those with 1-3 years of college, and to a low of 8% for those holding a Bachelor's degree (Table 24). In each educational attainment group, however, poverty rates were lowest among White, non-Hispanics and highest for Hispanic families. Among Hispanic families, poverty rates also were significantly associated with family composition, the nativity status of the householder, the timing of the arrival of immigrant householders into the U.S., and their English-speaking proficiencies.³⁹

Table 23:
Poverty Rates of Massachusetts Families by Race/Ethnic Origin of Family Householder, 1999
(in %)

(A)	(B)	(C)	(D)	(E)
Asian, not Hispanic	Black not Hispanic	Hispanic	Other, not Hispanic	White not Hispanic
12.0%	18.5%	28.1%	16.5%	4.1%

of college, but they did fall sharply for those with a Bachelor's or higher degree. Such families accounted for only 1 to 2 per cent of all families in the state in 2000.

³⁹ A multivariate statistical analysis of the determinants of poverty among immigrant families in Massachusetts in 1999 reveals the importance of each of these factors on the likelihood of being poor or low income, See: Andrew Sum, Johan Uvin, Ishwar Khatiwada, *The Human Capital Skills of Immigrants and their Labor Market Success*, forthcoming, Fall 2004 from the Massachusetts Institute for a New Commonwealth.

Table 24:
Poverty Rates of Families by the Educational Attainment of the
Family Householder in Each Major Race/Ethnic Group, 1999
(in %)

	(A)	(B)	(C)	(D)	(E)
Educational Attainment	Asian, not Hispanic	Black, not Hispanic	Hispanic	Mixed Race	White, not Hispanic
Less than 12 or 12, No Diploma	27.7	32.9	37.6	17.4	9.4
High School Diploma/GED	15.7	22.8	28.9	19.3	5.6
13-15 Years, No Degree	13.5	16.9	21.1	16.2	4.4
Associate's Degree	7.0	10.6	16.0	11.6	3.4
Bachelor's Degree	5.6	4.5	8.2	9.9	1.4
Master's or Higher Degree	4.4	2.6	9.8	8.2	1.2

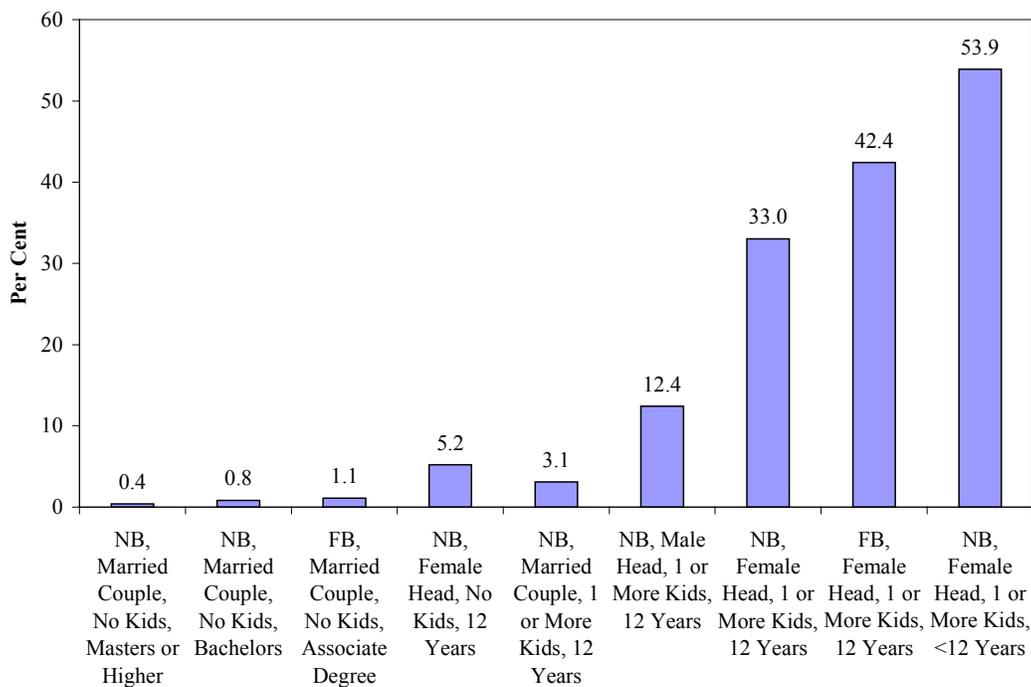
The structure of family poverty rates for immigrant and native born families by the educational attainment of the family householder is displayed in Table 25. As noted earlier, families headed by a foreign born individual were nearly three times more likely than families with native born householders to have been poor (14.5% vs. 5.2%). For both groups of families, the incidence of poverty challenges falls steadily and strongly with the level of educational attainment of the family householder. Among immigrant families, poverty rates ranged from a high of 22 per cent for those families headed by a person who lacked a high school diploma/GED certificate to 10% for those with an Associate's degree, and to lows of 5% for those with a Bachelor's or more advanced degree. In each educational attainment category, however, immigrant families were typically two to three times more likely than native born families to be poor (Column D, Table 25).⁴⁰ Over time, immigrant families have come to account for a rapidly rising share of all poor families in the Commonwealth. At the time of the 2000 Census, immigrant families represented only 17 per cent of all families in the state, but they accounted for over 37 per cent of all poor families.

The preceding analyses have shown that the poverty rates of families in Massachusetts were associated with family type, the presence of children in the family, and an array of characteristics of the family householder, including their race/ethnic origin, nativity status, and educational attainment. These analyses focused on one or at most two characteristics at a time.

⁴⁰ The smallest relative difference prevails for those families headed by an individual who lacked a high school diploma. For such families, the immigrant/native born differential in family poverty rates was only 1.6 times.

To provide richer insights into the structure of family poverty rates, we have estimated family poverty rates for a selected set of families ranging from among the lowest to the highest poverty rates in the state. Estimates are displayed in Chart 2. The wide range in these poverty rates is extraordinary. Married couple families with no children under age 18 in which the householder was native born and held a Bachelor's or more advanced degree encountered poverty rates of less than one per cent. In essence, poverty has been eliminated among such families. Even among immigrant families with no children, families headed by a person with an Associate's degree faced a poverty rate of only one per cent. Even when children are present in the home of married couple, native born families, poverty rates are quite low (3%) as long as the family householder graduated from high school.

Chart 2:
1999 Poverty Rates of Massachusetts Families in Selected Family Types and
With a Householder with Selected Combinations of Characteristics
 (in %)



As the upper end of the distribution of poverty rates, families headed by unmarried women with children present in the home faced very high poverty rates, especially when they failed to complete any years of post-secondary schooling. Female headed families with 1 or more children in the home faced a poverty rate of 33% even when the householder was native

born and held a high school diploma. This poverty rate would rise to 42% when the householder was foreign born and would rise further to 54% when the head of the family was native born but lacked a high school diploma. The poverty rate for this latter group of families was 135 times higher than that for married couple families with no children under age 18 who were headed by a native born person with a Master's or higher degree. These two groups of families occupy economic worlds that are light years away from each other.

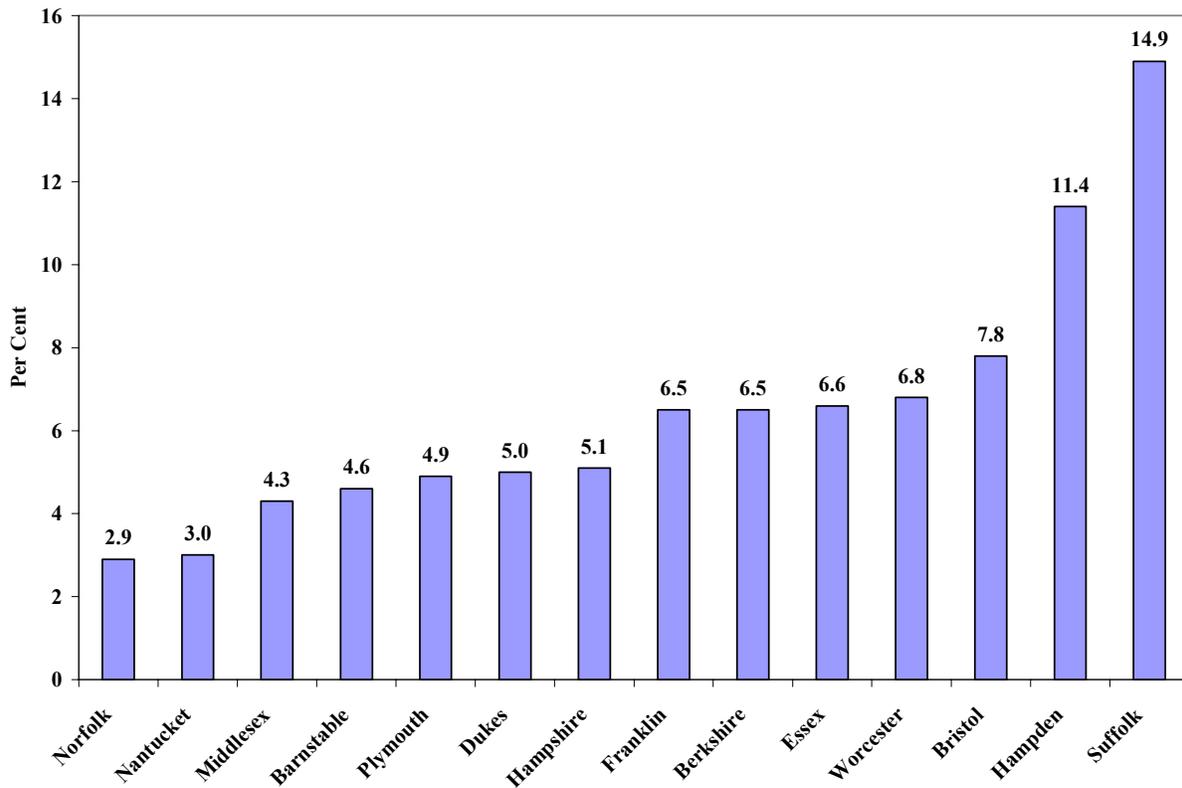
The Geographic Structure of Family Poverty Rates in 1999

Given the large numbers of sample cases from the 2000 Census PUMS files, it is possible to produce statistically reliable estimates of family poverty rates for a variety of sub-state areas. In this section, we present and assess findings on estimated family poverty rates for counties and LWIB service delivery areas across the state.⁴¹

Family poverty rates for counties across the state in 1999 are displayed in Chart 3. There is a very high degree of variation in these poverty rates across counties of the state, ranging from lows of 3% in Norfolk and Nantucket counties to highs of 11.4% in Hampden County and nearly 15% in Suffolk County. Over the past decade, there has been a growing divergence in family poverty rates across counties of the state, with Bristol, Hampden, and Suffolk Counties moving further above the state average while Barnstable, Franklin/Hampshire and Plymouth counties moved further below the state average. This stands in contrast to the state's experience during the 1980s when family poverty rates declined in all counties of the state, with the exception of Hampden County.

⁴¹ The March CPS surveys provide poverty data for the state as a whole and for a few metropolitan areas, but there are no geographic identifiers for counties or most large cities. The CPS sample is meant to be statistically representative of the state as whole rather than for any sub-state area.

Chart 3:
1999 Poverty Rates of Families in Massachusetts by County
 (in %)



The poverty rates of families by family type in each county of Massachusetts during 1999 are displayed in Table 25. In each county of the state, family poverty rates were lowest among married couple families and highest among families headed by unmarried women. With the exception of Suffolk County, poverty rates of married couple families were quite low, ranging from 1.4% in Norfolk County to 4.1% in Hampden County. In contrast, the poverty rates of families headed by unmarried women were in the double digits in every county except Norfolk County and were 20 per cent or higher in 7 of the 12 counties. In every county, except Suffolk County, the poverty rates of female headed families exceeded those of married couple families by multiples of six to ten times.⁴²

⁴² In Suffolk County, the multiple was slightly under four to one, but 30 per cent of female headed families were poor in Suffolk County during 1999.

Table 25:
Poverty Rates of Families by Type of Family in Massachusetts Counties, 1999
(in %)

County	(A) Married Couple	(B) Male Headed	(C) Female Headed	(D) Female Headed/ Married Couple
Barnstable, Dukes, Nantucket	2.3	8.1	17.3	7.5
Berkshire	2.6	6.2	26.6	10.2
Bristol	3.6	12.2	25.3	7.0
Essex	2.9	11.6	22.2	7.7
Franklin	2.4	11.3	23.0	9.6
Hampden	4.1	11.8	32.4	7.9
Hampshire	2.2	6.3	14.0	6.4
Middlesex	2.1	6.1	15.1	7.2
Norfolk	1.4	4.1	8.3	5.9
Plymouth	2.0	9.6	18.8	9.4
Suffolk	7.9	13.0	29.6	3.8
Worcester	3.2	8.8	22.9	7.2

In each county of the state, family poverty rates were strongly associated with the educational attainment of the family householder, declining steadily and strongly with the amount of formal schooling completed by the householder. The degree of variability across counties in poverty rates of families was still fairly high for families with a householder that completed 12 or fewer years of schooling. For example, among families with a head who failed to graduate from high school, poverty rates varied from a low of 8.5 per cent in Norfolk County to highs of 22 to 26 per cent in Hampden and Suffolk Counties where a high fraction of such less educated families were headed by immigrants. In each county except Franklin County, the poverty rates of families with a householder lacking a high school diploma were seven to twelve times higher than the poverty rates of families headed by an individual with a Bachelor's or higher academic degree.⁴³

Family poverty rates also were estimated for the 16 local service delivery areas administering employment and training programs under the Workforce Investment Act (WIA). The cities and towns comprising each of these 16 areas were matched as closely as possible with the PUMA areas identified on the 2000 Census public use files. The poverty rates of families in

⁴³ In every county with the exception of Suffolk County, the poverty rates of families headed by an individual with a Bachelor's or higher degree were in the one to two per cent range.

these 16 LWIB areas varied over a fairly wide interval, ranging from lows of 2.5% in the Metro South/West LWIB and 3.7% in the South Coastal LWIB to highs of 11% in the Greater New Bedford and Hampden areas and just under 16% in the Boston LWIB service delivery area, which consists of the city of Boston.

Similar to findings for the state as a whole and for each of the counties, poverty rates of families in the 16 LWIB areas varied quite widely by family type and the educational attainment of the family householder (Tables 26 and 27). In each of the 16 LWIB areas, poverty rates were lowest among married couple families followed by families with unmarried male householders and highest among families headed by unmarried women. Poverty rates for female headed families were in the double digit range in each of the 16 LWIB areas and were 20% or higher in 10 of the 16 areas. The poverty rates of female headed families were 6 to 10 times higher than those of married couple families in 14 of the 16 LWIB areas across the state.

The poverty rates of families in each of the 16 LWIB areas also were strongly correlated with the educational attainment of the householders in these families. In 15 of the 16 LWIB areas, the poverty rates of families declined steadily and strongly with the educational attainment of the family householder (Table 27). As was the case for counties, however, there was a high degree of variation across LWIBs in the family poverty rates of families headed by a person who had no formal schooling beyond high school. For example, among families with a householder who had graduated from high school but did not complete any post-secondary schooling, poverty rates ranged from lows of 4 to 5 per cent in the Franklin/Hampshire, Metro South/West, and South Coastal areas to highs of 13 per cent in the Hampden and Boston LWIB areas. In 15 of the 16 LWIB areas, the poverty rates of families headed by an individual with a Bachelor's or higher degree were in the 1 to 2 per cent range. In every LWIB area, family poverty challenges were overwhelmingly concentrated among families with a householder who had no formal schooling beyond high school.

Table 26:
Per Cent of Families with Incomes below the Poverty Line in
Local Workforce Investment Board Service Delivery Areas, 1999
(in %)

	(A)	(B)	(C)	(D)
Local Workforce Investment Boards	Married Couple	Male Headed	Female Headed	Total
Berkshire	2.6	6.2	26.6	7.2
Boston	8.0	13.0	30.0	15.8
Bristol	2.9	9.7	21.7	6.6
Brockton	2.3	15.0	19.7	6.2
Cape Cod	2.3	8.1	17.3	4.7
Central Mass.	3.3	8.6	22.6	7.0
Franklin/Hampshire	2.3	9.5	19.4	5.2
Greater Lowell	2.3	8.9	22.2	6.1
Greater New Bedford	5.1	17.5	31.6	11.0
Hampden	4.1	11.8	32.4	11.0
Lower Merrimack	3.2	17.6	28.8	9.2
Metro North	3.2	6.9	15.6	5.5
Metro South/West	1.3	5.2	10.9	2.5
North Central	2.7	9.5	23.8	7.0
South Coastal	1.9	3.7	13.6	3.7
Southern Essex	2.7	7.6	17.7	5.5
Total	2.9	9.4	22.0	6.7

Table 27:
Poverty Rates of Families by Educational Attainment of the Family Householder in
Massachusetts Local Workforce Investment Board Service Delivery Areas, 1999
(in %)

	(A)	(B)	(C)	(D)
County	Less than High School Diploma	High School Graduate/GED	Some College Including Associate's Degree	Bachelor's Degree or Higher
Berkshire	17.7	8.2	6.0	2.2
Boston	27.9	18.5	13.9	4.5
Bristol	12.4	6.8	5.8	1.3
Brockton	16.7	6.8	4.2	1.8
Cape Cod	12.0	6.9	4.8	1.6
Central Mass.	16.8	7.8	5.4	2.4
Franklin/Hampshire	11.1	5.3	7.0	1.8
Greater Lowell	15.9	8.1	4.1	1.0
Greater New Bedford	16.9	11.5	9.3	2.1
Hampden	22.3	12.9	8.4	1.9
Lower Merrimack	23.9	10.5	7.5	2.0
Metro North	13.6	6.7	5.2	2.2
Metro South/West	8.6	4.2	3.2	1.1
North Central	13.6	7.5	6.1	1.7
South Coastal	9.0	5.1	3.8	1.1
Southern Essex	14.5	6.9	4.8	2.0
Total	16.9	8.3	5.9	1.8

The Incidence of Low Income Challenges among Massachusetts Families, 1999

Our second set of income inadequacy measures for families is based on the “low income” standards utilized in recent years by a number of poverty and welfare reform researchers across the country, especially at the Urban Institute in Washington, D.C. As noted earlier, the definition of a “low income” family is a family that has an annual, money income less than two times the poverty line for a family of its given size and age composition. The poverty lines are those used by the federal government in identifying the annual number of poor families in the United States.

Estimates of the per cent of families that were low income in Massachusetts during 1999 are displayed in Table 28 for all families and for an array of demographic and socioeconomic subgroups of families. At the time of the 2000 Census, 17 per cent of all families in the state

would have been classified as low income (Table 28). This estimated incidence of low income challenges among families in the state was basically identical to the per cent of families with low income challenges in the state at the time of the 1990 Census (Chart 4).⁴⁴ The state, thus, made no progress over the entire decade in reducing the incidence of low income problems among families.⁴⁵ Following 2000, the deterioration in state labor markets has pushed an increased number of families below the low income thresholds. By 2002, the per cent of the state's families with money incomes below the low income threshold had risen to 19% (Chart 4).

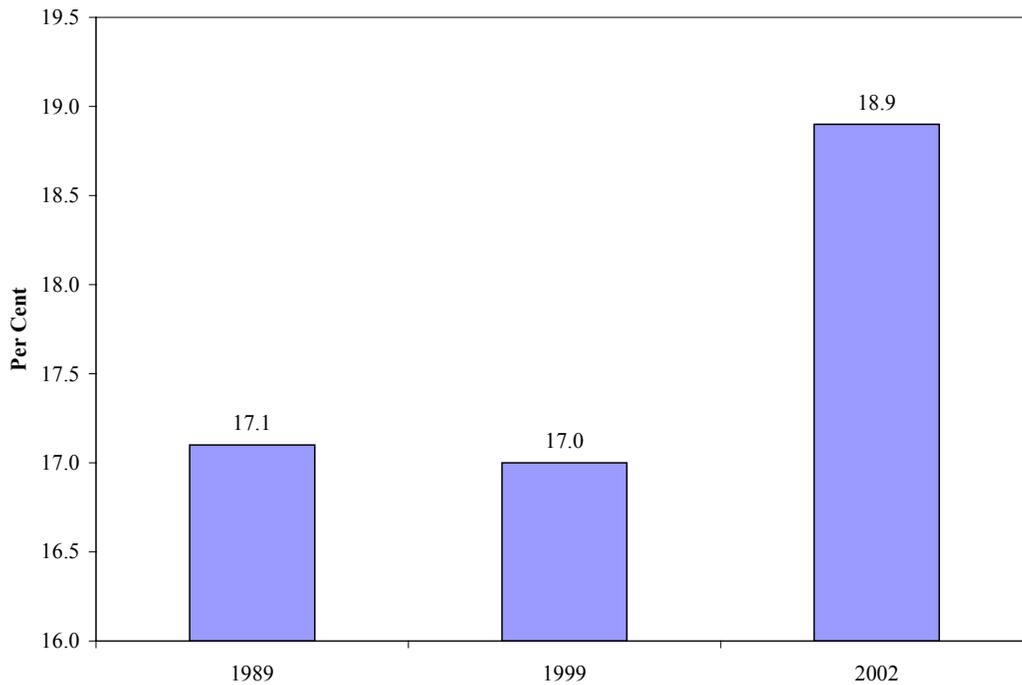
Table 28:
Per Cent of Massachusetts Families with Incomes Less Than Two
Times the Poverty Line by Type of Family and Householder Characteristics, 1999

Group of Families or Characteristic of Householder	Per Cent Low Income
All Families	17.0
Married Couple	10.5
Female Householder, No Male Spouse	42.7
Male Householder, No Female Spouse	24.3
Asian	26.9
Black	38.2
Hispanic	53.1
White, Not Hispanic	12.4
Native Born	13.9
Foreign Born	32.7
Less than 12 Years or 12 Years, No Diploma	37.8
High School Diploma/ GED	22.0
13 – 15 Years, No Degree	16.8
Associate's Degree	13.4
Bachelor's Degree	6.2
Master's or Higher Degree	4.9

⁴⁴ For an earlier comparison of poverty and low income problems in Massachusetts during 1989 and 1999, See: Andrew Sum, Mykhaylo Trubs'kyy, Kamen Madjarov with Meredith Franks; *Poverty and Other Income Inadequacy Problems Among Massachusetts Families in 2000: Implications for Workforce Development Policy*, Center for Labor Market Studies, Prepared for the Commonwealth Corporation, Boston, July, 2003.

⁴⁵ As was true of poverty problems, the fraction of the state's families with low income problems increased during the recessionary environment of the early 1990s then declined as the economy improved from 1993 through the end of the decade. The gains in the latter part of the decade only offset the losses during the early years of the decade.

Chart 4:
Trends in the Incidence of Low Income Challenges Among
Massachusetts Families, Selected Years, 1989 to 2002



A comparison of the findings for Massachusetts with those for the nation and the other 49 states revealed that our state fared better than most other states on this income inadequacy measure. Nationally, 26% of all families would have been classified as low income during 2003, and the 19% incidence of low income challenges in the state ranked 5th lowest during that year, with the state tied for Connecticut. As was the case for the poverty income thresholds, however, the low income thresholds are not adjusted for differences in the state cost of living, especially housing. The state’s favorable rating on this measure would clearly diminish if cost-of-living adjustments were taken into account.⁴⁶ The problem in making such adjustments, however, is that there are no uniform cost-of-living indices for states.

The per cent of Massachusetts families with low incomes in 1999 varied quite markedly by family type (Table 29 and Chart 5). Only 1 of 10 married couple families in the state were categorized as low income in 1999 versus 1 of every 4 families headed by an unmarried male and 43 of every 100 families headed by an unmarried woman. As was true for the structure of family

⁴⁶ For example, adjustments of the nation’s and state’s CPS-based family poverty rates in 1999 for taxes, EITC tax credits, and rental costs reduce Massachusetts’ poverty ranking from the middle of the pack to 8th highest in the nation. See: Andrew Sum, Paul Harrington, Neeta Fogg, et. al., *The State of the American Dream in Massachusetts 2002*, Chapter 7.

poverty rates, the incidence of low income challenges among Massachusetts families varied markedly by the presence of children in the home. Over 23% of families with one or more children under 18 in the home were low income versus only 11% of the families with no child under 18 (Table 29). Families with children were, thus, 2.2 times more likely to be low income than their counterparts with no related children in the home. In each family type category, those families with a related child under 18 in the home were more likely to be low income, with the relative gaps larger among those families headed by an unmarried individual. Among married couple families, the incidence of low income problems among families with children was only 1.3 times as high as that of their counterparts with no children. In contrast, the incidence of low income challenges among female headed families with children was more than three times as high as that of their peers with no children under 18 in the home (57% vs. 18%). Just under 57 per cent of female headed families with children and 35 per cent of male headed families with children were low income in 1999.

Chart 5:
Per Cent of Massachusetts Families with Incomes Less than
Two Times the Poverty Line by Type of Family, 1999

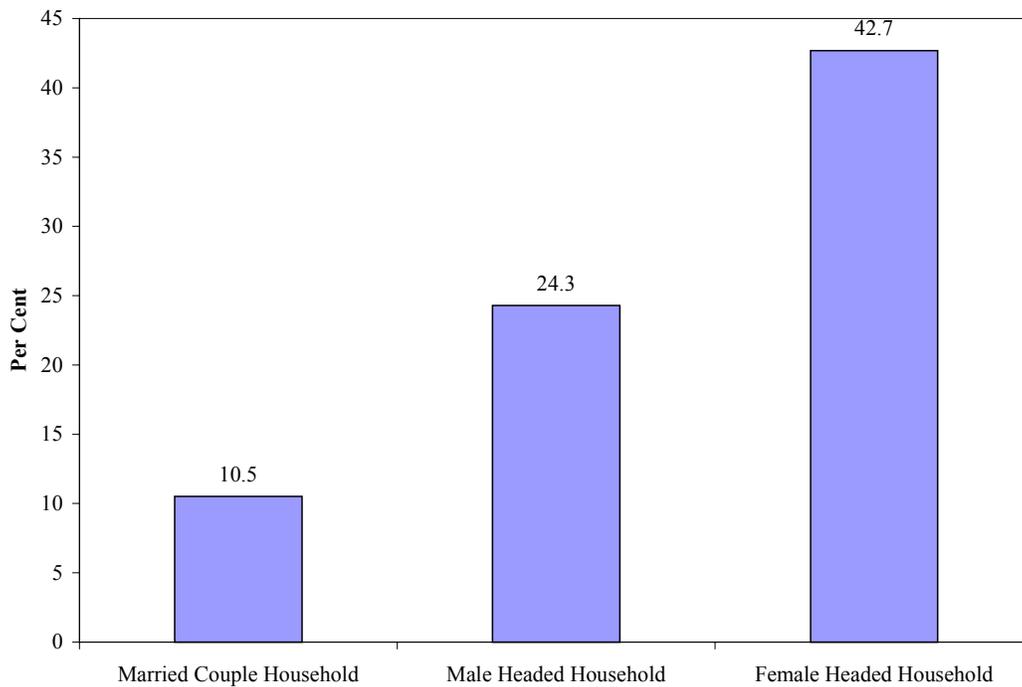
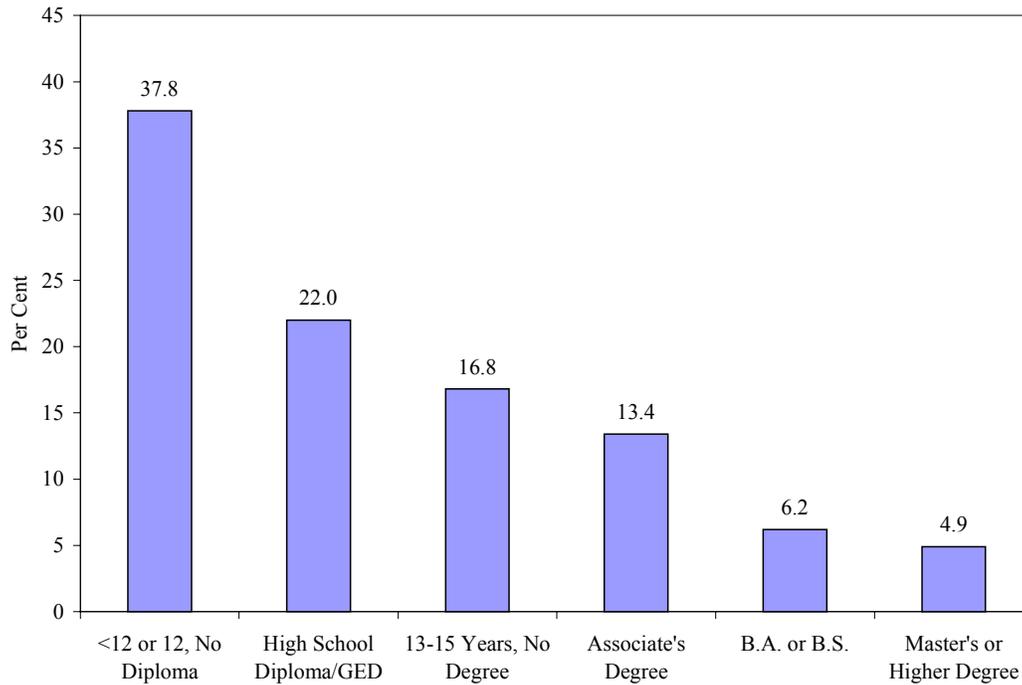


Table 29:
Per Cent of Massachusetts Families with Incomes below Two Times the
Poverty Line by Type of Family and Presence of Related Children in the Home

	(A)	(B)	(C)	(D)
Presence of Related Children	Married Couple	Female Head, No Male Spouse	Male Head, No Female Spouse	All Families
None	9.3	18.1	14.4	10.8
1 or More	12.0	56.8	34.9	23.4
1 or More/None	1.3*	3.1*	2.4*	2.2*

The incidence of low income challenges among Massachusetts families was strongly associated with the educational attainment of the family householder (Table 28 and Chart 6). Nearly 38 per cent of the families with a householder lacking a high school diploma were low income in 1999. The incidence of such low income challenges declined steadily and sharply with additional years of formal schooling of the householder, falling to 22 per cent for families headed by high school graduates, to 13 per cent for Associate degree holders, and to a low of 5 per cent for householders with a Master's or higher degree. Families headed by a person lacking a high school diploma were nearly eight times more likely to be low income than those families headed by an individual with a Master's or higher degree.

Chart 6:
Per Cent of Massachusetts Families with Incomes Less Than Two Times the
Poverty Line by Educational Attainment of the Family Householder, 1999



The strong relationships between the educational attainment of the family householder and the low income status of families prevailed among both families with children and families without children during 1999 (Table 30). Among families with one or more related children in the home, the incidence of low income challenges ranged from a high of 54% among those families with a householder lacking a high school diploma, down to 32% for those headed by a high school graduate, down further to 19% for those with an Associate's degree, and to a low of 6% for those families headed by an individual with a Master's or more advanced degree. The relative size of the difference between the incidence of low income challenges among families with children with the least and best educated householders was more than 9 to 1. In each educational attainment subgroup, however, families with children in the home were more likely to be low income than their peers without children. In 5 of the 6 cases, the relative differences were two to three times (Table 30).

Table 30:
Per Cent of Massachusetts Families with Incomes below Two Times the Poverty Line by
Presence of Children in Home and Educational Attainment of the Family Householder

	(A)	(B)	(C)
Educational Attainment	No Related Kids Under 18	1 or More Related Kids Under 18	Col. B/Col. A
Less than 12 or 12, no diploma	25.5	54.3	2.1
High School Diploma/GED	12.8	31.9	2.5
13-15 Years, No Degree	7.5	24.4	3.3
Associate's Degree	5.9	19.2	3.3
Bachelor's Degree	4.2	7.8	1.9
Master's or Higher Degree	4.0	5.9	1.5
All	10.8	23.4	2.2

Estimates of the percentage share of families experiencing a low income problem by the race/ethnic origin of the family householder are presented in Tables 28 and 31. Similar to our earlier findings on the structure of family poverty rates, the incidence of low income challenges among families during 1999 varied considerably across race/ethnic groups. The per cent of state families with an income below twice the poverty line ranged from a low of 12% for White, non-Hispanic, to 27% among Asian families, and to a high of 53% among Hispanic families. Families headed by individuals from race/ethnic minority groups were two to four times more likely to experience a low income challenge than their White, non-Hispanic peers.

Among families in each major race/ethnic group, the likelihood that a family was low income during 1999 was strongly associated with the educational attainment of the family householder (Table 31). In each of the five race/ethnic groups, the share of families with an income less than two times the poverty line fell consistently with the educational attainment of the family householder. For example, among Black non-Hispanic families, 55% of those with a householder lacking a high school diploma were low income. The share of low income Black families declined to 48% if the family head was a high school graduate, to 31% if he/she had an Associate's degree and to below 10% if the family head held a Master's or higher academic degree. Within each of the six educational attainment subgroups, the incidence of low income challenges was lowest among White, non-Hispanic families. For example, among families headed by a high school graduate with no years of post-secondary schooling, the incidence of low

income challenges ranged from a low of 17% among White, non-Hispanics to a high of nearly 56% among families with a Hispanic householder.

Table 31:
Per Cent of Massachusetts Families with Incomes below Two Times the
Poverty Level by Educational Attainment and Race/Ethnic Origin of Householder

	(A)	(B)	(C)	(D)	(E)
Educational Attainment	Asian	Black, not Hispanic	Hispanic	Mixed Race	White, not Hispanic
Less than 12 or 12, No Diploma	54.2	54.8	65.9	43.3	27.5
High School Diploma/GED	40.3	48.0	55.8	40.3	17.1
13-15 Years, No Degree	29.3	38.1	45.8	35.8	12.8
Associate's Degree	25.9	31.4	38.4	27.3	10.5
Bachelor's Degree	13.2	14.4	16.5	23.2	5.1
Master's or Higher Degree	10.4	9.7	22.9	19.6	3.7
Total	26.8	38.3	53.3	35.0	12.5

Given the younger ages, more limited schooling, and English language problems of many immigrant family householders, one would expect that immigrant families would encounter low income challenges with a higher frequency than families with a native born householder. Findings in Table 28 and in Table 32 bear out this expectation. Overall, nearly one-third of the state's families with an immigrant householder were low income during 1999 versus only 14 per cent of families with a householder that was native born, a relative difference of nearly 2.4 times. Still, it should be noted that as we move from poverty to low income challenges among families the gap between native born and foreign born families gets smaller. Immigrant families accounted for 37% of all poor families in the state during 1999, but only 33% of low income families, and as will be shown below, their share of all families with an income inadequacy challenge will decline even further as we move to the Family Economic Self-Sufficiency standards.

The incidence of low income challenges among both immigrant and native born families declines steadily and strongly as the educational attainment of the householder improves (Table 32). Among immigrant families, just under 46 of every 100 families headed by a person lacking a high school diploma/GED were low income versus 38 of every 100 with a high school diploma, 28 of every 100 with an Associate's degree, and only 12 of every 100 with a Master's or higher degree. In every educational attainment subgroup, immigrant families were more likely to be low

income than native born families. The relative size of these differences did, however, vary by educational attainment subgroup, ranging from multiples of 1.4 for those families lacking a high school diploma to highs of 2.9 and 3.8 for those families with a Bachelor’s or Master’s or higher degree, respectively. Increased English-speaking proficiencies and longer stays in the U.S. of immigrant householders do significantly reduce the likelihood that they will be low income families.

Table 32:
Per Cent of Massachusetts Families with Incomes below Two Times the
Poverty Level by Educational Attainment and Nativity Status of the Householder

	(A)	(B)	(C)
Educational Attainment	Native Born	Foreign Born	Foreign/Native
Less than 12 or 12, No Diploma	32.7	45.9	1.4
High School Diploma/GED	19.4	37.8	1.9
13-15 Years, No Degree	14.6	33.2	2.3
Associate’s Degree	11.6	27.8	2.4
Bachelor’s Degree	5.1	15.0	2.9
Master’s or Higher Degree	3.3	12.5	3.8
Total	13.9	32.7	2.4

Geographic Variations in the Incidence of Low Income Challenges among Families in Massachusetts

The availability of the PUMA geographic identifiers on the Census 2000 PUMS files enabled us to estimate the incidence of low income problems among families in counties and Local WIB service delivery areas across the state. Findings on the incidence of low income challenges among families in Massachusetts by family type across counties of the state are displayed in Table 33. Variations in the incidence of low income challenges of families across counties were quite substantial in 1999, ranging from lows of 8.5% in Norfolk County and 11.6% in Middlesex County to highs of 24% in Hampden County and 32% in Suffolk County. The relative size of the gap in the incidence of low income challenges between Suffolk County and Norfolk County was nearly four to one, a very substantial degree of geographic variation. Suffolk County, which is dominated by the city of Boston but includes the cities of Chelsea, Revere, and Winthrop, has become characterized by an extraordinarily high degree of family

income inequality in recent years. It has become home for some of the poorest and richest families in the state.

The incidence of low income problems among families in each county of the state in 1999 varied quite widely by type of family and the educational attainment of the family householder (Tables 33 and 34). In each county, married couple families were characterized by the lowest incidence of low income challenges while unmarried female headed families faced the most severe degree of low income challenges, with 40% or more of these families having incomes below 200% of the poverty line in 8 of the 12 counties.

Table 33:
Per Cent of Families with Incomes Below 200% of the
Poverty Line by Type of Family in Massachusetts Counties, 1999

	(A)	(B)	(C)	(D)
County	Married Couple	Male Headed	Female Headed, No Male Spouse Present	Total
Barnstable, Dukes, Nantucket	10.2%	20.8%	39.7%	14.7%
Berkshire	12.7%	32.5%	50.4%	20.6%
Bristol	14.1%	35.5%	50.2%	21.9%
Essex	9.8%	27.3%	43.1%	16.8%
Franklin	12.6%	29.3%	50.0%	18.9%
Hampden	13.5%	24.5%	56.7%	24.0%
Hampshire	8.1%	14.1%	35.9%	12.7%
Middlesex	7.6%	17.4%	31.4%	11.6%
Norfolk	6.2%	13.2%	21.8%	8.5%
Plymouth	8.5%	21.7%	38.4%	13.8%
Suffolk	21.4%	31.1%	52.6%	32.1%
Worcester	11.5%	26.2%	44.9%	18.2%
Total	10.5%	24.3%	42.7%	17.0%

Estimates of the incidence of low income challenges among families by the educational attainment of the family householder by county are displayed in Table 34. As was true for the state as a whole, the per cent of families with an income below 200 per cent of the poverty line declined consistently as the educational attainment of the family householder improved. Families headed by an individual lacking a high school diploma/GED were typically four to eight times more likely to be low income than families headed by a person with a bachelor's or higher

degree.⁴⁷ In each of the twelve counties, at least 25 per cent of the families headed by a high school dropout were low income, in 10 of these counties 30 per cent of such families were low income, and in four of the twelve counties at least 40 per cent of the families headed by high school dropouts were classified as low income. Over time, families headed by individuals lacking any post-secondary schooling are finding it increasingly difficult to obtain an income high enough to enable them to avoid low income challenges.

Table 34:
Per Cent of Families with Incomes Below 200% of the Poverty Line by
Educational Attainment of Family Householder in Massachusetts Counties, 1999

County	(A) Less than High School Diploma	(B) High School Graduate/GED	(C) Some College, Including Associate's Degree	(D) Bachelor's or Higher Degree
Barnstable, Dukes, Nantucket	30.9%	20.5%	15.8%	6.8%
Berkshire	40.8%	25.8%	19.3%	6.4%
Bristol	34.6%	24.4%	19.1%	6.1%
Essex	42.3%	20.1%	15.6%	5.0%
Franklin	29.1%	20.8%	20.9%	10.3%
Hampden	43.6%	26.7%	21.0%	7.2%
Hampshire	29.6%	13.2%	15.1%	7.2%
Middlesex	29.5%	17.1%	12.2%	4.6%
Norfolk	25.1%	12.4%	9.6%	3.2%
Plymouth	32.1%	19.2%	10.9%	4.8%
Suffolk	51.3%	37.9%	27.3%	12.1%
Worcester	38.2%	21.9%	15.2%	5.6%
Total	37.6%	21.9%	15.7%	5.6%

Estimates of the per cent of families with low incomes during 1999 in each of the sixteen LWIB service delivery areas are displayed in Table 35. The incidence of low income problems among families varied quite widely across these 16 service delivery areas, ranging from lows of 8% in the Metro South/West Service Delivery Area and 11% in the South Coastal area to highs of 27% in the Greater New Bedford Area and nearly 33% in the city of Boston. The pattern of low income challenges by family type in each of the LWIB areas closely approximated that for the state as whole. In each of these LWIB areas, low income challenges were lowest among married couple families followed by unmarried male householder families and highest among

⁴⁷ The sole exception to this pattern was Franklin County where the relative difference in the incidence of low income problems between families headed by high school dropouts and four year college graduates was slightly less

families headed by unmarried women. In 12 of the LWIB's, 40 per cent or more of the families headed by women were low income, and in six of the 12 LWIB areas 50 per cent or more of such families were low income. In each LWIB, the incidence of low income challenges was strongly linked to the educational attainment of the family householder.

Table 35:
Per Cent of Families with Incomes Below 200 Per Cent of the Poverty Line in
Local Workforce Investment Board Service Delivery Areas, 1999

	(A)	(B)	(C)	(D)
Local Workforce Investment Boards	Married Couple	Male Headed	Female Headed	Total
Berkshire	12.7%	32.5%	50.4%	20.6%
Boston	21.2%	29.9%	53.5%	32.7%
Bristol	12.6%	32.0%	45.8%	19.4%
Brockton	10.6%	30.6%	39.9%	17.1%
Cape Cod	10.2%	20.8%	39.7%	14.7%
Central Mass.	11.0%	24.9%	43.6%	17.4%
Franklin/Hampshire	10.9%	23.7%	44.3%	16.5%
Greater Lowell	8.7%	28.0%	43.1%	15.6%
Greater New Bedford	17.3%	42.9%	57.9%	26.7%
Hampden	13.5%	24.5%	56.7%	24.0%
Lower Merrimack	11.2%	38.8%	51.7%	21.0%
Metro North	10.1%	19.4%	31.8%	14.4%
Metro South/West	5.4%	13.0%	24.0%	7.8%
North Central	13.4%	30.1%	49.2%	21.1%
South Coastal	7.6%	12.7%	31.1%	11.3%
Southern Essex	9.0%	19.7%	37.3%	14.4%
Total	10.5%	24.3%	42.7%	17.0%

Estimates of the Incidence of Economic Self-Sufficiency Challenges among Massachusetts Families, 1999

Our third set of income inadequacy measures is based on the Family Economic Self-Sufficiency standards of the Women's Educational and Industrial Union and Wider Opportunities for Women. Unlike the federal poverty income thresholds and the low income thresholds discussed above, the FESS standards do vary across counties and other sub-state areas primarily based on differences in the costs of rental housing and child care, which are both treated

than three to one.

explicitly in the FESS standards.⁴⁸ The family standards also take into consideration the impacts of payroll taxes, state and federal income taxes, Earned Income Tax Credits, and Child Care Tax Credits in determining the gross amount of income needed per month or per year by a family of a given size and age composition to purchase the consumption items that comprise the family budget.

As noted earlier, the imputed Family Economic Self-Sufficiency standards for families in Massachusetts in 1999 were well in excess of the official poverty income thresholds of the federal government, typically exceeding them by multiples of 2.7 to 3.4 and higher.⁴⁹ The relative sizes of these differences do vary across the state's counties. To illustrate the absolute and relative sizes of the differences between the FESS and poverty income thresholds for selected subgroups of families in the city of Boston and in Berkshire County, we have displayed the values of the poverty income thresholds and FESS standards for five types of households during 1999 (Table 36). As can be seen, in each of these five cases in Boston and four of the five cases in Berkshire County, the FESS standard exceeded the poverty line by a multiple of at least two to one, and in the four "family" cases in Boston the FESS standard exceeded the federal government's poverty income thresholds by multiples of 2.7 to 3.4.⁵⁰ The relative size of the differences between these two standards are greatest when preschool children are present in the home since market-purchased child care costs loom large in the FESS standards for such families, but are ignored by the poverty income thresholds. For example, the FESS standard for a city of Boston family containing one adult, plus one preschooler (ages 3-5), and one school-aged child (6-12) was equal to \$45,865 versus a poverty line of only \$13,423, a relative difference of 3.41 times.⁵¹ In Berkshire County, with its lower cost of housing and child care, the FESS budget standard for the same family was \$31,677, versus a poverty line of \$13,423, a relative difference of 2.36 times.

Table 36:

⁴⁸ The 1997 Self-Sufficiency Income Standards for Massachusetts families are described in the following publication: Jean Bacon, Laura Henze Russell and Diana Pearce, *The Self-Sufficiency Standard: Where Massachusetts Families Stand...*

⁴⁹ We refer to these budgets as "imputed" budgets since they were based on weighted averages of the 1997 and 2003 Self-Sufficiency Budgets for families in Massachusetts where the 1999 estimate was based on 1/3 of the difference between the 1997 and 2003 budgets.

⁵⁰ The "family cases" refer to those cases where the budget standard is being developed for a family household rather than a single individual.

⁵¹ If the two children were an infant and preschooler, the FESS standard would have been \$51,344 or 3.82 times as high as the poverty threshold for such a family.

Comparisons of the 1999 FESS Standards for Selected Groups of Families in the City of Boston with the Official Poverty Income Thresholds of the Federal Government

Family Type	(A) FESS Standard	(B) Poverty Line	(C) FESS Standard/ Poverty Line
Boston			
One person (under 65) ¹	17,713	8,667	2.04
Two adults, no children	29,790	11,156	2.67
One adult plus one preschooler (3-6)	36,202	11,483	3.15
One adult plus one preschooler plus one school age child (6-12 years old)	45,865	13,423	3.41
Two adults plus one preschooler plus one school aged child	46,580	16,895	2.76
Berkshire			
One person (under 65)	13,651	8,667	
Two adults, no children	22,958	11,156	
One adult plus one preschooler (3-6)	26,830	11,483	
One adult plus one preschooler plus one school age child (6-12 years old)	31,677	13,423	
Two adults plus one preschooler plus one school aged child	36,763	16,895	

Note: ¹In the federal poverty income thresholds, there are separate poverty income thresholds for single individuals under age 65 and over 65. The poverty line for a person under 65 is about \$700 higher.

Given the large differences between the FESS standards and the official poverty income thresholds in the city of Boston, Middlesex and Norfolk Counties and other areas across the state, one might question whether the standards exaggerate what might be needed for families to “get by” in Boston and elsewhere in the state. Findings of a number of previous studies designed to obtain the public’s views on how much income is needed by families to “avoid poverty” or “to get by with the basics” indicate that the public would generally support the FESS standards. Nationally, a number of household surveys over the past 15 years have solicited the public’s views on how much income would be needed by a given family to either avoid poverty or to achieve a minimum standard of living.⁵² Responses to such questions yielded average responses that ran from 130 to 200 per cent of the federal government’s poverty lines, with higher values in

⁵² For a review of findings of these national surveys, See: Garth L. Mangum, Stephen L. Mangum, and Andrew M. Sum, *The Persistence of Poverty in the United States*, especially pp. 91-92.

large metropolitan areas of the Northeast and West. In the Boston Low Income Neighborhood Survey in 1987-88, households were asked to identify the amount of annual income that a household of their size in the city of Boston would “need at a minimum to avoid being poor.”⁵³ The median estimates of the amounts of income needed in each family size to avoid poverty substantially exceeded the federal government’s poverty lines. On average, the median response to this question was 2.9 times as high as the existing poverty income thresholds of the federal government. As the authors noted in their final report to the Massachusetts Executive Office of Economic Affairs, “the federal government’s income guidelines for determining the poverty status of city of Boston families seem to be a world apart from the perceptions of the adult residents of these low income neighborhoods”.⁵⁴

Findings of a more recent state household survey of 604 registered voters on economic issues, welfare reform, and the income needs of families in Massachusetts shed additional insight on the public’s subjective assessments of family income requirements.⁵⁵ The telephone survey administered by the Opinion Dynamics Corporation for the United Way of Massachusetts and the Women’s Educational and Industrial Union included the following question:

“In general, how much income per year do you think a family of four needs to make ends meet in Massachusetts – not to be rich – but just to get by adequately?”

The responses to this question ranged from a low of less than \$10,000 to highs of \$80,000 or more.⁵⁶ Of those responding to this question, the median income required by families fell in the \$45,000 to \$50,000 category, with an interpolated median value of \$46,250. This income level was equal to 2.6 times the poverty line for a four person family in the U.S. during calendar year 2000. The Massachusetts public’s perceptions of the amount of income needed by a four person family in Massachusetts “to get by adequately” comes quite close to most of the FESS standards for 3 person and 4 person families in the state. Findings of the 2001 household survey

⁵³ See: Andrew Sum, Neeta Fogg, Julio Goicoechea, et. al., *White Poverty in Boston*, The Boston Persistent Poverty Project, The Boston Foundation, Boston, 1993. A similar question asked of respondents in a set of higher income suburban communities in Boston yielded even higher multiples of the existing poverty line.

⁵⁴ See: Andrew Sum, Tom Maher, Ted Murphy, et. al. *Income and Employment Problems in Low Income Neighborhoods: The Persistence of Family Poverty Amidst Increasing Affluence in Boston and Massachusetts*, Report Prepared for the Executive Office of Economic Affairs, Massachusetts, 1999.

⁵⁵ Opinion Dynamics Corporation, *A Survey of Voter Attitudes: Welfare, Self-Sufficiency, and Making Ends Meet*, A Joint Project of the United Way of Massachusetts Bay and the Women’s Educational and Industrial Union, Boston, April 2001.

⁵⁶ Only 1% of the respondents cited \$10,000 or less while 71% cited \$80,000 or more.

also revealed that a clear majority of respondents (64%) agreed that the Self-Sufficiency Standards should be adopted by the state as a replacement for the federal government’s poverty guidelines for a four person family.

In recent years, there have been several other attempts to develop family budgets for use in measuring economic hardship among families across the nation. One of these methodologies developed by researchers at the Economic Policy Institute in Washington, D.C. involves calculations of basic family budgets.⁵⁷ According to the authors of this study, “Basic family budgets measure the income a family requires to afford basic needs for a safe and decent standard of living. The family budget methodology tabulates the cost of every major budget item a family needs, including housing, child care, health care, food, transportation and taxes, based on the composition of the family and where the family lives.”⁵⁸

The study calculated the values of these basic budgets for selected family types for more than 400 areas around the country, including 12 areas in Massachusetts. The values of these basic budgets for three types of families in the Boston metropolitan area are displayed in Table 37 together with the Boston PMSA’s rank among all areas in the country and the size of that basic budget relative to the federal government’s poverty line for a family of that size and age composition. For each of these three family types, the values of the basic budgets were substantially in excess of the poverty lines for these same families with the multiples ranging from 2.95 to 3.33. The Boston metropolitan area’s basic budgets ranked 2nd to 4th highest in the country among more than 420 areas. Findings for the Lowell and Pittsfield metropolitan area yielded basic budgets that were typically 2.6 to 3.0 times the size of the federal government’s poverty lines for families of these given sizes and age composition. The values of the Basic Family Budgets are quite close to the Family Economic Self-Sufficiency standards for these same Massachusetts families.

Table 37:
Values of EPI Basic Family Budgets for Three
Types of Families in the Boston Metropolitan Area, 1999

	(A)	(B)	(C)	(D)
	EPI Basic	Poverty	EPI Basic Budget/	Boston’s Rank

⁵⁷ See: Heather Boushey, Chauna Brocht, et. al., *Hardship in America: The Real Story of Working Families*, Economic Policy Institute, Washington, D.C., 2001.

⁵⁸ *Ibid*, p. 7.

Family Type	Budget	Line	Poverty Line	Among 420+ Areas
One Parent, One Child	\$38,290	\$11,483	3.33	4 th highest
One Parent, Two Children	\$44,490	\$13,423	3.31	4 th highest
Two Parents, Two Children	\$49,795	\$16,895	2.95	2 nd highest

Methodologies for Estimating the Incidence of Family Economic Self-Sufficiency Challenges among Massachusetts Families and Unrelated Individuals

The task of estimating the number and share of Massachusetts families with annual incomes below the Family Economic Self-Sufficiency standards is a far more complex one than estimating the number of poor or low income families. This added complexity is due to several factors. First, the poverty income thresholds of the federal government do not vary by geographic area across the country. Every family of a given size and age composition in the U.S. is assigned the same poverty threshold regardless of where they live. In contrast, the Family Economic Self-Sufficiency standards for families in Massachusetts vary across counties and cities in the state to reflect local differences in housing and child care costs. A separate set of family budgets must be established for each county.⁵⁹

Second, the U.S. Census Bureau has calculated a set of poverty income thresholds for all family size and age composition combinations and for unrelated individuals. The Census 2000 PUMS files contain the results of U.S. Census Bureau calculations as to whether a given family's income is below the poverty income threshold for a family of their size and age composition. Children under 18 in a family are treated the same regardless of their age. FESS standards have been calculated for only a subset of families in each county although the subset of families does cover a majority of all families in the state. To determine the Family Economic Self-Sufficiency status of the remaining families (there are more than 120 family combinations excluding the distinction of classifying those children under 6 into infant and preschool categories), we utilized a methodology for generating equivalence scales that was developed by the National Academy of Science's Panel on Poverty and Family Assistance.⁶⁰ An equivalence scale allows one to determine how to adjust the required incomes for families of varying sizes and age compositions. We have used to the Self-Sufficiency Incomes for the base group families developed by WEIU and applied the results from the equivalence scales to derive FESS standards for all other family

⁵⁹ In the case of Dukes and Nantucket counties, they share the same budgets as families in Barnstable County.

types. A detailed description of our methodology is presented in Appendix B of this paper, together with the estimates of the 1999 FESS standards for 42 different types of families in each county of the state. To simplify the numbers of calculations required, we treated every child under 6 as a preschool child rather than an infant in determining the family's income requirements. Since infants' child care costs are typically quite higher than those of preschool children, our estimating methodology yields slightly conservative estimates of the number of families unable to achieve Economic Self-Sufficiency. To increase the public's and policymakers' acceptance of our findings, we believed it to be better to err on the conservative side than to exaggerate the problem. In addition to estimating the number and percent of families with a FESS deficit, we also generated estimates of the incidence of FESS inadequacy challenges among all unrelated individuals in the state; i.e., persons living on their own or with others to whom they are not related. We also produced estimates for an array of demographic and socioeconomic subgroups of unrelated individuals. A separate section will be devoted to a discussion of the findings on the incidence of FESS deficits among unrelated adults in the state.

Estimates of the Number and Per Cent of Families with an Income below the Self-Sufficiency Standard: 1999

Our estimates of the number and per cent of Massachusetts families with a 1999 income below the FESS standards are displayed in Table 38 and Chart 7. Findings are presented for families in four family types and for the state as a whole. Statewide, there were estimated to be 417,323 families with a 1999 income below the FESS standards, representing nearly 27 per cent of all families in the state. The incidence of such income inadequacy challenges did vary quite widely across different types. As expected, given our earlier findings on the structure of poverty and low income problems among the state's families, the incidence of FESS deficit challenges was lowest among those families in which no children under 18 were present in the home and was highest among single parent families with one or more children under 18. Among families only containing adults, slightly over 19 per cent had an income below the self-sufficiency standard for families of their given size.⁶¹ Among families with 2 adults and 1 or more related children under age 18, the incidence of FESS deficit challenges increased to 24% and rose to just

⁶⁰ See: Constance F. Citro and Robert T. Michael (Editors), *Measuring Poverty: A New Approach....*

⁶¹ For those families with no children under 18, separate FESS standards are calculated for families with 2 adults through 7 adults. Families with 8 or more adults (less than 1 per cent of all families in this category) were assigned the same FESS standard as a family with 7 adults.

under 30% when three or more adults were present in the home.⁶² The incidence of FESS deficits was most severe among single parent families, a group including both single mothers and single fathers. Nearly two-thirds of such families had 1999 incomes below the FESS standard, and the mean size of their deficits was quite substantial, exceeding \$21,400.⁶³

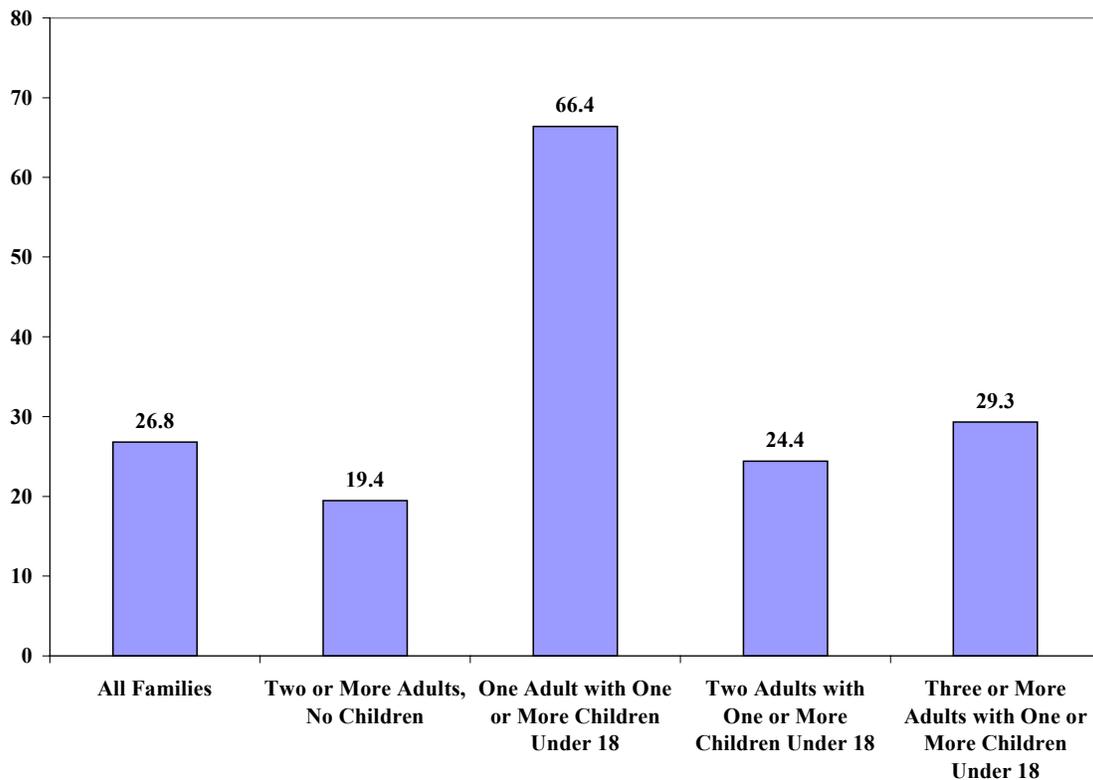
Table 38:
Estimates of the Number and Per Cent of Massachusetts
Families with an Income below the Self-Sufficiency Standard by Family Type, 1999

Family Type	(A)	(B)
	Number of Families With a FESS Deficit	Per Cent of All Families in Group
2 or More Adults, No Children Under 18	149,314	19.4
1 Adult, 1 or More Children Under 18	109,767	66.4
2 Adults with 1 or More Children Under 18	121,455	24.4
3 or More Adults With One or More Children Under 18	36,787	29.3
Total, All Families	417,323	26.8

⁶² In most cases, families with 2 adults were married couple families; however, in other cases the family could have been a single parent family with a child 18 or older or another adult relative in the home.

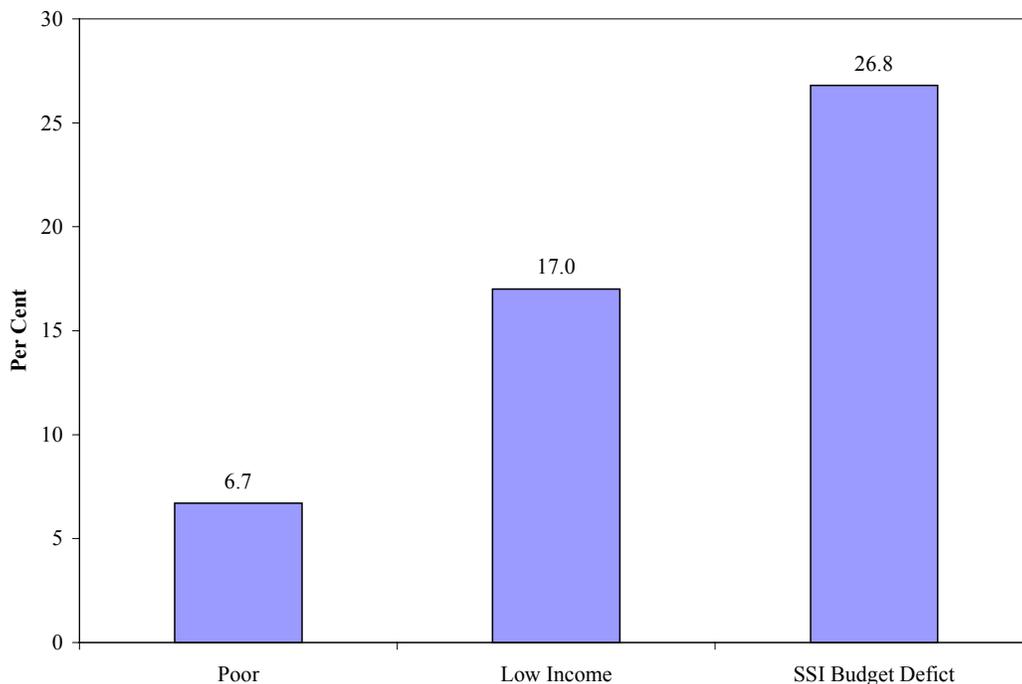
⁶³ The FESS deficit for a given family is the difference between the FESS budget for that family and its annual pre-tax income in 1999, excluding Earned Income Tax Credits and Child Care Tax Credits. The mean FESS deficit for single parent families in Massachusetts during 1999 was \$21,433.

Chart 7:
Per Cent of Families in Massachusetts with a Family Income Below the
Self-Sufficiency Level, All and by Type of Family, 2000



Comparisons of the incidence of FESS deficit challenges among Massachusetts families in 1999 with the poverty rates and incidence of low income problems among families are presented in Chart 8. Fewer than 7 per cent of the state’s families were poor in 1999 versus 17 per cent with a low income challenge and just under 27 per cent with an income below the economic self-sufficiency standards. Thus, there were four times as many families experiencing a FESS deficit as there were poor families in the state during 1999. In every county of the state, the number of families with a FESS deficit was substantially higher than the number of poor families, with the size of these multiples ranging from lows of 2.4 and 2.8 in Hampden and Franklin counties to highs of six to seven times in Hampshire, Norfolk, and Plymouth Counties. For example, during 1999, Norfolk County had a family poverty rate of only 2.9%, the lowest poverty rate in the state. Yet, during that same year, 20 per cent of all families in Norfolk County were estimated to have incomes below the FESS standard thresholds for that county. Clearly, families in Norfolk County were far more successful in obtaining incomes above the poverty line than they were in achieving economic self-sufficiency during 1999 even though they had the second lowest incidence of FESS deficit challenges during that year.

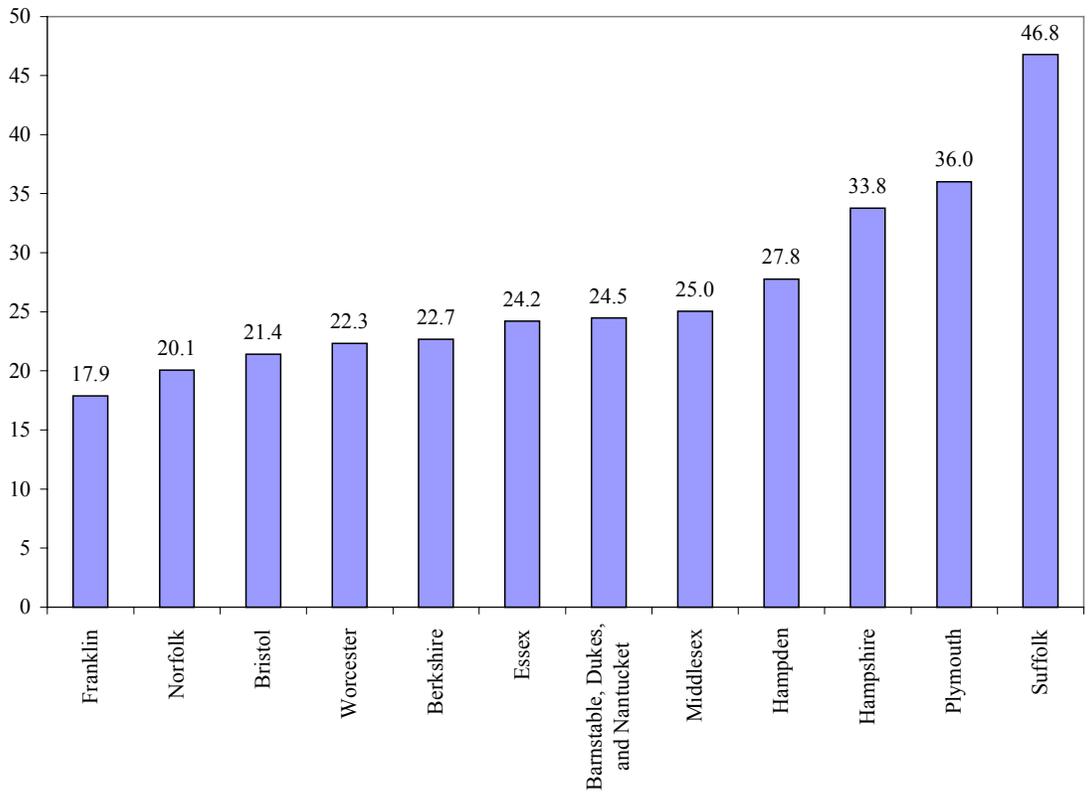
Chart 8:
Comparisons of the Per Cent of Massachusetts Families with Incomes Below the
Poverty Line, the Low Income Threshold, and the Family Economic Self-Sufficiency Standards,
1999



Estimates of the fraction of families in each county of the state with incomes below the self-sufficiency standard in 1999 are displayed in Chart 9. Variations in the incidence of family FESS deficit challenges are quite substantial, ranging from lows of 18% in Franklin County and 20% in Norfolk County to highs of 36% in Plymouth County and 47% in Suffolk County.⁶⁴ Eleven of the state’s 12 counties had an incidence of FESS standard deficit challenges of 20 per cent or higher, 5 of the 12 counties had an incidence of 25 per cent or higher, and in three of the counties (Hampshire, Plymouth, and Suffolk) over one-third of the families had incomes below the Self-Sufficiency standards. Suffolk County had the highest incidence of FESS deficit challenges for each of the four family type subgroups and Plymouth ranked second or third highest on each of these measures. Franklin and Norfolk Counties tended to rank near the bottom of the distribution of FESS deficit challenges for most family types.

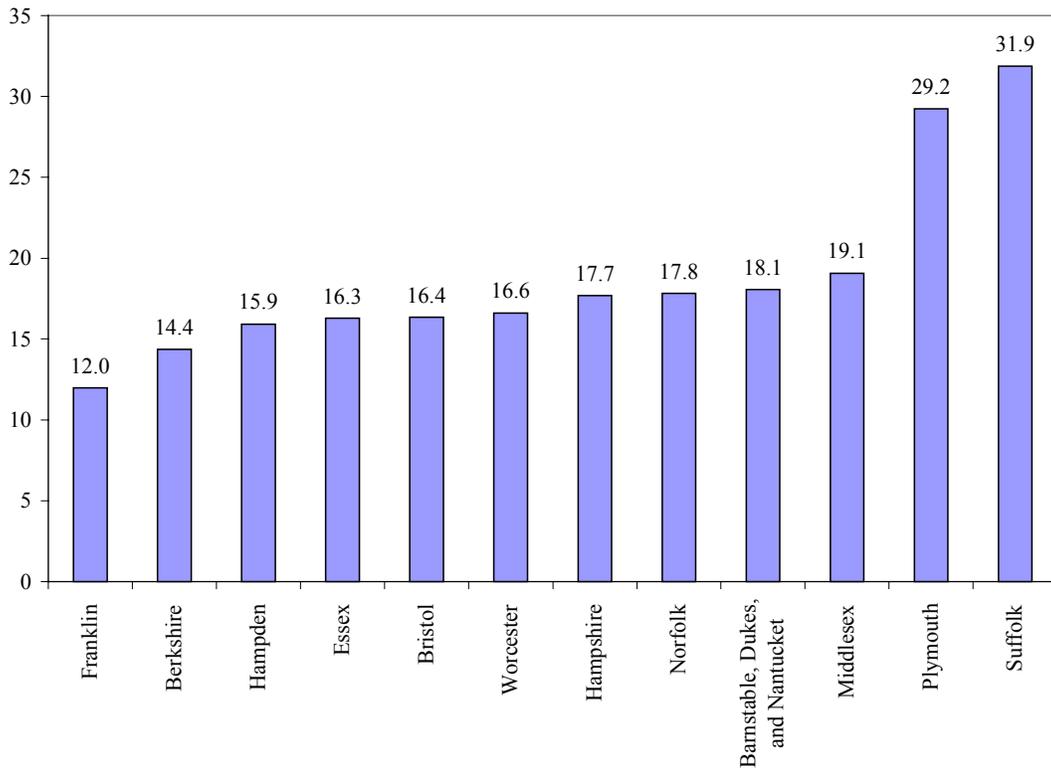
Chart 9:
Percent of Families in Massachusetts with a Family Income
Below the Self-Sufficiency Level, by County, 2000

⁶⁴ Some counties, such as Bristol County, do somewhat better than expected on this measure, given their relatively high rates of family poverty and low income problems. The Self-Sufficiency Income budgets for Bristol County are typically 20 to 30 per cent less than those for the city of Boston due to lower housing and child care costs.



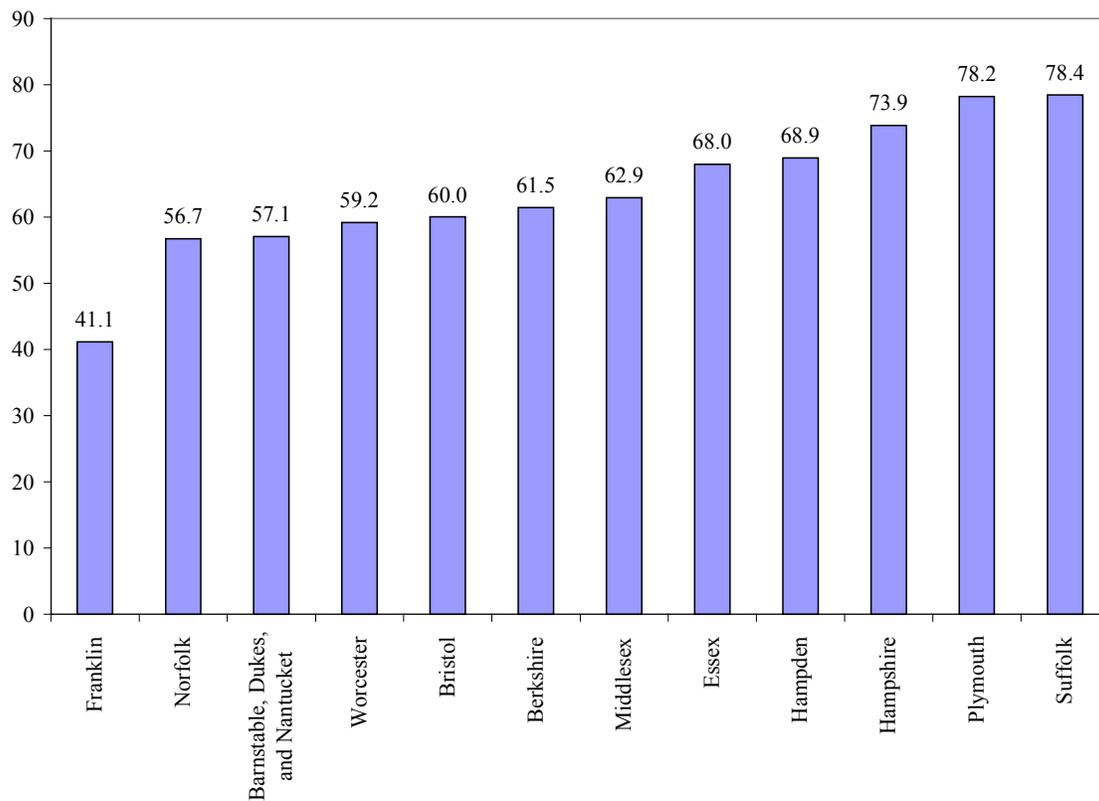
For each of our major family type groups, there was a fairly high degree of dispersion in the incidence of FESS deficit challenges across counties. Even among families where no children were present in the home, the incidence of FESS deficit challenges ranged from a low of 12% in Franklin County to highs of 29% in Plymouth and 32% in Suffolk Counties, a relative difference of 2.7 times from top to bottom (Chart 10). This group of families was the most successful in avoiding FESS deficit challenges in each county of the state. In 10 of the 12 counties, fewer than 20 per cent of “adult only” families were unable to achieve economic self-sufficiency.

Chart 10:
Percent of Families in Massachusetts with No Children
Under 18 with a Family Income below the Self-Sufficiency Level, by County, 2000



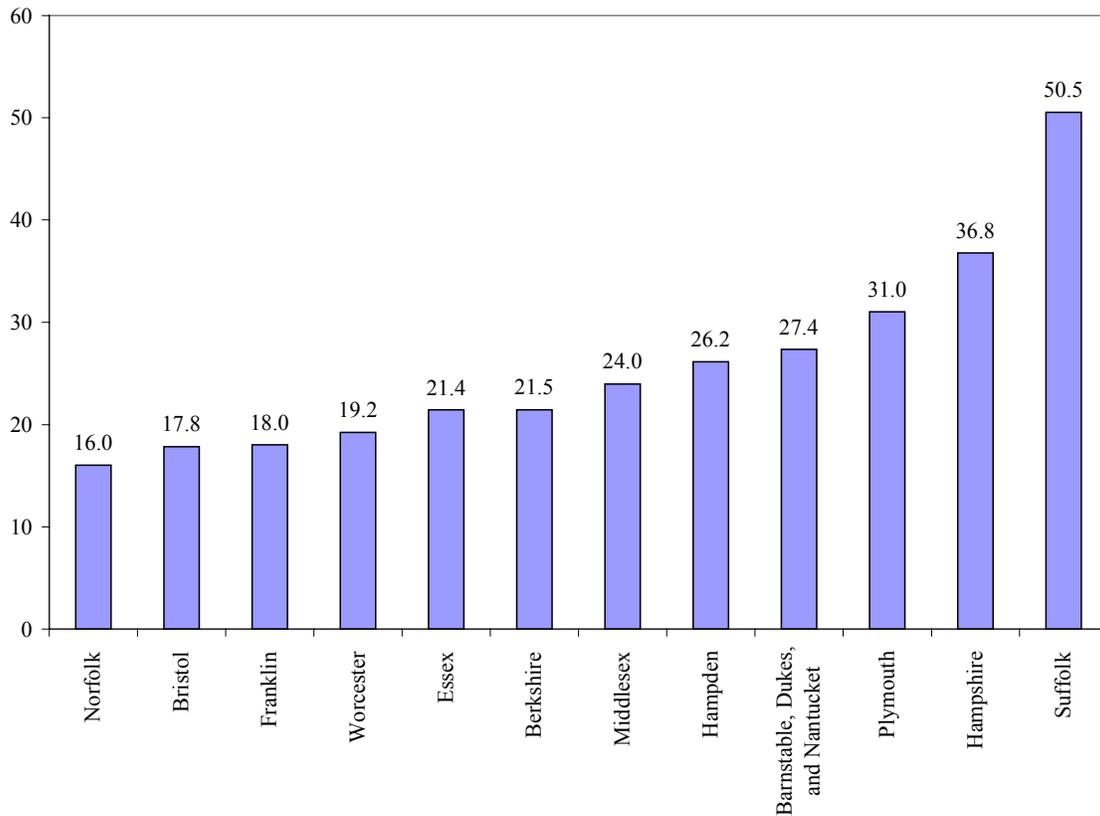
As noted earlier, single parent families were characterized by the highest incidence of FESS deficit challenges, with two-thirds of all such families in the state encountering such a problem in 1999. When the analysis is confined to single mother families, the incidence of such challenges statewide rises to 70 per cent. Single parent families in each county of the state faced a high risk of being unable to obtain an income above the Self-Sufficiency Standard in 1999 (Chart 11). In eleven of the 12 counties, a majority of single parent families had a FESS deficit during 1999, and in 8 of the 12 counties 60% or more of the single parent families were unable to achieve economic self-sufficiency.

Chart 11:
Percent of Families in Massachusetts with One Adult and
One or More Children under 18 with a Family Income below the Self-Sufficiency Level, 2000



Two parent families with children were considerably more successful than single parent families in achieving economic self-sufficiency during 1999, but even here variation in the incidence of such challenges was quite substantial across counties. The share of two adult families with children that could not achieve economic self-sufficiency ranged from lows of 16% in Norfolk County and 18% in Bristol and Franklin Counties to a high of 50% in Suffolk County (Chart 12). The pattern of results by family type clearly suggests that a high fraction of children in Massachusetts were living in families with income levels below the Self-Sufficiency standard in 1999. Our estimates indicate that 34% of all children under 18 were residing in families with incomes below the Self-Sufficiency Standard in 1999, with the share rising to 86% for children in single parent families. The per cent of children living in families with FESS deficits varied considerably across counties of the state, ranging from lows of 22% in Norfolk County and 23% in Franklin County to a high of 60 percent in Suffolk County.

Chart 12:
Percent of Families in Massachusetts with Two Adults and One or More Children Under 18 with a Family Income below the Self-Sufficiency Level, by County, 2000

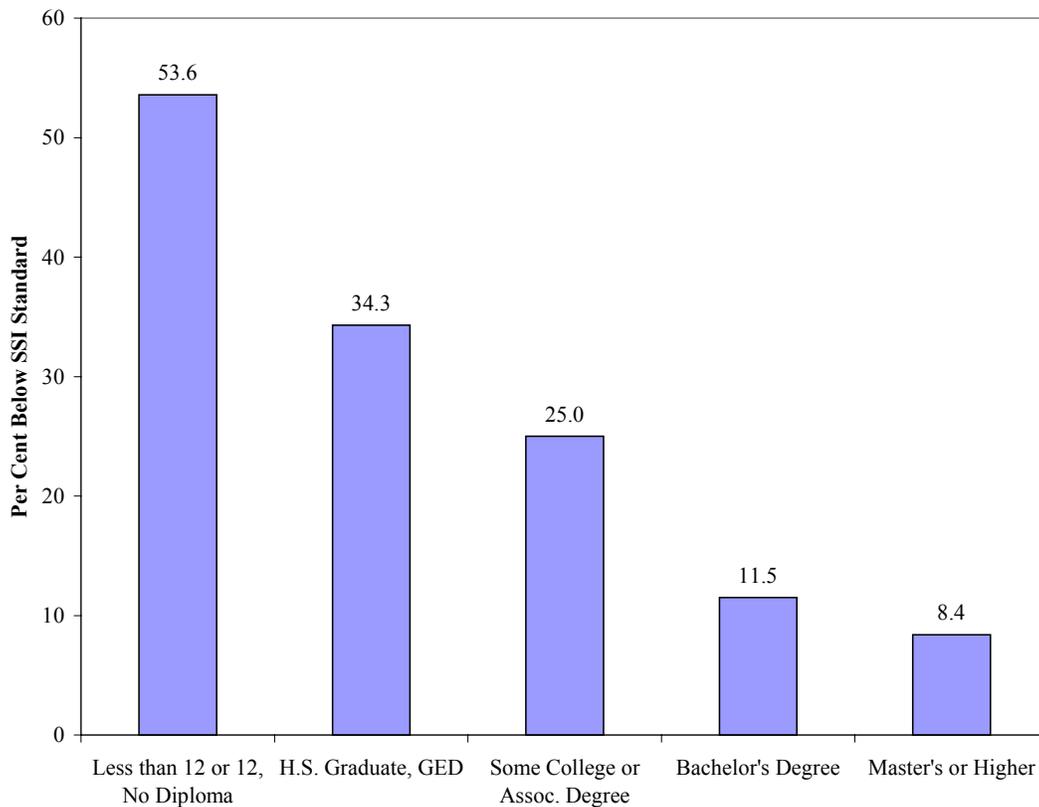


Family Economic Self-Sufficiency Deficits and the Educational Attainment and Native or Immigrant Status of the Family Householder

Our preceding analyses of poverty and low income challenges among Massachusetts families revealed the key role played by the educational attainment of the family householder in determining the ability of the family to avoid the most severe income inadequacy challenges. To determine the strength of the association between the educational attainment of the family householder and the ability of families to achieve economic self-sufficiency, we produced estimates of the share of Massachusetts families with FESS standard deficits in 1999 by the educational attainment of the family householder. Findings for five educational subgroups of family heads are displayed in Chart 13. The incidence of FESS deficits among these five groups ranged from a high of nearly 54 per cent among those families headed by an individual lacking a high school diploma to slightly more than one-third among high school graduates to lows of 11 per cent among Bachelor degree holders and 8 per cent among families with a householder holding a Master's or higher degree. Those families with a head who failed to graduate from

high school were five to six times more likely than their peers with a Bachelor's or higher degree to have failed to achieve economic self-sufficiency in our state in 1999. Even at the near peak of the labor market boom of the 1990s, Massachusetts families with a householder lacking any post-secondary schooling ran a high risk of having a FESS deficit.⁶⁵

Chart 13:
The Incidence of Family Economic Self-Sufficiency Deficits among Families in Massachusetts by the Educational Attainment of the Householder, 1999



Immigrant families were earlier found to face poverty and low income challenges at a rate more than twice as high as that of families with a native born householder. To identify these two groups' success in achieving economic self-sufficiency, we estimated the per cent of native born and foreign born families with a FESS deficit both overall and by family type (Table 39). During 1999, families headed by an immigrant adult were nearly twice as likely as families with a native born householder to have failed to achieve economic self-sufficiency. Slightly over 43 per cent of immigrant families fell into this problem group versus only 23 per cent of the native born. In each of the four family type subgroups, immigrant families were more likely than native born families to have faced a FESS deficit, but the relative size of the gap was smallest among

⁶⁵ The labor market boom peaked in calendar year 2000 when the state's unemployment rate reached an historical

families headed by a single parent with one or more children present in the home. Both immigrant and native born single parent families faced an extraordinarily high incidence of economic self-sufficiency challenges, with 82 of every 100 immigrant single parents having a FESS deficit in 1999.

Table 39:
Estimates of the Incidence of FESS Deficits among Families With a
Foreign Born and Native Born Householder by Family Type: 1999
(in %)

	(A)	(B)	(C)
Family Type	Foreign Born	Native Born	Foreign Born/ Native Born
2 or More Adults, No Children	33.7	17.1	2.0
1 Adult, 1 or More Children Under 18	81.6	62.3	1.3
2 Adults, 1 or More Children Under 18	38.4	20.0	1.9
3 or More Adults, 1 or More Children Under 18	50.0	20.4	2.5
Total, All Families	43.1	22.9	1.9

The Incidence of Family Economic Self-Sufficiency Deficit Challenges among Different Types of Families in Massachusetts

As the preceding analyses have revealed, across the state, families with different sizes and characteristics have experienced substantially different degrees of success in achieving a level of income that meets or exceeds the Family Economic Self-Sufficiency standard for their family type. The average share of families experiencing a Family Economic Self-Sufficiency deficit for the entire state hides the experiences of some groups that find it very difficult to earn an income that will make their family economically self-sufficient. Families with more than one adult present in the home are much more successful in achieving economic self-sufficiency than families with only one adult present. Families in which the head of household has a high school or a college degree fare much better than families headed by a person who did not finish high school.

To illustrate the influence of multiple characteristics of families on their chances of achieving economic self-sufficiency, we looked at the incidence Family Economic Self-

low of 2.6%. Total wage and salary employment peaked in early 2001 and has declined sharply since then.

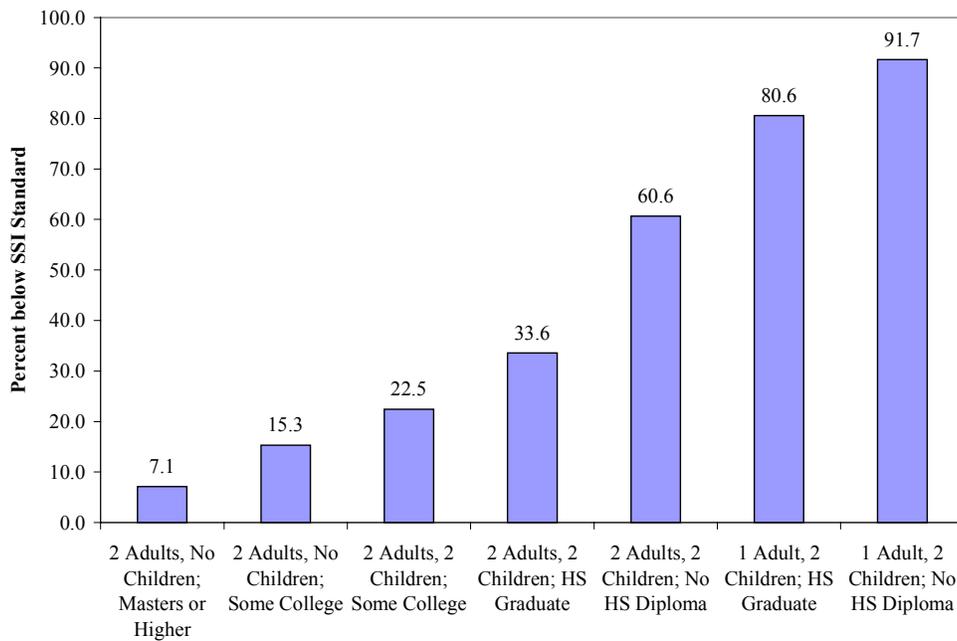
Sufficiency deficits for seven different types of families in Massachusetts. These seven types of families had the following characteristics:

Family 1	2 Adults, No Children; Householder has a Masters degree or higher
Family 2	2 Adults, No Children; Householder has some college or an Associates degree
Family 3	2 Adults, 2 Children; Householder has some college or an Associates degree
Family 4	2 Adults, 2 Children; Householder is a high school graduate but did not attend college
Family 5	2 Adults, 2 Children; Householder did not graduate from high school
Family 6	1 Adult, 2 Children; Householder is a high school graduate but did not attend college
Family 7	1 Adult, 2 Children; Householder did not graduate from high school

The results of our analysis are displayed in Chart 14. Families with no children under age 18 that had two adults present and had a householder that had at least a Master’s degree were very successful in achieving economic self-sufficiency. Only 7.1 percent of the families in this group fell below the Family Economic Self-Sufficiency standard. Two adult childless families in which the householder completed some college had similar experiences, with just over 15 percent of the families in this group falling short of the economic self-sufficiency standard. Two adult families with the same level of education of the householder (some college) that had two children present in the house did not fare as well. About 23 percent of the families in this group were unable to achieve economic self-sufficiency. The percent of families unable to achieve economic self-sufficiency increased by about ten percentage points for two adult/two children families headed by an individual who finished high school but did not attend college, with 34 percent of the families in this group falling short of attaining a self-sufficient income. Families with the same composition (two adults and two children) who were headed by an individual who did not have a high school diploma found it considerably more difficult to achieve economic self-sufficiency, with the portion of families in this group falling below self-sufficiency jumping to over 60 percent. However, families with a householder that had the same level of formal education (no high school diploma) but only had one adult present found it even more difficult to achieve economic self-sufficiency, with almost 92 percent of the families in this category falling below the income level needed to achieve economic self-sufficiency. Families with this same composition (one adult and two children) headed by an individual who did obtain a high school diploma did not fare much better, with over 80 percent of the families in this category earning an income below the level that would provide them economic self-sufficiency.

Chart 14:

The Incidence of Family Economic Self-Sufficiency Deficits
Among Seven Different Types of Families in Massachusetts, 1999



These examples illustrate the severe difficulties experienced by single parent families and families headed by persons lacking a high school diploma in achieving an income that will make them self-sufficient. It should be noted, that while these numbers pertain to the state of Massachusetts as a whole, this pattern typically prevails for individual counties. In each county, families with more than one adult and no children present fared substantially better than those households that had only one adult with children present in the home. Furthermore, families in each county that have a householder with some post-secondary schooling were frequently much more successful in achieving economic self-sufficiency than families headed by an individual who does not have a high school diploma.

The Incidence of Family Economic Self-Sufficiency Deficit Challenges among Unrelated Persons in Massachusetts in 1999

All of our preceding analyses of Family Economic Self-Sufficiency challenges in Massachusetts have been focused on family households. This section of the paper is devoted to an analysis of the degree to which unrelated individuals in Massachusetts were able to achieve economic self-sufficiency in 1999. The U.S. Census Bureau defines unrelated individuals as a person living on his/her own or “a person sharing a housing unit, who is not related to the householder by birth, marriage or adoption, including foster children”. The Census 2000 PUMS

data file allows us to identify all unrelated individuals in Massachusetts. In 2000, there were 1.185 million unrelated individuals in Massachusetts, comprising nearly 19 percent of the total population of the state. The economic self-sufficiency analysis in this section is based upon the 1.170 million unrelated individuals in Massachusetts who were 18 years of age and older at the time of the 2000 Census. We also have excluded those persons who were enrolled in college at the time of the Census.⁶⁶

How did unrelated individuals fare in achieving self-sufficiency incomes in the state of Massachusetts and individual counties during 1999? In our analysis, we compare the FESS standard for an unrelated individual with that person's total personal income in 1999. The estimated incidence of FESS challenges for unrelated individuals in Massachusetts by county in 1999 are displayed in Table 40. The Family Economic Self-Sufficiency standard for an unrelated individual in 1999 as estimated by the Women's Educational and Industrial Union varied across counties, ranging from lows of \$13,651 in Berkshire County and \$14,495 in Franklin County to highs of \$19,444 in Middlesex, Norfolk, and Plymouth counties.⁶⁷

⁶⁶ In our analysis, we have excluded all those unrelated adults who were enrolled in educational institutions at the time of the 2000 Census. Including all of college enrolled adults can exaggerate the number of adults with an income deficit of concern to policymakers, particularly full-time college students 18 to 24 years of age. Our numbers are, thus, conservative estimates of the number of unrelated individuals with a FESS income deficit.

⁶⁷ The 1999 estimates were imputed by CLMS staff using the FESS standards for 1997 and 2003.

Table 40:
Family Economic Self-Sufficiency Standards for Unrelated Individuals in Massachusetts by
County, 1999

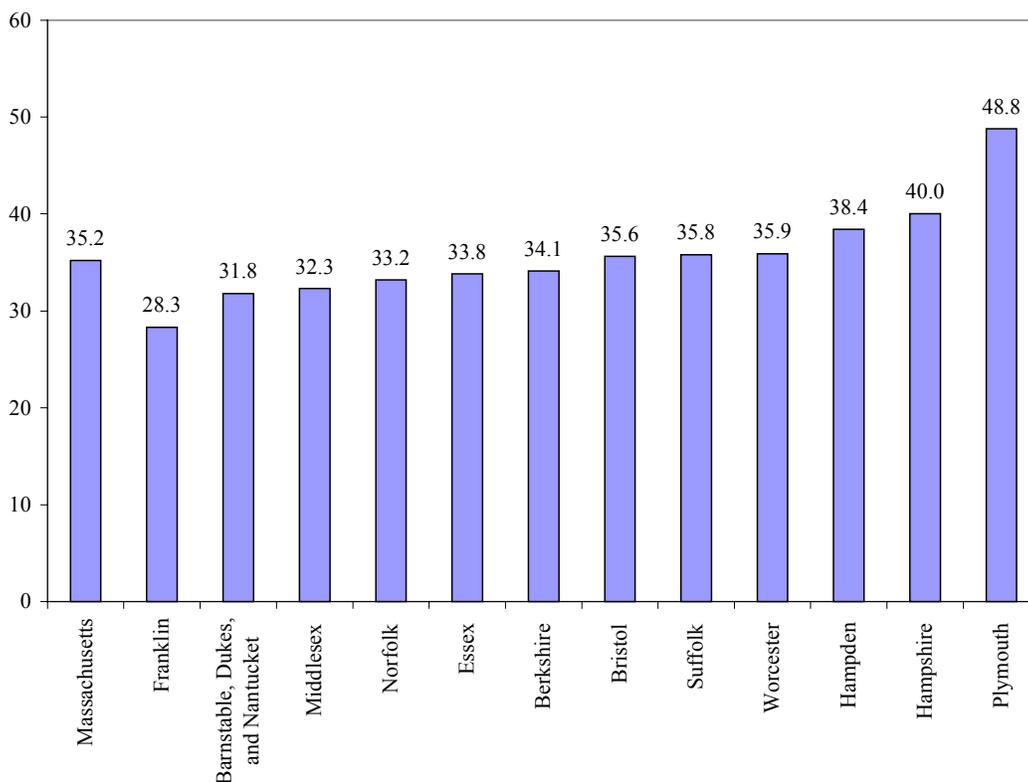
County	Self-Sufficiency Standard
Barnstable, Dukes, Nantucket	\$16,637
Berkshire	\$13,651
Bristol	\$14,900
Essex	\$15,977
Franklin	\$14,495
Hampden	\$14,840
Hampshire	\$14,959
Middlesex	\$19,444
Norfolk and Plymouth Counties	\$19,441
Suffolk	\$18,677
Worcester	\$15,736

Source: Women's Educational and Industrial Union (WEIU), imputed by CLMS.

In 1999, thirty five percent of all unrelated individuals 18 and older in Massachusetts had a personal income below the Family Economic Self-Sufficiency standard (Chart 15).⁶⁸ The share of unrelated individuals not enrolled in college with a personal income below the self-sufficiency standard varied fairly considerably across counties, ranging from lows of 28 percent in Franklin County and 32 percent in Barnstable, Dukes, and Nantucket counties to highs of 38 percent in Hampden County, 40 percent in Hampshire County and nearly 49 percent in Plymouth County. (Chart 15).

⁶⁸ If unrelated individuals enrolled in college were included in the analysis, then the incidence of FESS challenges would have risen to 37.3 percent.

Chart 15:
Percent of Unrelated Adults 18 and Older in Massachusetts with a
Personal Annual Income below the Self-Sufficiency Level by County, 2000

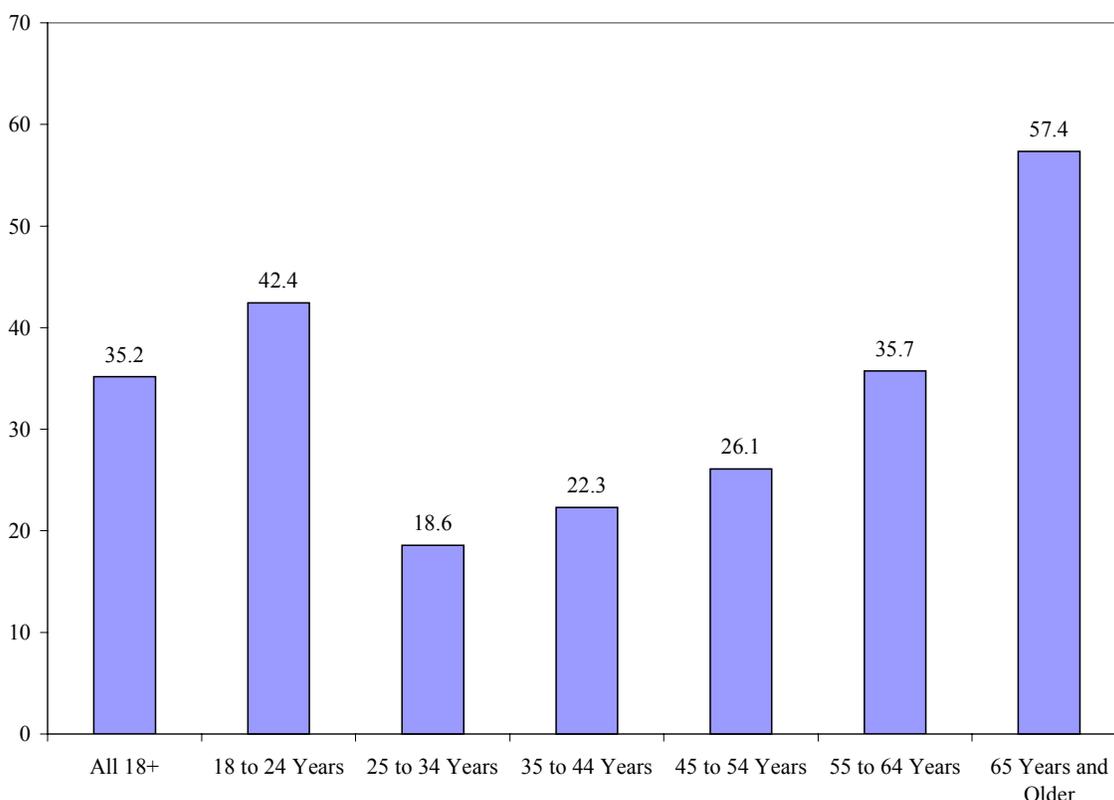


With the demographic characteristics data on the PUMS files, we were able to generate estimates of the incidence of Family Economic Self-Sufficiency deficits for an array of age, gender, race-ethnic, nativity, and educational attainment subgroups of unrelated individuals in Massachusetts. Chart 16 displays the findings by age group. The Family Economic Self-Sufficiency deficits among unrelated adults in Massachusetts varied quite widely by age group. As expected, given the limited work experience and hence earnings of most young adults, the incidence of income inadequacy challenges was very high among 18-24 year olds (42.4%).⁶⁹ The incidence of Self-sufficiency challenges for all unrelated persons fell to only 19% among 25-34 years old, but then rose after that, increasing to 22% for 35-44 years old, to 26% for 45-54 years old, and 36% for those 55-64 years old. (Chart 16). Among older persons 65 and older, the incidence of FESS income deficits rose sharply to 57%. It should be noted that the personal income measure includes nearly all sources of money income, including all forms of government cash transfers including Social Security retirement income and private pensions. In the absence

⁶⁹ For 18-24 years old, if we had included those youth enrolled in college, the incidence of FESS challenges for this particular age group would have risen to 58.4 percent instead of 42.4 percent.

of these cash transfers and private pensions, the incidence of income deficits among older adults would be even higher in Massachusetts. Limited income from work and property and their pension incomes keep many of these older individuals out of poverty, but does not allow them to achieve economic self-sufficiency.

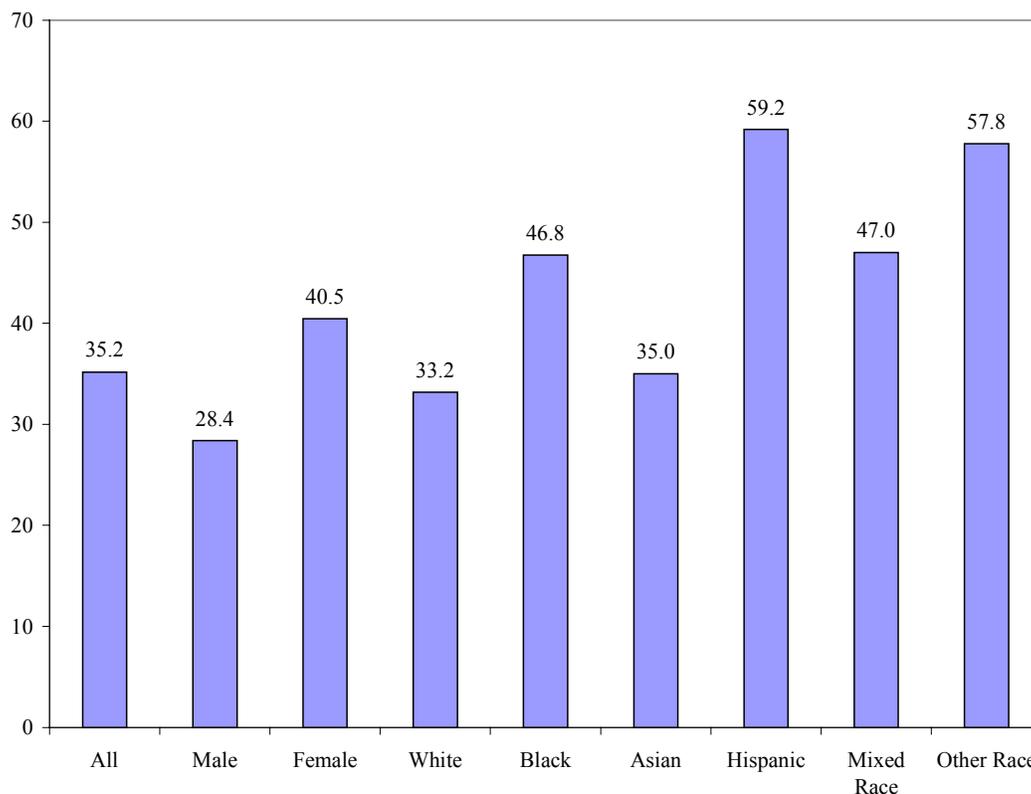
Chart 16:
Percent of Unrelated Adults 18 and Older in Massachusetts with a
Total Personal Annual Income below the Self-Sufficiency Level by Age Group, 2000



The percent of unrelated individuals in Massachusetts with a personal income below the self-sufficiency level in 1999 also varied quite substantially by gender and race-ethnic group. (Chart 17). In Massachusetts, the incidence of Self-sufficiency challenges in 1999 was sharply higher among unrelated females than among their male peers (40 percent for women versus only 28 percent for men). The incidence of Self-sufficiency challenges among unrelated individuals also varied substantially across race-ethnic groups, ranging from lows of 33% for Whites and 35% for Asians to highs of 57% for those in “other” races and 59% among Hispanics.⁷⁰ Many of these Hispanic unrelated individuals were immigrants with limited formal schooling. Very high fractions of Hispanic immigrants with limited formal schooling experienced FESS deficits.

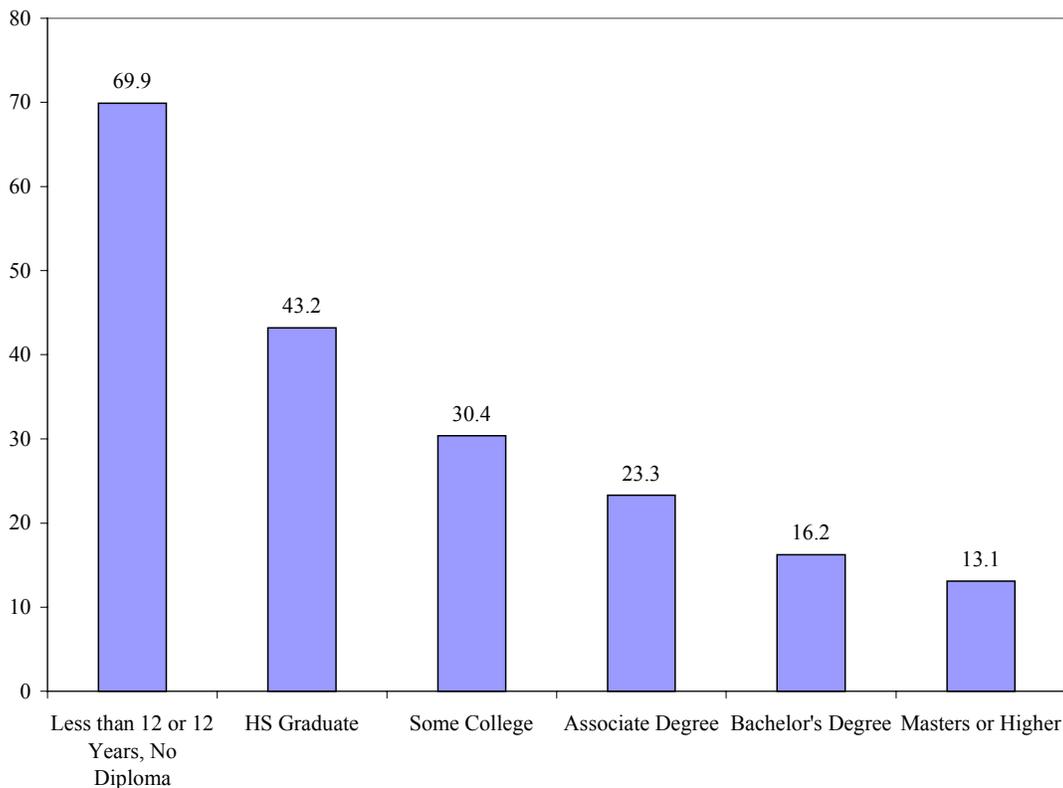
⁷⁰ The “other races” included American Indians, Alaskan Natives, and Hawaiian Islander.

Chart 17:
Percent of Unrelated Adults in Massachusetts with a Total Personal Annual Income below the Self-Sufficiency Level, Total and by Gender and Race/Ethnic Group, 2000



National, state and local research studies have consistently found that an individual person’s earnings are positively and strongly associated with their years of formal schooling, i.e., the higher the educational attainment level, the higher the level of annual earnings. We have estimated the incidence of Family Economic Self-Sufficiency deficits for all unrelated adults in Massachusetts by their educational attainment levels. As expected, the findings reveal that the higher the years of formal schooling completed by an individual, the lower the incidence of FESS deficiency challenges (Chart 18). In 1999, nearly seventy percent of unrelated adults without a high school diploma or GED had a personal annual income below the self-sufficiency standard. The incidence of such FESS deficit challenges for all unrelated persons in Massachusetts declined steadily and strongly with their formal years of schooling. The incidence of FESS deficit challenges for those unrelated adults with a high school diploma or a GED was 40% versus only 23% for those with an Associate’s degree, 16% for those with a Bachelor’s degree, and a low of 13% for those with a Master’s or higher degree. Those unrelated individuals who failed to graduate from high school or obtain a high school equivalency degree were 5.4 times more likely to experience a FESS deficit than their peers with a Masters or higher degree.

Chart 18:
Percent of Unrelated Adults 18 and Older in Massachusetts with a Total Personal Annual Income below the Self-Sufficiency Level by Educational Attainment, 2000



Given the strong growth in the state’s immigrant population in recent years, we considered it important to identify how well foreign born, unrelated individuals fared in avoiding FESS deficits. Findings in Table 41 reveal that foreign-born unrelated persons in Massachusetts in 1999 experienced a higher incidence of economic self-sufficiency challenges than their native-born counterparts (50% versus 33%). The pattern of a higher incidence of such problems among the foreign born was similar across all Massachusetts counties. Foreign-born persons across Massachusetts counties were 5 percentage points to 29 percentage points more likely than their native-born counterparts to be unable to achieve economic self-sufficiency during calendar year 1999 (Table 41). In 8 of the 12 counties, a majority of foreign born unrelated individuals experienced a FESS deficit during calendar year 1999. In contrast, in only one county (Plymouth) were more than 40 percent of the native born unrelated individuals unable to achieve economic self-sufficiency.

Table 41:
Percent of all Unrelated Adults 18 and Older in Massachusetts with a Personal Annual Income Below the Self-Sufficiency Level by Nativity Status and by County, 2000
 (Numbers in Percent)

County	Foreign-Born	Native-Born	Difference
Barnstable, Dukes, and Nantucket	36.9	31.4	+5.5
Berkshire	55.5	33.2	+22.3
Bristol	48.1	34.5	+13.6
Essex	52.1	31.6	+20.5
Franklin	39.2	27.4	+11.8
Hampden	63.1	34.9	+28.2
Hampshire	65.2	35.8	+29.4
Middlesex	44.1	30.4	+13.7
Norfolk	43.8	32.2	+11.6
Plymouth	69.0	46.2	+22.7
Suffolk	50.4	32.0	+18.4
Worcester	48.9	34.8	+14.1
Massachusetts, Total	50.0	33.1	+16.9

Source: PUMS 5% Sample, Census 2000, tabulations by Center for Labor Market Studies.

Measuring the Mean and Aggregate Size of Poverty and Family Economic Self-Sufficiency Deficits

The preceding sections of this report have presented comprehensive estimates of both the numbers and demographic/socioeconomic characteristics of families in Massachusetts that were poor, low income, or unable to achieve economic self-sufficiency in 1999. Besides knowing that a particular family was poor or unable to achieve economic self-sufficiency, it would be highly desirable to know how far away they were from achieving an annual income above the federal government's poverty line or the Family Economic Self-Sufficiency threshold. The success of alternative workforce development or income support strategies in reducing the incidence of each type of income inadequacy challenge will be dependent on the size of these existing deficits and the effectiveness of the proposed interventions in raising the incomes of families. One cannot expect to eliminate a large FESS income deficit with a relatively low cost workforce investment or a marginal change in Earned Income Tax Credits or Child Tax Credits or Child Care Tax Credits.

For several decades now, the U.S. Census Bureau has provided annual estimates of the distribution and mean size of the poverty income deficits faced by poor families in the United States.⁷¹ The poverty income deficit is a measure of the absolute size of the difference between

⁷¹ See: Joseph Dalaker and Bernadette D. Proctor, *Poverty in the United States: 1999*, Current Population Reports, Consumer Income, P-60, 210, U.S. Government Printing Office, Washington, D.C., 2000.

the poverty income threshold for a given poor family and its annual pre-tax money income.⁷² For example, suppose that the poverty income threshold for a four person family was \$18,000 and its reported pre-tax, money income was \$12,500. The poverty income deficit for this family would have been \$5,500.

Given the distribution of these poverty income deficits and the number of poor families, one can calculate both the mean value of these poverty income deficits and the aggregate value of the poverty income deficits for the entire nation or for a particular state. Findings of the March 2000 CPS work experience and income survey for the U.S. revealed that the mean poverty income deficit for poor families throughout the nation was \$6,687.⁷³ The distribution of these poverty deficits was characterized by a substantial degree of variability. Approximately 10% of poor families had a poverty income deficit of less than \$1,000 while nearly half had a poverty income deficit greater than \$6,000. The aggregate value of the poverty income deficits for all poor families was \$44.6 billion dollars in 1999. This is the total amount of income that would have had to be received by poor families to bring each of them up to the poverty line during that year.

Using the Census 2000 PUMS files for Massachusetts, we have estimated the mean and aggregate size of the poverty income deficits for all poor families in Massachusetts during 1999. Estimates of the mean size of these poverty income deficits by family size are displayed in Table 42. The mean poverty income deficit for all poor families was \$7,071. The mean sizes of these deficits varied by family size, becoming increasingly larger as family size increased. The mean values of these deficits ranged from \$5,443 for 2 person families to a high of \$17,768 for poor families containing nine or more persons.⁷⁴ The aggregate size of these family poverty income deficits was \$761 million.

Table 42:
Mean Poverty Income Deficits and Total Poverty Deficits of
Families in Massachusetts by Size of Family, 1999

(A)	(B)	(C)
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⁷² Given the use of money income measures that exclude the value of key in-kind benefits such as food stamps, rental subsidies, Medicaid benefits, and federal and state Earned Income Tax Credits, the sizes of the poverty income deficits are somewhat exaggerated. There are alternative poverty income measures and deficits that can be produced by varying the definition of money income to incorporate such in-kind benefits and tax credits.

⁷³ See: Joseph Dalaker and Bernadette Proctor, *op. cit.*, "Table E", p. xvi.

⁷⁴ More than 80 per cent of poor families in Massachusetts during 1999 contained two to four persons. Only one per cent of the state's poor families contained 8 or 9 persons.

Family Size	Mean Income Deficit	Number of Families	Total Deficit (in Millions of Dollars)
2 Person Family	\$5,443	39,854	\$215
3 Person Family	6,814	27,700	189
4 Person Family	7,796	20,813	162
5 Person Family	9,279	12,268	114
6 Person Family	10,753	4,183	45
7 Person Family	12,013	1,628	20
8 Person Family	12,925	668	9
9 or More Person Family	17,768	500	9
All Families	7,071	107,614	761

Source: Census 2000, 5% PUMS files, tabulations by authors.

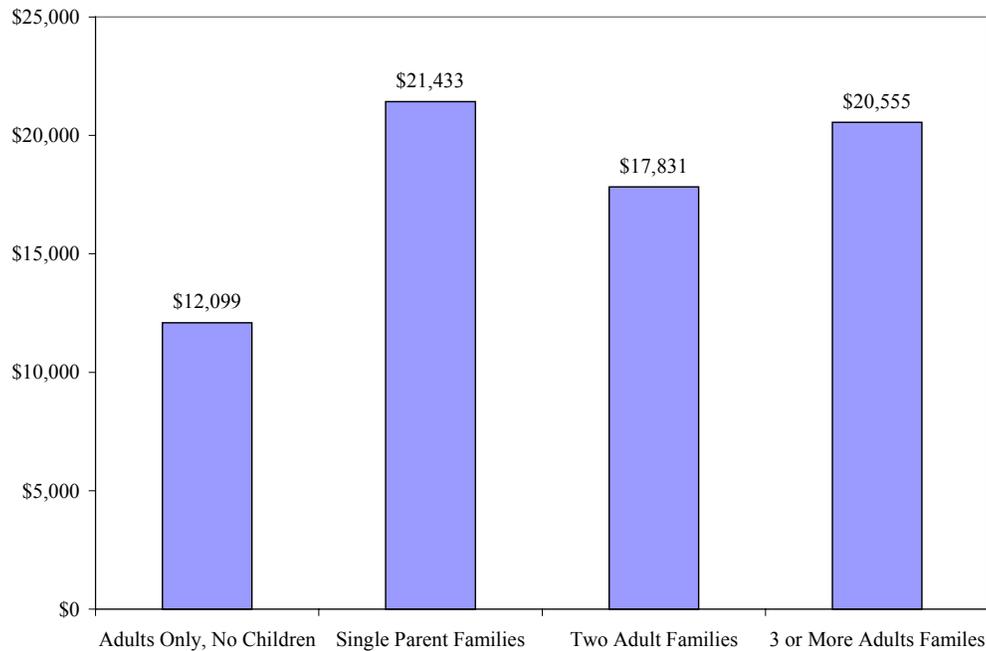
Knowledge of the distribution, mean size, and aggregate size of the Family Economic Self-Sufficiency deficits of Massachusetts families is also desirable, both to aid economic policy making and to track progress over-time in bringing families closer to the FESS standard. To our knowledge, no state has made an effort to estimate the magnitude of these FESS deficits. Estimates of the mean values and aggregate values of these FESS deficits for all families and for selected family types are displayed in Table 43 and Chart 19. The mean value of these income deficits was quite substantial at \$16,967. The mean size of these FESS deficits ranged from a low of \$12,100 for those families containing only adult members to a high of more than \$21,400 for single parent families with at least one child under 18. The aggregate FESS income deficit was \$7.08 billion, nearly ten times as large as the aggregate poverty income deficits of all poor families in the state during that year. The much larger value of the aggregate FESS income deficits is attributable to the facts that (a) there were four times as many families with a FESS deficit as there were poor families during 1999 and (b) the mean FESS deficit of \$16,967 was 2.4 times as high as the mean poverty income deficit of \$7,071.

Table 43:
The Mean Values and Total Size of the Self-Sufficiency Income
Deficits of Massachusetts Families by Family Type in 1999

	(A)	(B)	(C)
Family Type	Mean SSI Deficit	Number of Families With a Deficit	Total Value of Deficits (in Millions Of Dollars)

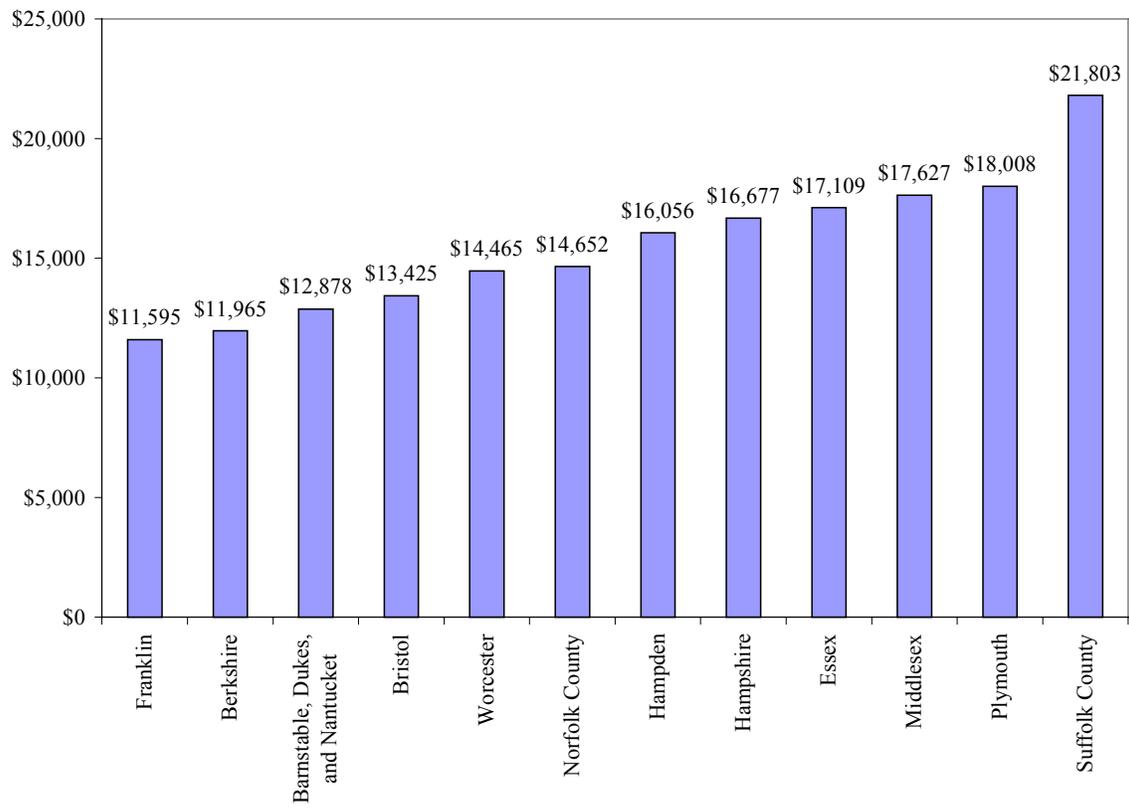
Adults Only, No Children	\$12,099	149,314	\$1,807
Single Parent Families	\$21,433	109,767	\$2,352
Two Adult Families, With One or More Children	\$17,831	121,455	\$2,166
Three or More Adults, With One or More Children	\$20,555	36,787	\$756
All Families	\$16,967	417,323	\$7,080

Chart 19:
Mean FESS Deficit for Families below the Self-Sufficiency
Income Standard in Massachusetts, 1999



The mean values of the FESS deficits for families were quite high in all counties of the state, but they did differ across counties (Chart 2). The mean values of these deficits ranged from a low of slightly under \$11,600 for Franklin County to highs of \$18,000 in Plymouth County and \$21,800 in Suffolk County. Not only did families in Plymouth and Suffolk Counties have the highest incidence of FESS challenges in 1999, but the families experiencing these deficits had the two highest mean deficits. Thus, reducing the problems of family income inadequacy in Plymouth and Suffolk Counties will be a far more formidable task than in other counties of the state where fewer families experience such challenges and incur lower average income deficits when they do so.

Chart 20:
Mean FESS Deficits for Families Below the
Self-Sufficiency Standard in Massachusetts by County, 1999



Summary of Key Findings and Future Research Issues

This research monograph was designed to provide an analysis of key demographic/ socioeconomic traits of Massachusetts families and the incidence of three types of income inadequacy challenges among Massachusetts families during 1999 and other selected time periods. The three alternative measures of income inadequacy were the official poverty income thresholds of the federal government, family measures of “low incomes” based on two times the poverty income thresholds, and the Family Economic Self-Sufficiency Standards of the Women’s Educational and Industrial Union and Wider Opportunities for Women. Given these three measures of income inadequacy, we estimated the number and per cent of Massachusetts families that were poor, low income, and unable to achieve Economy Self-Sufficiency in 1999. These estimates were generated for a diverse array of demographic and socioeconomic subgroup of families across the state and in individual counties. Whenever possible, we compared the findings for 1999 with those of earlier years (1979, 1989) and in more recent years (2002). A summary of our main findings is presented below together with a brief set of issues for future research consideration.

(i) At the time of the 2000 Census, there were approximately 1.584 million family households residing in the state, an increase of about 12 per cent since 1980. Slightly over three-fourths (76.4%) of these families were married couple families, 18 per cent were headed by unmarried women, and the remaining 5.4 per cent were headed by unmarried men. The family composition of the state in 2000 was essentially identical to that of the nation. Over the past two decades, however, a declining fraction of the state’s families have been married couples. In 1980, their share of all families was just under 81%, but had declined to 76% in 2000. The change in the marital composition of the state’s families has had a number of adverse consequences for the state’s ability to reduce poverty, low income, and economic self-sufficiency challenges, given the higher rates of income inadequacy challenges among unmarried families, especially when children are present in the home.

(ii) The educational attainment of the state’s family householders has improved over time and exceeds the average educational attainment of family householders across the nation. At the time of the 2000 Census, 85 per cent of the state’s family householders held a high school diploma or its equivalent, nearly 60 per cent had completed at least one year of post-secondary

schooling, and 34 per cent had obtained a Bachelor's or higher degree. In 1980, only 38 per cent of the state's family heads had completed one or more years of college and only slightly more than 20 per cent had completed four or more years of college.⁷⁵ In 2000, Massachusetts family heads were more likely than their U.S. counterparts to have graduated from high school (85.4 vs. 81.2 per cent), completed at least one year of college (59.3 vs. 53.6 per cent), and obtained a Bachelor's or higher degree (34.4 vs. 25.4 per cent). The improved educational attainment of family householders, *ceteris paribus*, should have strengthened the state's ability to combat income inadequacy challenges, given the strong links between the educational attainment of the family householder and their likelihood of being poor, low income, or unable to achieve economic self-sufficiency.

(iii) Only a slight majority (50.5 per cent) of the state's family households in 2000 had one or more related children under 18 in the home. This share has been quite stable over the past two decades. Unfortunately, a rising share of the state's families with related children in the home were headed by an unmarried woman or man. In 2000, 28 per cent of families with a child under 18 were single parent families, up from 20 per cent in 1980. The higher share of families with children headed by an unmarried adult has negative consequences for poverty, low income, and economic self-sufficiency challenges, given the much higher incidence of income inadequacy challenges among such families.

(iv) At the time of the 2000 Census, there were 272,000 family households in Massachusetts that were headed by a foreign born individual. These immigrant families accounted for 17.2 per cent of all families in the state, up from only 11.6 per cent in 1980. Given the above average share of immigrant families who lacked a high school diploma, the limited English-speaking proficiencies of many immigrant adults, and their fewer years of U.S. work experience, immigrant families are at a considerably higher risk of being poor, low income, or unable to achieve economic self-sufficiency.

(v) At the time of the 2000 Census, 6.7% of the state's families were categorized as being poor on the basis of the federal government's poverty income thresholds. The Massachusetts family poverty rate in 1999 was identical to the 6.7% family poverty rate of 1989. While the state's poverty rate was several percentage points below that of the nation, no progress was

⁷⁵ The 1980 Census only collected data on years of schooling completed. It did not ask respondents to report whether they actually had received various types of high school diplomas or college degrees.

achieved in reducing either the family or person poverty rate over the decade of the 1990s.⁷⁶ The slow growth of median real family income over the decade combined with rising family income inequality brought progress in reducing poverty to a halt. During the past few years, there has been a modest rise in the poverty rate of both families and persons in Massachusetts as the state's labor markets weakened considerably.

(vi) Family poverty rates in Massachusetts at the time of the 2000 Census varied quite considerably by family type, the presence of children in the home, and the educational attainment of the family householder. Family poverty rates in Massachusetts ranged from a low of 3 per cent among married couple families to a high of 22 per cent among families that were headed by unmarried women. Families with one or more related children in the home were 3.2 times more likely to be poor than families with no related children under age 18 in the home (10.3% vs. 3.2%). Poverty rates of families also were strongly associated with the educational attainment of the family householder, ranging from a low of less than 2 per cent for families headed by a person with a Bachelor's or higher degree to 8.4% for families headed by a high school graduate with no post-secondary schooling and to a high of 17% for families with a head who did not obtain a regular high school diploma or a GED certificate. Strong links between poverty rates and the educational attainment of the family householder prevailed across all family types, among families with and without children, and within each race/ethnic and nativity status group (i.e., immigrant and native born families).

(vii) Family poverty rates in Massachusetts in 1999 varied quite widely across counties and Local Workforce Investment Board service delivery areas. Poverty rates of families ranged from lows of 3% in Norfolk and Nantucket Counties to highs of 8% in Hampden and 15% in Suffolk County. Over the decade, there was growing divergence in family poverty rates across counties as a number of counties with above average poverty rates at the beginning of the decade (Bristol, Hampden, and Suffolk) moved somewhat further away from the state average while counties with below average poverty rates in 1989 (Barnstable, Franklin, Hampshire) moved further below the state average by the end of the decade.

(viii) At the time of the 2000 Census, nearly 271,000 families in Massachusetts were estimated to be "low income", i.e., with money incomes less than two times the poverty line for families of their given size and age composition. They represented 17.1 per cent of all families

⁷⁶ The poverty rate for all persons in Massachusetts during 1999 was a higher 9.3 percent, up from 8.9% in 1989.

in the state, an incidence two and one-half times as high as the share of poor families. The share of families with a low income in 1999 was statistically identical to the share of state families that were low income in 1989 (17.0%). Thus, no progress was made in reducing the incidence of low income challenges in Massachusetts during the decade of the 1990s. A rise in the incidence of such challenges in the recessionary early years of the 1990s was offset by a decline from mid-decade onward. During the recessionary years of 2001-2002, the per cent of state families with low incomes is estimated to have risen to just under 19 per cent.

(ix) Similar to the findings on the structure of family poverty rates, the per cent of families with annual incomes below two times the poverty line in 1999 differed considerably across family types, the presence of children in the home, and the educational attainment, race/ethnic origin, and nativity status of the family householder. The incidence of low income challenges ranged from a low of 10% for married couple families to a high of 43 per cent for families headed by unmarried women. Families with children present in the home were more than twice as likely to be low income as families without any children under 18 in the home (23.4% vs. 10.8%). Only 5 to 6 per cent of the state's families with a householder possessing a Bachelor's or higher degree were low income versus 22 per cent of those headed by a high school graduate and 38 per cent of those headed by an individual lacking a high school diploma or its equivalent. Families headed by a foreign born person were 2.4 times more likely to be low income than their native born counterparts.

(x) The share of families experiencing a low income challenge in Massachusetts in 1999 differed quite substantially across counties and local WIB areas. In all but one county of the state (Norfolk), the incidence of low income challenges was in the double-digits. The per cent of families with low income challenges varied from lows of 8.5% in Norfolk County and 11.6% in Middlesex County to highs of 24% in Hampden County and 32% in Suffolk County. The Boston LWIB was characterized by the highest incidence of low income challenges (33%) while only 8% of families in the Metro South/West LWIB encountered such an income inadequacy problem in 1999.

(xi) Our third set of measures of family income inadequacy is based on the Family Economic Self Sufficiency Standards of the Women's Educational and Industrial Union and Wider Opportunities for Women. We substantially expanded upon the subset of families for which income standards were available to include nearly 50 family types in each county of the

state in 1999. Our estimates indicate that there were slightly over 417,000 families in Massachusetts in 1999 with an annual income below the Self-Sufficiency standard, representing nearly 27 per cent of all family households residing in the state at the time of the 2000 Census. The number of families with a FESS deficit was four times greater than the number of poor families in the state.

(xii) The incidence of FESS deficit challenges varied widely across family types, the educational attainment and nativity status of the family householder, and counties of the state. Just under 20 per cent of families with only adults (18+) present in the household had a FESS deficit versus one-fourth of the families with two adults and at least one child present in the home, and two-thirds of single parent families with a child under 18. The incidence of FESS deficit challenges varied considerably across families based on the educational attainment of the householder. A majority (54%) of the families headed by an individual lacking a high school diploma were unable to achieve an annual income above the FESS standard versus one-third of the families headed by high school graduates, 11% of those with a head who held a Bachelor's degree, and only 8% of those with a Master's or higher degree. Immigrant families were twice as likely as families with a native born householder to have a FESS deficit (34% vs. 17%). The incidence of FESS deficit challenges among families ranged from lows of 18 to 20 per cent in Franklin and Norfolk Counties to highs of 36 per cent in Plymouth County and 47 per cent in Suffolk County. For each family type category, the incidence of FESS deficit challenges was highest in Suffolk County.

(xiii) Nearly 35 per cent of the state's adults who were living on their own or with others to whom they were not related had a FESS income deficit during 1999. The incidence of these income deficits ranged from a low of 18 per cent among 25-34 year olds to highs of 42 per cent among 18-24 year olds and 57 per cent among the state's elderly (65 and older). Women were more likely than men to experience a FESS deficit (40% vs. 28%). Across race/ethnic groups, the share of unrelated individuals with a FESS deficit varied from lows of 33 to 35 per cent among Whites and Asians, respectively, to a high of just under 60% among Hispanics. Those adult persons lacking a high school diploma (70%) faced an extraordinarily high rate of FESS deficits, an incidence 4 to 5 times higher than that of single adults with a Bachelor's or higher academic degree.

(xiv) Calculations of the values of the FESS income deficits of families in 1999 yielded a mean value of nearly \$17,000, which was 2.4 times as high as the mean poverty income deficit of poor families in the state. The mean values of these FESS deficits were lowest for families containing only adult members (\$12,100) and highest for single parent families (\$21,400). The aggregate value of these family FESS deficits was equal to \$7.08 billion, nearly 10 times as high as the aggregate value of the poverty income deficits of families across the entire state.

Further research for this initiative will aim to further improve our insights into the types of labor market experiences (including industries and occupations of year-round, full-time jobs) of family householders and spouses that allow them to achieve economic self-sufficiency. Such applied labor market research is desirable for future workforce development policymaking and planning. A forthcoming research paper by the authors will examine the annual earnings of full-time, year-round adult workers in Massachusetts during the 1990s and identify the types of jobs held by workers with no formal schooling beyond an Associate's degree that allowed them to achieve an earnings level that would raise hypothetical families above the low income thresholds and selected FESS standards.

There are other research activities that could expand upon our understanding of the size and incidence of income inadequacy problems among the state's families and the paths by which families succeed in achieving economic self-sufficiency. First, early this fall, the U.S. Census Bureau will issue its report on family income and poverty developments in the U.S. and Massachusetts during calendar year 2003. Findings from that data base will allow us to estimate the incidence of poverty and low income challenges among Massachusetts families and unrelated individuals during that year, but the small sample size and lack of county geographic identifiers will prohibit estimation of FESS deficit challenges among the state's families during that year.⁷⁷ Second, the U.S. Census Bureau has recently released public use files from the 2002 American Community Surveys, a large scale national household survey that uses a questionnaire nearly identical to the 2000 Census long form questionnaire. Geographic identifiers on this public use data file are not known at this time. The 2003 ACS interviews should be released later this fall,

⁷⁷ The CPS public use files for Massachusetts include identifiers for a few large metropolitan areas (Boston, Springfield, Worcester) but not for counties or any cities other than Boston and Springfield. These city samples are typically quite small and are not necessarily statistically representative of the city.

with opportunities to update the estimates of the number of Massachusetts families with a FES income deficit.

Appendix A: Comparisons of the U.S. Census Bureau Estimates of the Number of Family Households in Massachusetts Counties in 2000 with the Number of Families in each County Based on the PUMA Assignment Model

As noted in the text, the use of the PUMS micro-record data from the 2000 Census to analyze data for geographic areas required us to aggregate Public Use Micro-data Areas (PUMAs) to form counties since the PUMS data files do not provide county identifiers for individuals. PUMA areas contain resident populations of 100,000 or more. These PUMA areas can consist of parts of large cities (Boston, Springfield), or combinations of cities and towns and rural areas, and they often cross county boundaries. A PUMA area may cover parts of two or more counties; thus, decisions must be made as to which county the PUMA should be assigned. The assignment process used by the authors to assign PUMAS to specific counties in Massachusetts is summarized in a table at the end of this appendix.

The total number of families assigned to counties by our assignment process was 1.557 million or nearly 99 per cent of all family households in the state at the time of the 2000 Census. In Table A-1 below, we compare the estimated number of families allocated to each county through the PUMA assignment process with the estimated number of families in each county from published Census Bureau estimates. A substantial majority of the matches are quite close. The two island counties (Dukes and Nantucket) had to be combined with Barnstable County, thus giving us twelve counties in the state for the matching process. For five of these twelve counties, the number of families assigned to counties by our allocation process fell within $\pm 3\%$ and 10 of the 12 were within $\pm 9\%$. Only one county (Hampshire) had an allocated number of families that fell as much as 19% away from the Census Bureau estimate of the number of families in the county. In absolute terms, the gap between these two estimates was fairly small, only 6,370 families. The gap is due to the fact that part of Hampshire County was assigned to a PUMA that overlapped with Hampden County and was allocated to Hampden County. The bulk of the geographic matches appear to be quite close to the U.S. Census Bureau estimates of the number of family households in each county of the state.

Table A-1:
Comparisons of Official U.S. Census Bureau Estimates with
PUMA Assigned Families in Massachusetts Counties, 2000

County	(A) Official Estimates	(B) PUMA Assigned	(C) PUMA/Official (in %)
Barnstable, Dukes, and Nantucket	66,938	67,299	101
Berkshire	35,110	30,922	88
Bristol	140,610	127,935	91
Essex	185,094	185,808	100
Franklin	18,415	20,089	109
Hampden	115,773	124,153	107
Hampshire	33,819	27,449	81
Middlesex	361,076	372,101	103
Norfolk	165,858	155,858	94
Plymouth	122,421	113,679	93
Suffolk	139,159	141,739	102
Worcester	192,423	189,621	99
Total	1,576,696	1,556,653	99

Appendix B: Methodologies for Calculating the Values of Family Economic Self-Sufficiency Standards for Family Subgroups

The task of identifying the numbers and demographic/socioeconomic characteristics of Massachusetts families who were unable to achieve an annual income in excess of the Family Economic Self-Sufficiency standard is substantially more complex than that of simply identifying the number of poor and low income families in the state. The added complexity is due to several factors. First, the federal government's poverty lines and the low income thresholds do not vary across states or sub-state areas. Under these thresholds, central city, suburban and rural families are subject to the same standard though they may live in very different regions and face different living expenses, especially shelter. In contrast to these poverty thresholds, the FESS standards do vary across counties of the state, sometimes substantially. Thus, there are 12 different sets of FESS standards for the state of Massachusetts in 1999.

Second, the federal government calculates separate poverty income thresholds for families of each size and age composition, varying the poverty lines with the number of children under 18 in the family. In contrast, the FESS standards vary by the number of family members, the number of infants, other preschool children, and children over the age of six, including those up to age 12 and teens separately. However, the FESS standards are only calculated for a sub-set of all family types in each county. There are many other family types (three or more adults, no children; one or more adults, three or more children) for whom separate family FESS standards must be calculated if we are to produce comprehensive estimates of the number and per cent of families with income below the FESS standard in the state and each county.⁷⁸ Given our desire to estimate the incidence of FESS challenges for sub-groups of families in the state and in individual counties, we have developed a methodology for estimating a FESS standard for nearly 50 types of families in each county of the state. This appendix provides a description of the specific elements of our estimating methodology with several practical examples of how the methodology is applied to estimate FESS standards for specific types of families in a given county.

⁷⁸ The WEIU previously has attempted to deal with this problem in an indirect manner by estimating a composite FESS standard for each county based on the weighted average family budgets for three types of families. This approach, however, cannot be used to identify the specific number of families with FESS deficits in any given family subgroup, a limitation for policymaking purposes.

Family Economic Self-Sufficiency Standards for five base group families were designed by the Women’s Educational and Industrial Union (WEIU). These base group standards were used to calculate FESS standards for 42 additional types of families with varying characteristics. These five different base group families include families with the following characteristics:

- One adult only
- One adult and one child under six (of pre-school age)
- One adult and one child over six
- One adult and two children, one over six and one under six (of pre-school age)
- Two adults and two children, one over six and one under six (of pre-school age)

To calculate the FESS standards for each of these 42 additional types of families, the FESS standard of the base group family with the closest characteristics is multiplied by an equivalency scale to determine the FESS standard for such a family. The equivalence scale formula that we use was recommended by the National Research Council’s Panel on Poverty and Family Assistance in their final report to the U.S. Congress in 1995 titled Measuring Poverty: A New Approach.⁷⁹ Their formula takes into account the number of adults (18+) and children in the family and incorporates a weight of 0.7 for children and an economy of scale adjustment factor of 0.75. The formula is $(A + 0.7K)^{0.75}$ where A is the number of adults (18+) and K is the number of children and 0.75 is the economy of scale adjustment factor.

Our income adjustment factors incorporate information on the family characteristics of both the base group family and the family for whom we are calculating a standard. The formula for the ratio of the equivalency scales of the two families is as follows:

$$\frac{(A + (0.7 \times K))^{0.75}}{(A_B + (0.7 \times K_B))^{0.75}}$$

⁷⁹ For more detailed technical discussions of the construction and interpretation of equivalence scales, see: (i) Constance F. Citro and Robert T. Michael, Measuring Poverty: A New Approach, National Academy Press, Washington D.C., 1995; (ii) Michael O’Higgins, Gunther Schmaus, and Geoffrey Stephenson, “Income Distribution and Redistribution: A Micro-data Analysis for Seven Countries,” in Poverty, Inequality and Income Distribution in Comparative Perspective, (Editors: Timothy Smeeding, Michael O’Higgins, et al), Urban Institute, Washington D.C., 1990, pp. 20-56; (iii) Timothy M. Smeeding, “Cross-National Comparisons of Inequality and Poverty Position,” in Economic Inequality and Poverty, (Editor: Lars Osberg), M.E. Sharpe, Armonk, New York, 1991.

Where:

- A: Number of adults in the family for whom we are calculating a standard
- K: Number of children in the family for whom we are calculating a standard
- A_B: Number of adults in the base group family
- K_B: Number of children in the base group family

The equivalency scale uses the assumption that a child's consumption requirements are only 70 per cent of the consumption of an adult. Therefore, the number of children in both the numerator and the denominator are multiplied by 0.70. This equivalency scale also recognizes that families' consumption behavior operates on an economy of scale. Thus, as the number of family members increases, the income needed to sustain that family's consumption standard increases at a decreasing rate. Therefore, the numerator and denominator are both brought to the power of 0.75 to reflect the economies of scale in consumption adjustment factor of that family.

Let us start with a relatively simple example, using families in which only adults 18 and older are present in the household. During 1999, a single adult living in Norfolk/Plymouth County was estimated to need \$19,441 to achieve economic self-sufficiency. We need to determine the FESS standards for other families in which more than one adult is present in the family. For families containing two and three adults with no children under 18, we can estimate the Family Economic Self-Sufficiency standard by applying our equivalence scale formula for the above two families, using a household with only one adult as the base group.

Family Size	Equivalence Scale Value	Family Economic Self-Sufficiency Standard
2	$(2)^{0.75}=1.682$	\$32,7003,541
3	$(3)^{0.75}=2.280$	\$44,3165,469

For the family with two adults, the equivalence scale has a value of 1.682, implying that it needs 68 per cent more income than a one person household to achieve the same level of per capita consumption. Multiplying the self-sufficiency level income of \$19,441 for a one person household in Norfolk/Plymouth County by 1.682 yields the Family Economic Self-Sufficiency standard of \$~~32,7003,541~~ for a two person adult family. For a family containing three adults, the equivalence scale has a value of 2.280, and the Family Economic Self-Sufficiency standard for such a family is slightly over~~under~~ \$~~44,3005,500~~.

Now, to illustrate a more complex example, we will calculate the Family Economic Self-Sufficiency standard of a family with children. In this example, the ratio of the equivalency scales for the two families (our subject family and the base group family) is multiplied by the base group family's standard for that county. To determine the ratio of the equivalency scales, we refer to the previously detailed formula:

$$\frac{(A + (0.7 \times K))^{0.75}}{(A_B + (0.7 \times K_B))^{0.75}}$$

For example, to calculate the self-sufficiency standard for a family with one adult and three children under the age of 6 in Boston, we use a base group family with one adult and one child and the variables in the above formula take the following values:

A: 1
 K: 3
 A_B: 1
 K_B: 1

Now, we will take the ratio of the equivalency scales of this family and the base group family and then multiply it by the standard of the base group family (\$36,202).

$$\frac{(1 + (0.7 \times 3))^{0.75}}{(1 + (0.7 \times 1))^{0.75}} \times \$36,202 = 1.569 \times \$36,202 = \$56,801$$

The calculations lead to the conclusion that a family with one adult and three children under the age of 6 in Boston needs a family income of ~~\$56,801~~ ~~3,599~~ in order to achieve economic self-sufficiency. This same methodology is used to calculate FESS standards for 42 different kinds of families in Boston and eleven Massachusetts counties.

Table B-1:
Family Economic Self-Sufficiency Standards for Families in Massachusetts Counties by
Family Type and Number of Adults and Children in the Family

Adults, No Children	Boston	Essex	Middlesex	Norfolk	Plymouth	Bristol
1 Adult	17,713	15,977	19,444	19,441	19,441	14,900
2 Adults	29,790	26,870	32,701	32,696	32,696	25,059
3 Adults	40,377	36,420	44,323	44,316	44,316	33,965
4 Adults	50,100	45,190	54,996	54,987	54,987	42,144
5 Adult	59,227	53,422	65,015	65,005	65,005	49,821
6 Adult	67,906	61,250	74,542	74,530	74,530	57,122
7 Adults	76,237	68,765	83,687	83,674	83,674	64,130
Single Parent Families (1 Adult Present)						
1 Kid Under 6	36,202	32,508	39,389	36,079	36,079	28,209
1 Kid Over 6	27,376	23,079	26,742	25,675	25,675	21,542
2 Kids Under 6	46,875	42,092	51,002	46,716	46,716	36,526
2 Kids Over 6	35,447	29,883	34,626	33,245	33,245	27,893
2 Kids: 1 Under 1 Over 6	45,865	39,611	46,687	42,313	42,313	34,851
3 Kids Under 6	56,795	51,000	61,795	56,602	56,602	44,255
3 Kids Over 6	42,949	36,207	41,954	40,280	40,280	33,796
3 Kids: 1 Under, 2 Over 6	55,571	47,993	56,567	51,267	51,267	42,226
3 Kids: 2 Under, 1 Over 6	55,571	47,993	56,567	51,267	51,267	42,226
4 Or More Kids	64,753	55,924	65,914	59,739	59,739	49,204
Married Couple Families (2 Adults Present)						
1 Kid Under 6	39,182	37,634	43,416	39,934	39,934	33,647
1 Kid Over 6	39,182	37,634	43,416	39,934	39,934	33,647
2 Kids Under 6	46,577	44,737	51,610	47,471	47,471	39,998
2 Kids Over 6	46,577	44,737	51,610	47,471	47,471	39,998
2 Kids: 1 Under 1 Over 6	46,577	44,737	51,610	47,471	47,471	39,998
3 Kids Under 6	53,599	51,481	59,390	54,627	54,627	46,027
3 Kids Over 6	53,599	51,481	59,390	54,627	54,627	46,027
3 Kids: 1 Under, 2 Over 6	53,599	51,481	59,390	54,627	54,627	46,027
3 Kids: 2 Under, 1 Over 6	53,599	51,481	59,390	54,627	54,627	46,027
4 Or More Kids	60,325	57,942	66,843	61,483	61,483	51,803
Families with 3 Adults						
1 Kid Under 6	49,627	47,666	54,989	50,579	50,579	42,616
1 Kid Over 6	49,627	47,666	54,989	50,579	50,579	42,616
2 Kids Under 6	56,514	54,281	62,620	57,598	57,598	48,531
2 Kids Over 6	56,514	54,281	62,620	57,598	57,598	48,531
2 Kids: 1 Under 1 Over 6	56,514	54,281	62,620	57,598	57,598	48,531
3 Kids Under 6	63,131	60,637	69,952	64,343	64,343	54,213
3 Kids Over 6	63,131	60,637	69,952	64,343	64,343	54,213
3 Kids: 1 Under, 2 Over 6	63,131	60,637	69,952	64,343	64,343	54,213
3 Kids: 2 Under, 1 Over 6	63,131	60,637	69,952	64,343	64,343	54,213
4 Or More Kids	69,524	66,778	77,036	70,859	70,859	59,703

Table B-1 (Continued):
Family Economic Self-Sufficiency Standards for Families in Massachusetts Counties by
Family Type and Number of Adults and Children in the Family

Families with 4 or More Adults	Boston	Essex	Middlesex	Norfolk	Plymouth	Bristol
1 Kid Under 6	59,380	57,034	65,796	60,519	60,519	50,992
1 Kid Over 6	59,380	57,034	65,796	60,519	60,519	50,992
2 Kids Under 6	65,896	63,293	73,016	67,161	67,161	56,588
2 Kids Over 6	65,896	63,293	73,016	67,161	67,161	56,588
2 Kids: 1 Under 1 Over 6	65,896	63,293	73,016	67,161	67,161	56,588
3 Kids Under 6	72,204	69,352	80,006	73,590	73,590	62,004
3 Kids Over 6	72,204	69,352	80,006	73,590	73,590	62,004
3 Kids: 1 Under, 2 Over 6	72,204	69,352	80,006	73,590	73,590	62,004
3 Kids: 2 Under, 1 Over 6	72,204	69,352	80,006	73,590	73,590	62,004
4 Or More Kids	78,333	75,239	86,797	79,837	79,837	67,268
In bold is a base group						

**Table B-1 (Continued):
Family Economic Self-Sufficiency Standards for Families in Massachusetts
Counties by Family Type and Number of Adults and Children in the Family**

Adults, No Children	BaDuNan*	Worcester	Hampden	Hampshire	Franklin	Berkshire	Suffolk
1 Adult	16,637	15,736	14,840	14,959	14,495	13,651	18,577
2 Adults	27,980	26,465	24,958	25,158	24,378	22,958	31,243
3 Adults	37,924	35,870	33,828	34,099	33,041	31,118	42,346
4 Adults	47,057	44,508	41,974	42,310	40,998	38,611	52,544
5 Adult	55,629	52,616	49,621	50,018	48,467	45,645	62,116
6 Adult	63,781	60,326	56,891	57,348	55,569	52,333	71,218
7 Adults	71,606	67,728	63,871	64,384	62,386	58,754	79,955
Single Parent Families (1 Adult Present)							
1 Kid Under 6	33,606	30,707	29,209	29,401	29,355	26,830	37,151
1 Kid Over 6	21,647	21,313	20,014	20,133	20,013	18,497	25,723
2 Kid Under 6	43,514	39,760	37,821	38,069	38,010	34,740	48,104
2 Kid Over 6	28,029	27,597	25,915	26,069	25,913	23,950	33,307
2 Kids: 1 Under 1 Over 6	38,616	36,285	34,384	34,575	34,873	31,677	44,196
3 Kids Under 6	52,722	48,174	45,824	46,125	46,053	42,092	58,284
3 Kids Over 6	33,961	33,437	31,399	31,585	31,397	29,019	40,355
3 Kids: 1 Under, 2 Over 6	46,788	43,964	41,660	41,892	42,253	38,380	53,549
3 Kids: 2 Under, 1 Over 6	46,788	43,964	41,660	41,892	42,253	38,380	53,549
4 Or More Kids	54,519	51,228	48,544	48,814	49,235	44,722	62,397
Married Couple Families (2 Adults Present)							
1 Kid Under 6	36,761	34,821	33,208	33,359	33,598	30,926	40,819
1 Kid Over 6	36,761	34,821	33,208	33,359	33,598	30,926	40,819
2 Kid Under 6	43,699	41,393	39,476	39,655	39,940	36,763	48,523
2 Kid Over 6	43,699	41,393	39,476	39,655	39,940	36,763	48,523
2 Kids: 1 Under 1 Over 6	43,699	41,393	39,476	39,655	39,940	36,763	48,523
3 Kids Under 6	50,287	47,632	45,426	45,632	45,960	42,305	55,838
3 Kids Over 6	50,287	47,632	45,426	45,632	45,960	42,305	55,838
3 Kids: 1 Under, 2 Over 6	50,287	47,632	45,426	45,632	45,960	42,305	55,838
3 Kids: 2 Under, 1 Over 6	50,287	47,632	45,426	45,632	45,960	42,305	55,838
4 Or More Kids	56,598	53,610	51,127	51,359	51,728	47,614	62,845
Families with 3 Adults							
1 Kid Under 6	46,561	44,103	42,060	42,251	42,555	39,170	51,700
1 Kid Over 6	46,561	44,103	42,060	42,251	42,555	39,170	51,700
2 Kid Under 6	53,022	50,223	47,897	48,114	48,460	44,606	58,875
2 Kid Over 6	53,022	50,223	47,897	48,114	48,460	44,606	58,875
2 Kids: 1 Under 1 Over 6	53,022	50,223	47,897	48,114	48,460	44,606	58,875
3 Kids Under 6	59,230	56,104	53,506	53,748	54,134	49,829	65,768
3 Kids Over 6	59,230	56,104	53,506	53,748	54,134	49,829	65,768
3 Kids: 1 Under, 2 Over 6	59,230	56,104	53,506	53,748	54,134	49,829	65,768
3 Kids: 2 Under, 1 Over 6	59,230	56,104	53,506	53,748	54,134	49,829	65,768
4 Or More Kids	65,229	61,785	58,924	59,191	59,617	54,875	72,429

Table B-1 (Continued):
Family Economic Self-Sufficiency Standards for Families in Massachusetts Counties by
Family Type and Number of Adults and Children in the Family

Families with 4 or More Adults	BaDuNan*	Worcester	Hampden	Hampshire	Franklin	Berkshire	Suffolk
1 Kid Under 6	55,711	52,770	50,326	50,554	50,918	46,868	61,861
1 Kid Over 6	55,711	52,770	50,326	50,554	50,918	46,868	61,861
2 Kid Under 6	61,825	58,561	55,849	56,102	56,506	52,011	68,649
2 Kid Over 6	61,825	58,561	55,849	56,102	56,506	52,011	68,649
2 Kids: 1 Under 1 Over 6	61,825	58,561	55,849	56,102	56,506	52,011	68,649
3 Kids Under 6	67,743	64,167	61,195	61,473	61,915	56,990	75,221
3 Kids Over 6	67,743	64,167	61,195	61,473	61,915	56,990	75,221
3 Kids: 1 Under, 2 Over 6	67,743	64,167	61,195	61,473	61,915	56,990	75,221
3 Kids: 2 Under, 1 Over 6	67,743	64,167	61,195	61,473	61,915	56,990	75,221
4 Or More Kids	73,493	69,614	66,390	66,691	67,170	61,828	81,606
In bold is a base group	*BaDuNan represents Barnstable, Duke and Nantucket Counties						

Appendix C: A Graphical Portrait of the Incidence of Poverty, Low Income, and Family Economic Self-Sufficiency Challenges among Families in Massachusetts Counties in 1999

Income inadequacy challenges of families can be defined and measured from a variety of different perspectives. In the main body of this monograph, we presented estimates of the incidence of income inadequacy challenges among Massachusetts families from three different vantage points: the official poverty lines of the federal government, twice the poverty line as a proxy for low incomes, and the Family Economic Self-Sufficiency Standards of the Women's Educational and Industrial Union. To our knowledge, this is the first time that any study has ever attempted to estimate the number and per cent of families in a given state that experienced each of the three types of income inadequacy challenges.

In the body of the text, we presented estimates of the per cent of families in each county of the state that experienced poverty, low income, and Family Economic Self-Sufficiency challenges during calendar year 1999. Given the increasingly higher family income levels used to define these challenges as we progress from the poverty income thresholds to the FESS thresholds, the fraction of families experiencing these income inadequacy challenges in each county of the state rises. The key research question is the following: "How much higher is the incidence of Family Economic Self-Sufficiency deficits than low income or poverty challenges among families in each county?" In this appendix, we provide a set of bar graphs that specifically answer this key research question for each county.

For each county of the state, we provide a graphical display of the per cent of family households that were estimated to be poor, low income, or unable to achieve an annual income equal to the Self-Sufficiency standard for a family of its given size and age composition in calendar year 1999.⁸⁰ These findings allow us to identify for the first time the incidence of such income inadequacy challenges for each of these three income standards. For the state as whole, the share of families experiencing these challenges in 1999 ranged from a low of less than 7 per cent for the poverty challenge, to 17 per cent for low income challenges, to a high of 26 per cent for FESS income deficit challenges. There were nearly four times as many families experiencing a FESS income deficit as there were poor families in the state during 1999.

To illustrate the size of the relative differences between the poverty rates of families by county in 1999 and the share of families with a FESS deficit in the same counties, we constructed the following table. For each county, we present estimates of the poverty rate of families in calendar year 1999 and the share of families in the same county who were unable to achieve the Family Economic Self-Sufficiency Standard. The ratio of the incidence of income inadequacy challenges based on the FESS standards to the family poverty rate is displayed under Column C. For each of the twelve counties, the share of families unable to achieve economic self-sufficiency during calendar year 1999 was a substantial multiple of the per cent of families with an income below the official poverty line. The size of these multiples ranged from lows of 2.4 in Hampden County and 2.8 in Franklin County to highs of 6.9 in Norfolk County and 7.3 in Plymouth County. The latter results indicate that families in Norfolk and Plymouth counties found it much more difficult to achieve Economic Self-Sufficiency than to escape from poverty in 1999.

Table C-1:
The Poverty Rate and the Incidence of Family Economic Self-Sufficiency
Deficits among Massachusetts Families by County in 1999
(in %)

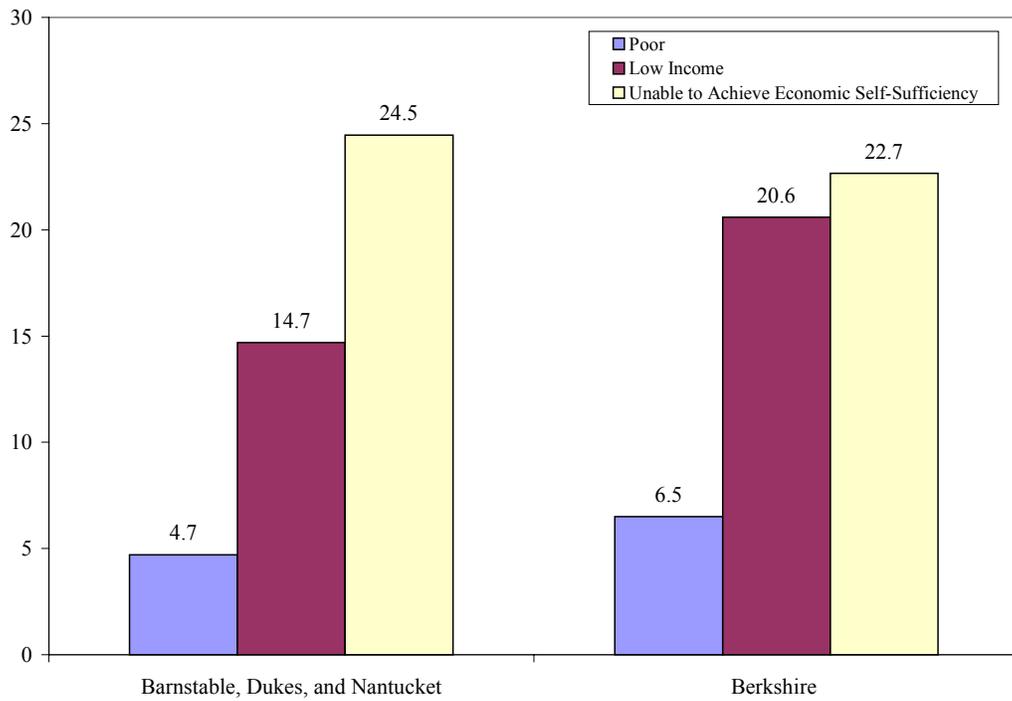
	(A)	(B)	(C)
County	Poverty Rate	Self-Sufficiency Income Deficits	Col. B/Col. A
Barnstable, Dukes, Nantucket	4.7	24.5	5.2
Berkshire	6.5	22.7	3.5
Bristol	7.8	21.4	3.0
Essex	6.6	24.2	3.7
Franklin	6.5	17.9	2.8
Hampden	11.4	27.8	2.4
Hampshire	5.1	33.8	6.6
Middlesex	4.3	25.0	5.8
Norfolk	2.9	20.1	6.9
Plymouth	4.9	36.0	7.3
Suffolk	14.9	46.8	3.1
Worcester	6.3	22.3	3.5

During the decade of the 1990s, the state failed to make any progress in reducing the incidence of poverty or low income challenges among the state's families, and both poverty and low income challenges have increased since 2000. While similar estimates of Family Economic

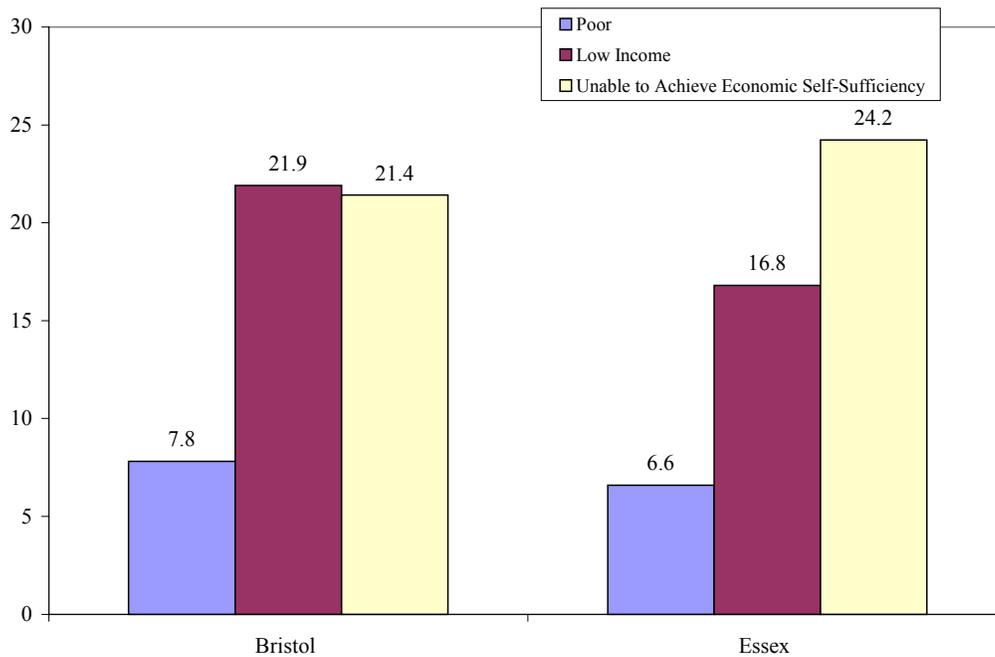
⁸⁰ The counties of Barnstable, Dukes, and Nantucket were combined for purposes of this analysis. The PUMS data files from the 2000 Census do not allow us to separately identify residents of Dukes and Nantucket Counties from those of Barnstable County.

Self-Sufficiency deficits for 1989 are not available at this time, it is quite likely, given the rising relative costs of housing and child care over the 1990s, that there was no progress in reducing the incidence of FESS deficits among families over the past decade. Given the economic declines throughout the state since 2000, it is very likely that the number of families experiencing a FESS deficit challenges have increased since 1999. Clearly, a major challenge for the state in the current decade is to formulate a comprehensive set of economic development, workforce development, and social support programs that will facilitate a sustained reduction in poverty and low income challenges and reduce Family Economic Self-Sufficiency deficits in the years ahead.

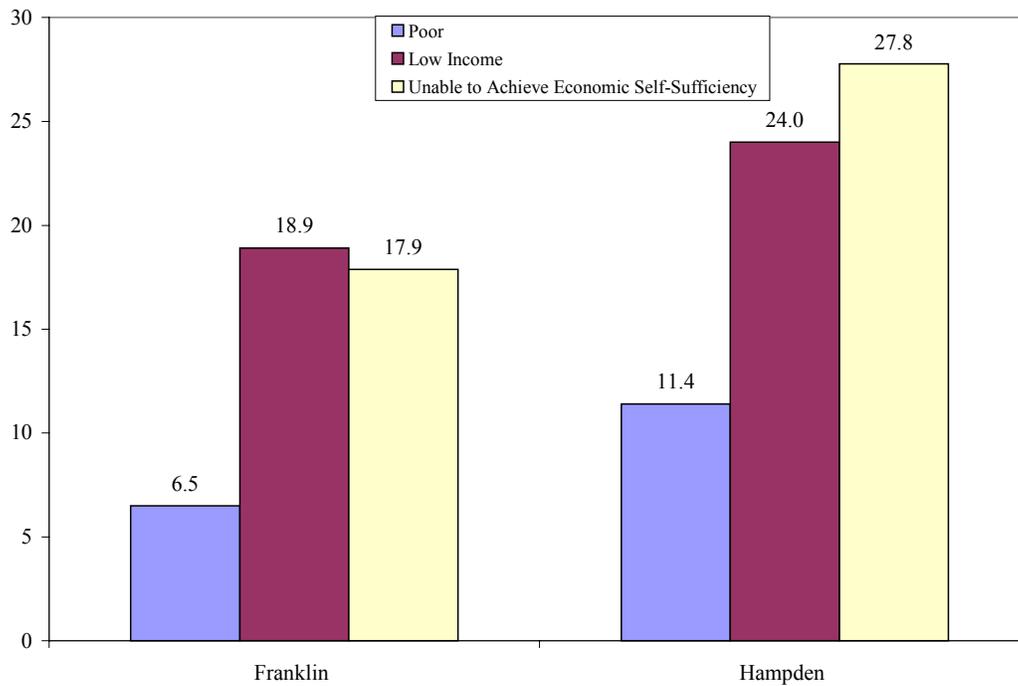
Comparisons of the Per Cent of Families that Were Poor, Low Income, or Unable to Achieve Economic Self-Sufficiency in Selected Counties, 1999



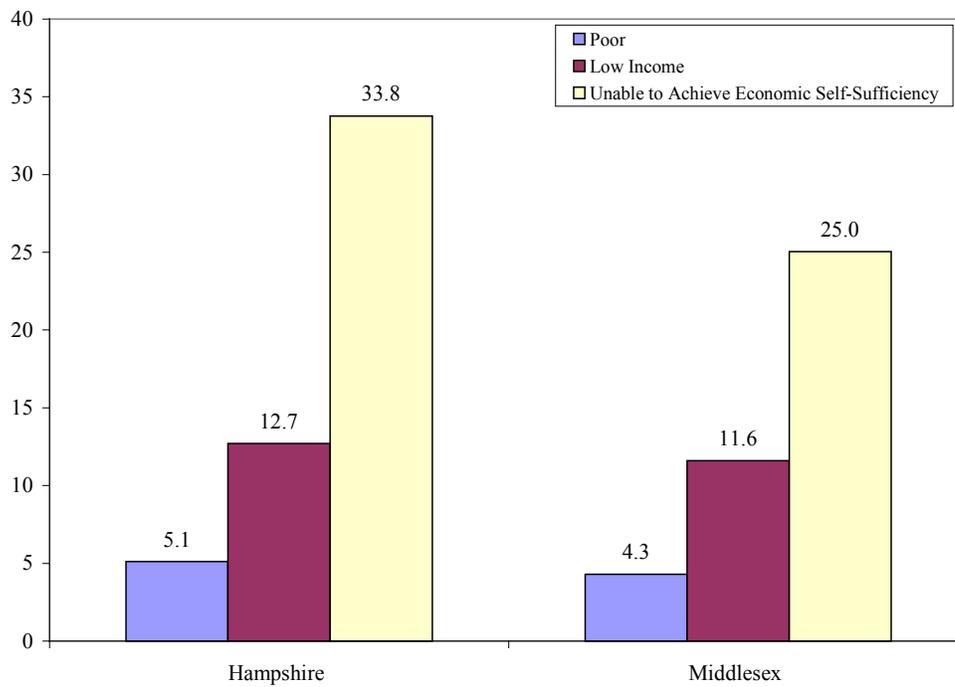
Comparisons of the Per Cent of Families that Were Poor, Low Income, or Unable to Achieve Economic Self-Sufficiency in Selected Counties, 1999



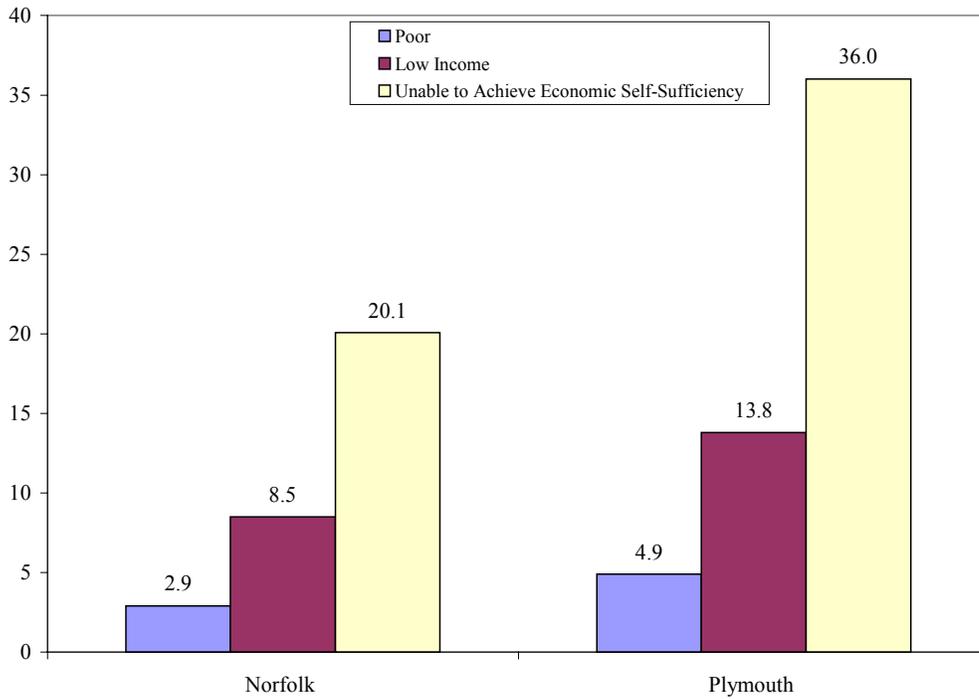
Comparisons of the Per Cent of Families that Were Poor, Low Income, or Unable to Achieve Economic Self-Sufficiency in Selected Counties, 1999



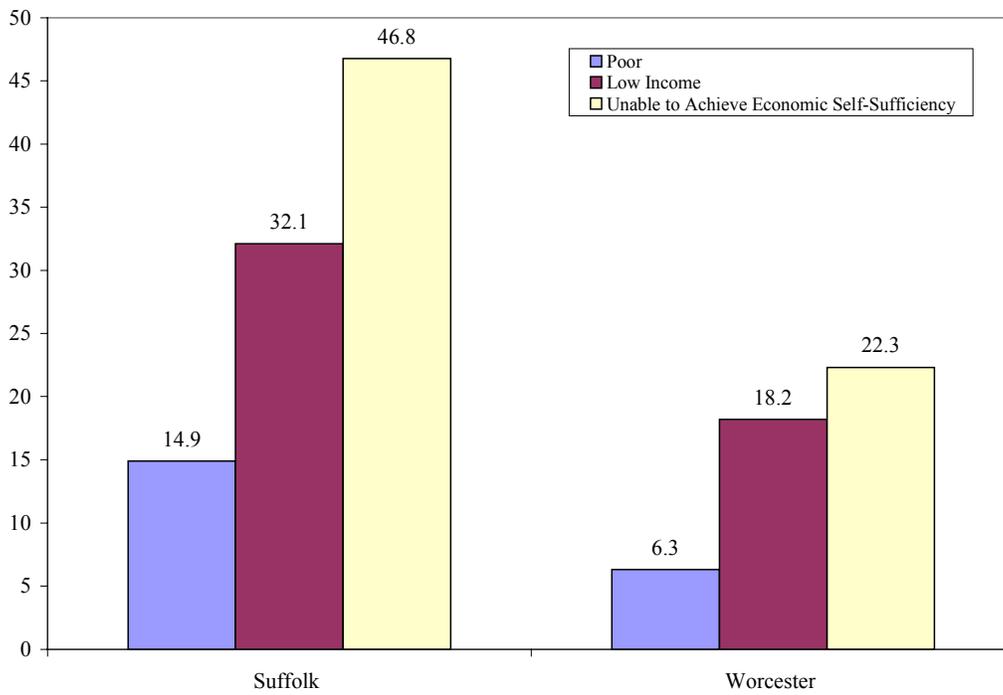
Comparisons of the Per Cent of Families that Were Poor, Low Income, or Unable to Achieve Economic Self-Sufficiency in Selected Counties, 1999



Comparisons of the Per Cent of Families that Were Poor, Low Income, or Unable to Achieve Economic Self-Sufficiency in Selected Counties, 1999



Comparisons of the Per Cent of Families that Were Poor, Low Income, or Unable to Achieve Economic Self-Sufficiency in Selected Counties, 1999



Appendix D: Estimates of the Per Cent of Families in Massachusetts with a Family Income below the Family Economic Self-Sufficiency Standard by County and Type of Family, 1999

We have estimated the number and per cent of families in each of the counties of Massachusetts with incomes below the self-sufficiency standard. These estimates are provided for all families and for four different types of families cross-classified by the nativity status of the family householder in each of the 12 counties. The four family types are the following:

- Two or more adults, no children under 18
- One adult, one or more children under 18
- Two adults, one or more children under 18
- Three or more adults, one or more children under 18.

Estimates for 96 subsets of families in Massachusetts are displayed in Table D1.

The labels of the table should be interpreted as follows:

- Mean = Per cent of families with an income below the Family Economic Self-Sufficiency standard in 1999.
- Sum = Number of families with a family income below the Family Economic Self-Sufficiency standard in 1999
- Total = Total Number of families in that subgroup in 1999.

Table D1:
Number and Per Cent of Families in Massachusetts
With a Family Income below the Family Economic Self-Sufficiency Standard by County, 1999

	Native Born			Foreign Born			Total		
	Mean	Sum	Count	Mean	Sum	Count	Mean	Sum	Count
<u>Boston City</u>									
Adults, No Children	0.229	8,352	36,409	0.423	7,825	18,504	0.295	16,177	54,913
1 Adult, One or More Children Under 18	0.772	9,649	12,498	0.869	6,850	7,881	0.810	16,499	20,379
2 Adults with One or More Children Under 18	0.363	5,553	15,312	0.608	8,326	13,689	0.479	13,879	29,001
3 or More Adults with One or More Children Under 18	0.487	2,361	4,853	0.581	4,701	8,094	0.545	7,062	12,947
Total	0.375	25,915	69,072	0.575	27,702	48,168	0.457	53,617	117,240
<u>Barnstable, Dukes, and Nantucket Counties</u>									
Adults, No Children	0.177	6,676	37,657	0.237	518	2,185	0.181	7,194	39,842
1 Adult, One or More Children Under 18	0.567	2,938	5,185	0.627	232	370	0.571	3,170	5,555
2 Adults with One or More Children Under 18	0.261	4,548	17,436	0.457	561	1,227	0.274	5,109	18,663
3 or More Adults with One or More Children Under 18	0.280	865	3,085	0.881	126	143	0.307	991	3,228
Total	0.237	15,027	63,363	0.366	1,437	3,925	0.245	16,464	67,288
<u>Berkshire County</u>									
Adults, No Children	0.143	2,282	15,940	0.154	88	572	0.144	2,370	16,512
1 Adult, One or More Children Under 18	0.608	2,335	3,839	0.776	118	152	0.615	2,453	3,991
2 Adults with One or More Children Under 18	0.206	1,732	8,415	0.439	144	328	0.215	1,876	8,743
3 or More Adults with One or More Children Under 18	0.164	262	1,601	0.840	42	50	0.184	304	1,651
Total	0.222	6,611	29,795	0.356	392	1,102	0.227	7,003	30,897
<u>Bristol County</u>									
Adults, No Children	0.152	8,221	54,076	0.255	1,741	6,839	0.164	9,962	60,915
1 Adult, One or More Children Under 18	0.586	7,011	11,960	0.743	889	1,197	0.600	7,900	13,157
2 Adults with One or More Children Under 18	0.260	1,406	5,400	0.167	6,306	37,831	0.178	7,712	43,231
3 or More Adults with One or More Children Under 18	0.140	1,202	8,607	0.298	627	2,107	0.171	1,829	10,714
Total	0.223	17,840	80,043	0.199	9,563	47,974	0.214	27,403	128,017
<u>Essex County</u>									
Adults, No Children	0.139	10,899	78,543	0.332	3,731	11,236	0.163	14,630	89,779
1 Adult, One or More Children Under 18	0.612	8,476	13,857	0.850	4,742	5,582	0.680	13,218	19,439
2 Adults with One or More Children Under 18	0.154	7,784	50,591	0.513	5,262	10,258	0.214	13,046	60,849
3 or More Adults with One or More Children Under 18	0.137	1,489	10,853	0.530	2,657	5,016	0.261	4,146	15,869
Total	0.186	28,648	153,844	0.511	16,392	32,092	0.242	45,040	185,936
<u>Franklin County</u>									
Adults, No Children	0.096	901	9,341	0.368	324	880	0.120	1,225	10,221
1 Adult, One or More Children Under 18	0.423	826	1,953	0.212	24	113	0.411	850	2,066
2 Adults with One or More Children Under 18	0.154	826	5,353	0.351	286	815	0.180	1,112	6,168
3 or More Adults with One or More Children Under 18	0.152	189	1,243	0.526	223	424	0.247	412	1,667
Total	0.153	2,742	17,890	0.384	857	2,232	0.179	3,599	20,122

Table D1 (Continued):
Number and Per Cent of Families in Massachusetts
With a Family Income below the Family Economic Self-Sufficiency Standard by County, 1999

	Native Born			Foreign Born			Total		
	Mean	Sum	Count	Mean	Sum	Count	Mean	Sum	Count
<u>Hampden County</u>									
Adults, No Children	0.134	6,851	51,083	0.333	2,457	7,372	0.159	9,308	58,455
1 Adult, One or More Children Under 18	0.643	8,728	13,579	0.842	3,481	4,135	0.689	12,209	17,714
2 Adults with One or More Children Under 18	0.205	6,634	32,314	0.545	3,498	6,417	0.262	10,132	38,731
3 or More Adults with One or More Children Under 18	0.197	1,316	6,694	0.588	1,514	2,576	0.305	2,830	9,270
Total	0.227	23,529	103,670	0.534	10,950	20,500	0.278	34,479	124,170
<u>Hampshire County</u>									
Adults, No Children	0.137	1,593	11,647	0.432	790	1,827	0.177	2,383	13,474
1 Adult, One or More Children Under 18	0.687	2,156	3,137	0.854	1,189	1,392	0.739	3,345	4,529
2 Adults with One or More Children Under 18	0.297	1,800	6,055	0.644	999	1,551	0.368	2,799	7,606
3 or More Adults with One or More Children Under 18	0.204	216	1,059	0.667	525	787	0.401	741	1,846
Total	0.263	5,765	21,898	0.630	3,503	5,557	0.338	9,268	27,455
<u>Middlesex County</u>									
Adults, No Children	0.172	26,855	156,398	0.285	8,929	31,310	0.191	35,784	187,708
1 Adult, One or More Children Under 18	0.597	14,777	24,735	0.755	4,755	6,298	0.629	19,532	31,033
2 Adults with One or More Children Under 18	0.197	19,691	100,158	0.414	10,223	24,687	0.240	29,914	124,845
3 or More Adults with One or More Children Under 18	0.220	4,422	20,109	0.412	3,548	8,612	0.277	7,970	28,721
Total	0.218	65,745	301,400	0.387	27,455	70,907	0.250	93,200	372,307
<u>Norfolk County</u>									
Adults, No Children	0.169	11,661	68,944	0.244	2,322	9,499	0.178	13,983	78,443
1 Adult, One or More Children Under 18	0.563	5,250	9,333	0.614	615	1,002	0.567	5,865	10,335
2 Adults with One or More Children Under 18	0.136	6,485	47,592	0.320	2,296	7,166	0.160	8,781	54,758
3 or More Adults with One or More Children Under 18	0.154	1,496	9,687	0.423	1,165	2,756	0.214	2,661	12,443
Total	0.184	24,892	135,556	0.313	6,398	20,423	0.201	31,290	155,979
<u>Plymouth County</u>									
Adults, No Children	0.269	12,509	46,486	0.430	3,385	7,866	0.292	15,894	54,352
1 Adult, One or More Children Under 18	0.750	8,342	11,122	0.916	2,466	2,691	0.782	10,808	13,813
2 Adults with One or More Children Under 18	0.277	8,250	29,750	0.483	2,737	5,670	0.310	10,987	35,420
3 or More Adults with One or More Children Under 18	0.233	1,660	7,123	0.536	1,596	2,979	0.322	3,256	10,102
Total	0.326	30,761	94,481	0.530	10,184	19,206	0.360	40,945	113,687
<u>Suffolk County</u>									
Adults, No Children	0.251	11,508	45,793	0.461	10,008	21,708	0.319	21,516	67,501
1 Adult, One or More Children Under 18	0.742	10,881	14,671	0.855	7,575	8,860	0.784	18,456	23,531
2 Adults with One or More Children Under 18	0.382	7,060	18,494	0.647	10,453	16,155	0.505	17,513	34,649
3 or More Adults with One or More Children Under 18	0.461	2,912	6,312	0.604	5,943	9,836	0.548	8,855	16,148
Total	0.380	32,361	85,270	0.601	33,979	56,559	0.468	66,340	141,829

Table D1 (Continued):
Number and Per Cent of Families in Massachusetts
With a Family Income below the Family Economic Self-Sufficiency Standard by County, 1999

	Native Born			Foreign Born			Total		
<u>Worcester County</u>									
Adults, No Children	0.153	12,690	83,196	0.314	2,375	7,559	0.166	15,065	90,755
1 Adult, One or More Children Under 18	0.564	9,762	17,323	0.762	2,199	2,886	0.592	11,961	20,209
2 Adults with One or More Children Under 18	0.165	9,590	58,087	0.428	2,884	6,738	0.192	12,474	64,825
3 or More Adults with One or More Children Under 18	0.163	1,823	11,214	0.380	969	2,550	0.203	2,792	13,764
Total	0.199	33,865	169,820	0.427	8,427	19,733	0.223	42,292	189,553

	Native Born			Foreign Born			Total		
	Mean	Sum	Count	Mean	Sum	Count	Mean	Sum	Count
Massachusetts									
Adults, No Children	0.171	112,646	659,104	0.337	36,668	108,853	0.194	149,314	767,957
1 Adult, One or More Children Under 18	0.623	81,482	130,694	0.816	28,285	34,678	0.664	109,767	165,372
2 Adults with One or More Children Under 18	0.200	75,806	379,645	0.384	45,649	118,843	0.244	121,455	498,488
3 or More Adults with One or More Children Under 18	0.204	17,852	87,587	0.500	18,935	37,836	0.293	36,787	125,423
Total	0.229	287,786	1,257,030	0.431	129,537	300,210	0.268	417,323	1,557,240

Appendix E: Estimates of the Mean and Aggregate Size of the Family Economic Self-Sufficiency Deficits of Massachusetts Families by County and Family Type in 1999

In the main body of this monograph, we presented estimates of the mean size and aggregate value of the poverty income and FESS income deficits of families in Massachusetts during 1999. In this Appendix, we provide estimates of the mean size and aggregate values of the FESS income deficits for all families and for the following four types of families in the city of Boston and each county of the state during 1999:⁸¹

- Families with adult members (18+) only
- Single parent families with one or more related children under 18 in the home
- Families with two adults and one or more children under 18
- Families with three or more adults and one or more children under 18

For each county, we estimated the number of families with a FESS deficit during 1999 and the mean value of those deficits. By multiplying the mean deficit by the number of families with a deficit, we obtain estimates of the aggregate value of these deficits. These estimates are first derived for each of the four subsets of families in each county and then aggregated to derive the aggregate value of these FESS deficits in the county. The values of the aggregate FESS deficits for the twelve counties are combined to form the estimate for the state. The estimated aggregate value of these FESS deficits for all families in the state during 1999 was \$7.08 billion.⁸²

⁸¹ The counties of Barnstable, Dukes, and Nantucket have been combined for this analysis. They cannot be separately identified on the PUMS public use files.

⁸² This estimate pertains only to family households. It excludes the FESS deficits of unrelated individuals in the state during 1999.

Table E-1:
Mean and Aggregate FESS Income Deficits for Families with Incomes
Below the Family Economic Self-Sufficiency Standard, by Type of Family and County

	Mean	Sum of	Number of
	Deficit	Deficits	Families with
			a Deficit
Boston City			
Adults Only, No Children	\$15,064	\$243,683,183	16,177
Single Parent Families, One or More Children Under 18	\$26,961	\$444,821,739	16,499
2 Adult Families, One or More Children Under 18	\$22,377	\$310,567,813	13,879
3+ Adult Families, One or More Children Under 18	\$24,238	\$171,168,744	7,062
Total	\$21,826	\$1,170,241,479	53,617
Essex			
Adults Only, No Children	\$11,216	\$164,088,835	14,630
Single Parent Families, One or More Children Under 18	\$21,490	\$284,055,768	13,218
2 Adult Families, One or More Children Under 18	\$18,001	\$234,836,617	13,046
3+ Adult Families, One or More Children Under 18	\$21,127	\$87,594,301	4,146
Total	\$17,109	\$770,575,521	45,040
Middlesex			
Adults Only, No Children	\$12,950	\$463,389,083	35,784
Single Parent Families, One or More Children Under 18	\$22,819	\$445,694,357	19,532
2 Adult Families, One or More Children Under 18	\$19,052	\$569,930,701	29,914
3+ Adult Families, One or More Children Under 18	\$20,552	\$163,795,765	7,970
Total	\$17,627	\$1,642,809,906	93,200
Norfolk			
Adults Only, No Children	\$11,363	\$158,892,050	13,983
Single Parent Families, One or More Children Under 18	\$19,654	\$115,269,480	5,865
2 Adult Families, One or More Children Under 18	\$15,510	\$136,189,784	8,781
3+ Adult Families, One or More Children Under 18	\$18,077	\$48,102,345	2,661
Total	\$14,652	\$458,453,660	31,290
Plymouth			
Adults Only, No Children	\$13,808	\$219,462,503	15,894
Single Parent Families, One or More Children Under 18	\$23,357	\$252,437,640	10,808
2 Adult Families, One or More Children Under 18	\$18,447	\$202,674,663	10,987
3+ Adult Families, One or More Children Under 18	\$19,276	\$62,762,598	3,256
Total	\$18,008	\$737,337,403	40,945
Bristol			
Adults Only, No Children	\$9,620	\$95,836,603	9,962
Single Parent Families, One or More Children Under 18	\$17,309	\$136,737,157	7,900
2 Adult Families, One or More Children Under 18	\$13,965	\$107,701,353	7,712
3+ Adult Families, One or More Children Under 18	\$15,091	\$27,600,900	1,829
Total	\$13,425	\$367,876,013	27,403

Table E-1 (Continued):
Mean and Aggregate FESS Income Deficits for Families with Incomes
Below the Family Economic Self-Sufficiency Standard, by Type of Family and County

	Mean	Sum of	Number of
	Deficit	Deficit	Families with
			a Deficit
Barnstable, Dukes and Nantucket			
Adults Only, No Children	\$9,783	\$70,380,170	7,194
Single Parent Families, One or More Children Under 18	\$17,937	\$56,859,459	3,170
2 Adult Families, One or More Children Under 18	\$13,849	\$70,754,007	5,109
3+ Adult Families, One or More Children Under 18	\$14,158	\$14,030,567	991
Total	\$12,878	\$212,024,203	16,464
Worcester			
Adults Only, No Children	\$10,213	\$153,852,890	15,065
Single Parent Families, One or More Children Under 18	\$18,508	\$221,370,376	11,961
2 Adult Families, One or More Children Under 18	\$15,428	\$192,451,701	12,474
3+ Adult Families, One or More Children Under 18	\$15,785	\$44,070,679	2,792
Total	\$14,465	\$611,745,645	42,292
Hampden			
Adults Only, No Children	\$9,626	\$89,600,575	9,308
Single Parent Families, One or More Children Under 18	\$19,742	\$241,026,081	12,209
2 Adult Families, One or More Children Under 18	\$16,545	\$167,633,469	10,132
3+ Adult Families, One or More Children Under 18	\$19,558	\$55,348,276	2,830
Total	\$16,056	\$553,608,401	34,479
Hampshire			
Adults Only, No Children	\$9,192	\$21,905,153	2,383
Single Parent Families, One or More Children Under 18	\$22,095	\$73,907,144	3,345
2 Adult Families, One or More Children Under 18	\$16,478	\$46,122,856	2,799
3+ Adult Families, One or More Children Under 18	\$17,036	\$12,623,965	741
Total	\$16,677	\$154,559,117	9,268
Franklin			
Adults Only, No Children	\$10,098	\$12,370,203	1,225
Single Parent Families, One or More Children Under 18	\$12,756	\$10,842,285	850
2 Adult Families, One or More Children Under 18	\$11,918	\$13,253,214	1,112
3+ Adult Families, One or More Children Under 18	\$12,780	\$5,265,498	412
Total	\$11,595	\$41,731,200	3,599
Berkshire			
Adults Only, No Children	\$7,422	\$17,589,953	2,370
Single Parent Families, One or More Children Under 18	\$15,127	\$37,105,942	2,453
2 Adult Families, One or More Children Under 18	\$13,383	\$25,106,196	1,876
3+ Adult Families, One or More Children Under 18	\$13,127	\$3,990,557	304
Total	\$11,965	\$83,792,648	7,003

Table E-1 (Continued):
Mean and Aggregate FESS Income Deficits for Families with Incomes
Below the Family Economic Self-Sufficiency Standard, by Type of Family and County

	Mean	Sum of	Number of
	Deficit	Deficit	Families with
			a Deficit
Suffolk			
Adults Only, No Children	\$15,762	\$339,131,700	21,516
Single Parent Families, One or More Children Under 18	\$25,862	\$477,314,380	18,456
2 Adult Families, One or More Children Under 18	\$22,782	\$398,974,404	17,513
3+ Adult Families, One or More Children Under 18	\$26,085	\$230,982,369	8,855
Total	\$21,803	\$1,446,402,853	66,340
Massachusetts			
Adults Only, No Children	\$12,099	\$1,806,499,716	149,314
Single Parent Families, One or More Children Under 18	\$21,433	\$2,352,620,069	109,767
2 Adult Families, One or More Children Under 18	\$17,831	\$2,165,628,965	121,455
3+ Adult Families, One or More Children Under 18	\$20,555	\$756,167,818	36,787
Total	\$16,967	\$7,080,916,569	417,323