
Methodology and Sample Design

APPENDIX A

In our study, we analyzed the economic status of 1,159 current and former MFIP families in calendar year 2000. All of these families received MFIP at some point between May and October 1998. In 2000, 403 of these families were on MFIP the entire year, 384 were on MFIP part of the year, and 372 were off MFIP the entire year.

We used MFIP's definition of a family, which requires a child to be in it.¹ Thus, the family is (1) a minor child, (2) his or her minor siblings (including adopted or step), (3) the parents of these children (including adoptive, step, or unmarried), and (4) other children (such as nieces, nephews, and grandchildren of the parents) who were included in the MFIP assistance unit. In addition, all family members must live in the same household. However, we made two adjustments to MFIP's definition. First, we included immediate family members who were ineligible for MFIP, such as undocumented non-citizens and those receiving Supplemental Security Income (SSI). Second, while all the families had at least one child in 1998, not all of them had a child in 2000. In some cases, all the children became adults or moved out of the household by 2000. In total, these 1,159 families had 4,024 members in 2000.

In determining economic status, we tried to assess each family's ability to meet its daily living expenses—food, shelter, clothing, health care, and child care. Table A.1 lists the income sources and tax liabilities for which we did and did not collect data. For the 28 income sources and 3 tax liabilities that we used to compute after tax income, we collected and merged data from 12 different data systems, including the Minnesota Department of Humans Services' MAXIS system and state income tax records.

We did not examine economic resources that:

- Were designed to help pay for extra services (beyond daily living expenses) required by individuals with special needs—such as the Family Support Program,
- Tried to increase the earnings potential of recipients—such as MFIP employment services—rather than subsidize daily living expenses,
- Had eligibility requirements that current and former MFIP recipients could not meet—such as Refugee Cash Assistance,
- Had very small average benefits per recipient—such as the Telephone Assistance program, or

1 Pregnant women are also eligible, even if they do not have any other children.

- Had data that were not readily available or could not be easily estimated.

SAMPLE DESIGN

As stated above, our analysis was based on a random sample of families who were on MFIP between May and October 1998.² We chose this time period to build our sample off of a sample that the Minnesota Department of Human Services (DHS) is using for a longitudinal study concerning current and former MFIP recipients. DHS is collecting a rich database of self-reported information that we used to supplement the administrative data that we collected.

**Table A.1: Income Sources and Tax Liabilities
Included and Not Included in Analysis**

Income Sources Included

Earnings
Child Support
Workers' Compensation
Unemployment Insurance
Other (e.g. interest and dividends)
MFIP Cash Assistance
Supplemental Security Income
Minnesota Supplemental Aid
General Assistance
Diversionary Assistance
Emergency Assistance
MFIP Food Assistance
Food Stamps and State Food Program
National School Lunch
Women, Infants, and Children
Section 8 Housing
Public Housing
Energy Assistance
Medical Assistance
MinnesotaCare
General Assistance Medical Care
Child Care Assistance
Federal Earned Income Tax Credit
Federal Additional Child Tax Credit
Minnesota Working Families Tax Credit
Minnesota Dependent Care Tax Credit
Minnesota Education Tax Credit
Minnesota Property Tax Refund

Tax Liabilities Included

Federal Income Taxes
State Income Taxes
Social Security and Medicare Payroll Taxes

Income Sources Not Included

Family Support Program
Consumer Support Program
Relative Custody Assistance Program
Adoption Assistance Program
Foster Care
Refugee Resettlement Program
Refugee Cash Assistance
Refugee Medical Assistance
United States Repatriate Program
Telephone Assistance Plan
Social Services
Mothers and Children Program
Child Care Resource and Referral
MFIP Employment Services
Self-Employment Investment Development
Education Grants (Pell and State)
Rental Assistance for Family Stabilization
Group Residential Housing
Family Homeless Prevention

SOURCE: Office of the Legislative Auditor.

2 We developed a proportional, stratified, random sample.

DHS' Recipient and Applicant Samples

The Department of Human Services designed its study to track two groups of MFIP families between 1998 and 2003. The new-applicant group was a random sample of 985 one-parent families who first applied between May and October 1998. The recipient group was a random sample of 843 one-parent MFIP families who were not new applicants.³ Since DHS sampled a higher proportion of new applicants than other recipients, our sample included all of the families in the recipient sample and a subset of the new-applicant sample. We selected this subset of 33 new applicants so that the proportion of new applicants in our sample would be the same as it was in the MFIP population.

Additions to the DHS Sample

To obtain a representative sample of MFIP families from 1998, we supplemented the DHS sample by adding groups they excluded, including (1) two-parent families, (2) families that participated in MFIP field trials, (3) one-parent families in which the parent was ineligible for MFIP, and (4) child-only cases with a relative caregiver. For each of these groups we selected a random sample in the same proportion used in the original DHS recipient sample. Overall, we added 489 families, including 227 two-parent families, 97 one-parent families who participated in the MFIP field trials, 116 one-parent families in which the parent was ineligible for MFIP, and 49 families with a relative caregiver.

Cases Excluded from the Analysis

We dropped 206 cases from our sample because of a lack of income data, including 69 families that lived in another state for at least part of the year and 17 families for which we lacked a social security number for a parent. We excluded all 62 cases that did not have a parent in the household because we lacked good income information about these cases. Finally, we dropped 58 families that met *all* of the following four criteria:

1. Did not file a 2000 tax return in Minnesota,
2. Had no wage record for 2000 in Minnesota's unemployment system,
3. Had less than six months of information during 2000 from any combination of MFIP, General Assistance, Supplemental Security Income, Minnesota Supplemental Aid, workers' compensation, or unemployment insurance payments, and
4. Had less than \$1,000 in reported child support benefits for 2000.

We suspect that any family meeting all of these criteria left Minnesota or had financial support from sources for which we lack data. As Table A.2 shows, our final sample size was 1,159 families, or 85 percent of our original sample.

³ For both the new-applicant sample and the recipient sample, DHS selected six separate random samples, one for each month during this six-month period. We followed the same procedure when we extended the sample to groups excluded by DHS.

Table A.2: Types of Families in Working Sample

	<u>Number of Cases</u>	<u>Percentage</u>
One-parent families in DHS longitudinal sample	774	67%
Families not in DHS longitudinal sample		
One-parent families in MFIP field trials	87	8%
One-parent families without the parent eligible for MFIP	99	9
Two-parent families	199	17
TOTAL	1,159	100%

SOURCE: Office of the Legislative Auditor.

Tracking Changes in Family Composition

To accurately measure each family's economic status and to understand changes in income, we tracked changes in family composition. Our analysis was based on family members living in the household as of December 2000.⁴ If a family split into different households, we used the family living with the MFIP applicant, typically the mother. If we did not have any information as of December 2000, we used the last known family composition prior to December 2000.

We used a variety of sources to track the composition of families, particularly families that left MFIP. If a family was on MFIP in December 2000, we used MFIP records to determine its composition. For families that left MFIP, we first looked at records from Medical Assistance and MinnesotaCare to identify who was living with the family in December 2000. Because of data limitations, we only used MinnesotaCare records to identify new family members, not to identify people who no longer lived with the family.

We also examined income tax returns and property tax refund returns to identify new spouses and children. However, tax records do not indicate whether the spouse is actually living with the family. If MFIP or Medical Assistance (MA) records indicated that the spouse was not living with the family, we assumed that this information was correct. If we did not have current information from MFIP or MA, we included the applicant's spouse if they filed a joint tax return. Finally, if there was conflicting information or unusual circumstances, we used the DHS longitudinal survey to help resolve questions about family composition.

DATA COLLECTION

For most sources, we received administrative data from the relevant state agency about the income and benefits received by all Minnesota recipients in 2000. This electronic data also included each recipient's social security number (or another unique identifier). In the case of programs that provided assistance to a family or

⁴ We excluded children who became 19 by the end of 2000.

household (such as energy assistance) rather than an individual, we received the social security number of the family member applying for the assistance. We then identified the income and benefits for the people in our sample by matching their social security numbers with these databases. Because our unit of analysis was a family, we then aggregated for each family the income received by its members.

We obtained data on privately-generated income from a variety of sources. Specifically, earnings data came from three sources: (1) income data reported to the Department of Human Services for MFIP or MA eligibility, (2) federal and state income tax returns, and (3) wage data reported by employers to the state's unemployment insurance system. Each of these sources has incomplete income information. For example, human service records have little income data after a family leaves MFIP. Income tax data are incomplete because many low-income people do not file tax returns. In addition, people who left Minnesota may file in another state but not in Minnesota. Wage data from the unemployment system are incomplete because certain types of employees are not included in the data system, including the self-employed, workers classified as independent contractors, and federal workers (such as post office employees). Finally, income reported under each of these sources may be under-reported. Because of these limitations, we used whichever source had the highest income. DHS and tax records also had data on unearned income, including interest and dividends, capital gains, and social security benefits.⁵ For individuals for whom we had no income tax data, no unemployment data, and DHS data for only part of the year 2000, we projected their annual income based on their average monthly income during the months that they were a member of an active MFIP case.

We had to collect some of the data from federal tax returns by hand. Unlike state tax data, our office does not have the authority to access federal tax records collected by the Internal Revenue Service. However, the federal tax forms that Minnesotans submit with their state tax forms are considered state data, not federal. For the people who submitted their 2000 tax returns electronically with the state, we received federal income tax data electronically. However, for people who filed paper tax returns, we pulled their federal returns and entered the relevant data by hand. We received all the data from the state tax forms electronically, whether the filer submitted an electronic or paper return.

In our analysis, we also subtracted the Social Security and Medicare payroll taxes that each person paid in 2000. Because we did not have access to the actual amount of taxes paid by individuals, we estimated the amount based on each person's wages/salaries and self-employment income. In 2000, the tax was a straight percentage of wages/salaries (7.65 percent) and self-employment income (15.3 percent).

⁵ The unemployment system only reports wage income, while tax returns and DHS have broad measures of income, including self-employment income and unearned income. As a result, we used the highest income from the following three sources: (1) DHS, (2) tax returns, and (3) wage income from unemployment system plus non-wage income from DHS or tax returns, whichever is higher. While DHS data and tax returns also had unemployment insurance payments, workers' compensation, and child support payments, we obtained data on these income sources directly from the state agency involved and disregarded any of these payments included on tax returns or reported to DHS.

To estimate medical subsidies, we first determined how many months during 2000 that each person in our sample was enrolled in MA, MinnesotaCare, or General Assistance Medical Care (GAMC). For MA and GAMC, we estimated the annual subsidy by multiplying the number of enrolled months by the average monthly public subsidy for all MFIP recipients covered by Medical Assistance.⁶ For MinnesotaCare, we estimated the annual subsidy by subtracting the premium paid by each family member from the actual payment made by the state to the health insurer on behalf of the family member.

In the case of four non-cash programs (Section 8, public housing, National School Lunch, and the Women, Infants, and Children program), we were unable to obtain administrative data on the amount of assistance received. Fortunately, for 596 of our sample families, DHS collected self-reported participation data for these four programs through its longitudinal survey for the year 2000. In the case of housing, DHS also collected information about each family's rent and utility payments. From this information, we estimated the amount of assistance received in 2000.

For each family participating in Section 8, we assumed that its unsubsidized gross rent was the area's "fair market rent." For each county or metropolitan area of the state, the U.S. Department of Housing and Urban Development (HUD) establishes "fair market rents," which are set at the 40th percentile of rents charged in the area. Typically, these are the maximum rents that HUD will subsidize. We made this assumption for two reasons. First, because Section 8 families only pay 30 percent of their income for rent, they face in most cases no additional cost by renting a more expensive apartment as long as it is within the fair market rent. Second, according to DHS' longitudinal survey for 2000, average gross rents paid by families not in subsidized housing were 92 percent of the area's fair market rent. We suspect that families receiving Section 8 live in housing that costs at least as much as the unsubsidized housing rented by similar families. We then calculated the Section 8 subsidy by subtracting each family's actual rent payment from the area's fair market rent. Because DHS' longitudinal survey only applies to one month of 2000, we multiplied the monthly subsidy by 12.

We used the same process to estimate the public housing subsidy, but rather than using fair market rents, we used "flat rents" to approximate the unsubsidized gross rent. Each Public Housing Authority determines a "flat rent" for its buildings, which is supposed to reflect the units' market value. While we were unable to get flat rents for all areas of the state, we estimated that flat rents were about 90 percent of fair market rents in 2000 based on information from the Minneapolis and St. Paul public housing authorities. We then assumed each family's public housing subsidy was the difference between 90 percent of the area's fair market rent and the family's actual rent payment.

In the DHS longitudinal survey, families also indicated if their children participated in the National School Lunch program. For each school-aged child in these families, we estimated an annual subsidy by assuming a monthly subsidy of

⁶ We estimated the cost for adults and children separately, based on the average costs for MFIP adults and MFIP children. To estimate the average cost for GAMC enrollees, we applied the average MA cost of MFIP enrollees rather than an average GAMC cost because the GAMC population is much sicker than the MFIP population.

\$44.93 for free lunches and \$36.21 for reduced-price lunches and nine months of participation.⁷ Based on each family's income, we determined if the children were eligible for a free lunch, rather than a reduced-price lunch.

For the Women, Infants, and Children (WIC) program, we used self-reported participation data from DHS' survey and then estimated the portion of calendar year 2000 that each family member was eligible based on the children's ages. For example, if a child was born on July 1, 2000, the mother was eligible for the entire year (six months as a pregnant woman and six months as a new mother) and the infant was eligible for six months. For all eligible individuals, we assumed a monthly benefit of \$30.28, the statewide average benefit for 2000.

ANALYSIS

We then aggregated the income data for each family to determine its income compared with the U.S. Bureau of the Census' official poverty threshold. As discussed in Chapter 2, we compared four measures of income with the poverty threshold. The measures were (1) cash income before taxes (the Census Bureau's official measure), (2) cash income after taxes, (3) cash and non-cash resources excluding medical subsidies, and (4) all cash and non-cash resources. As described in Chapter 2, we settled on cash and non-cash resources without medical subsidies as an estimate that provided a consistent measure for all families in our sample. Using this data, we assessed the economic status of various groups from our sample, based on MFIP participation, family type, race, region, and other demographic factors.

Because we only had data for Section 8, public housing, National School Lunch, and WIC for the families that responded to DHS' longitudinal survey for 2000 (which accounted for a little over half of our complete sample), we sometimes used the limited DHS sample as a proxy for the complete sample. To assess the validity of this assumption, we examined how well the limited DHS sample represented the complete sample. While families that responded to DHS' survey had smaller average incomes and household sizes than the rest of the sample, the two portions of the sample had statistically the same average income as a percentage of the federal poverty threshold, as shown in Table A.3.⁸

In our analyses, we estimated average total resources for the complete sample although we did not have complete data for all of it. As mentioned above, we lacked data on housing, National School Lunch, and WIC subsidies for families that did not take part in or respond to DHS' longitudinal survey for 2000. Because both portions of the sample had similar resources as a percentage of the federal poverty threshold, we assumed that the families that did not respond to DHS' survey had the same average housing, National School Lunch, and WIC subsidy as a percentage of the poverty threshold as the families that responded to

⁷ We calculated the average monthly subsidy by multiplying the program's meal reimbursement rate by 21.79 school days per month. This estimate assumes that eligible children receive the free or reduced-price meal each school day, which is likely an overstatement.

⁸ The various measures of average income as a percentage of the federal poverty thresholds for the two portions of our sample were statistically the same at a 0.05 significance level.

Table A.3: Comparison of Samples

Sample	N	Average Income as a Percentage of the Federal Poverty Threshold		
		Cash Income After Taxes	Food, Energy, and Medical Subsidies	Cash, Food, Energy, and Medical Resources After Taxes
DHS sample families that completed the 2000 survey	596	118%	43%	161%
"Non-survey" families	563	113	44	157
Complete Sample	1,159	116%	44%	159%

NOTE: We have complete data for all families in our sample for cash, food, energy, and medical assistance.

SOURCE: Office of the Legislative Auditor.

the survey did (17 percent). We then applied this percentage to the average poverty threshold for families that did not respond to the survey (\$16,439) to compute an average housing, National School Lunch, and WIC subsidy of \$2,803.

When we compared the average incomes for the various groups in our sample, we assumed that within each group the families that did not respond to DHS' survey had the same average housing, National School Lunch, and WIC subsidy as a percentage of the federal poverty threshold as the families that did respond. For example, we calculated that the average subsidy as a percentage of the poverty threshold was 26 percent for families that responded to the survey and were on MFIP for all of 2000. We then assumed the same average percentage for the "non-survey" families that were also on MFIP for the entire year.