

V. THE EFFECTS OF DIRECT CERTIFICATION ON INELIGIBILITY RATES

Lastly, we turn to estimating the effect of direct certification on rates of ineligibility among certified students in public school districts offering the NSLP. In Chapter IV, we described our methodology for estimating rates of ineligibility among certified students and then presented our estimates of those rates. We separately estimated rates of ineligibility among students certified by application and students directly certified. We then combined these estimates into an estimate of ineligibility among all certified students. Furthermore, we distinguished between two types of ineligibility—(1) administrative ineligibility, reflecting the extent to which certified households failed to comply with program rules, (2) income ineligibility, reflecting the extent to which certified households have income above the income threshold for receiving benefits (and do not receive FS/TANF/FDPIR).

Ultimately, we ended up with the following estimates of ineligibility among certified students:

- ***Ineligibility among students certified by application***

- *Administrative ineligibility*: Estimated by the benefit reduction/termination rate, or the percentage of verified applications in which benefits were reduced or terminated
- *Income ineligibility, lower bound*: Estimated by the percentage of verified applications in which households responded to the verification request and had benefits reduced or terminated (assumes that nonresponders remain eligible)
- *Income ineligibility upper bound*: Estimated by the percentage of verified applications in which benefits were reduced or terminated and whose submitters did not subsequently reapply and become approved for benefits

- ***Ineligibility among directly certified students***

- *Administrative ineligibility*: Estimated by the FS/TANF turnover rate, or the percentage of students on FS/TANF in summer 2001 (eligible for direct certification) who were no longer on FS/TANF in December 2001

- *Income ineligibility*: Estimated by the adjusted FS/TANF turnover rate, which considers December 2001 FS/TANF leavers ineligible only if their household income exceeds 130 percent of the Federal poverty guideline
- ***Ineligibility among all certified students***
 - *Administrative ineligibility*: Estimated by the weighted average of the benefit reduction/termination rate and the FS/TANF turnover rate
 - *Income ineligibility, lower bound*: Estimated by the weighted average of the lower bound among students certified by application and the adjusted FS/TANF turnover rate among directly certified students
 - *Income ineligibility, upper bound*: Estimated by the weighted average of the estimated income ineligibility rate among students certified by application and the adjusted FS/TANF turnover rate among directly certified students

In this chapter, the analysis focuses primarily on the effect of direct certification on the estimated rate of ineligibility among all certified students, particularly on the rate of income ineligibility among this group. We find that direct certification reduces the rate of *income* ineligibility among all certified students by a statistically significant amount, though its estimated effect on the rate of *administrative* ineligibility among all certified students is small and not statistically significant.

We also used districts' reported verification results to estimate the effect of direct certification on the rate of ineligibility among students certified by application. The primary mechanism through which direct certification could influence verification results is by changing the composition of the verification sample. Because directly certified students are not subject to verification, the average characteristics of certified students subject to verification may differ from the average characteristics of all certified students. If some groups are more prone to administrative ineligibility, the change in composition of the verification sample may affect the measured rate of ineligibility. We find that direct certification increases the measured rate of

administrative ineligibility among students certified by application, as indicated by the benefit reduction/termination rate.

A. DISTRICT-LEVEL MODEL OF THE EFFECTS OF DIRECT CERTIFICATION ON INELIGIBILITY

We estimated the effect of direct certification on ineligibility among certified students using the model represented by Equation (1) in Chapter III, page 37. We examined income and administrative ineligibility, as well as estimating the effect of direct certification on rates of ineligibility among both all certified students and students certified by application.

Since ineligibility among certified students depends on the extent to which students who are ineligible for benefits become certified, the same set of district characteristics hypothesized to influence rates of certification among all students are hypothesized to influence certification among ineligible students and are included as control variables in the district-level model of ineligibility. The sample used to estimate this model of the effect of direct certification on ineligibility excludes Provision 2 and 3 schools and districts that selected focused verification samples.

A district's rate of ineligibility among certified students is a continuous variable that takes on values between 0 and 1; we estimated this model using OLS regression techniques. In practice, however, the ineligibility rate among students certified by application took on a value of 0 for a substantial number of districts.⁶⁰ In other words, the distribution of the dependent variable is censored at 0. To account for this censoring of the dependent variable, we conducted

⁶⁰Ten to 16 percent of districts have an estimated rate of ineligibility among all certified students equal to 0 (with the exact amount depending on whether income or administrative ineligibility is being measured). And about one-third of districts have estimated rates of ineligibility among students certified by applications equal to 0. When districts are weighted by the number of certified students in them, the proportions of observations in which the estimated rate of ineligibility is equal to 0 are much lower.

sensitivity tests to determine whether using a tobit model rather than OLS to estimate the effect of direct certification would influence the estimated parameters of the model.

B. ESTIMATED EFFECTS ON INELIGIBILITY AMONG ALL CERTIFIED STUDENTS

We first examined the effects on the estimated upper bound rate of income ineligibility among this group. As described in Chapter IV, this estimate treats the following groups as income ineligible:

- Students certified by application who responded to verification and had their benefits reduced or terminated
- Students certified by application who did not respond to verification, had their benefits terminated, and did not subsequently reapply (and become re-approved) for benefits
- Directly certified students who stopped receiving FS/TANF by December of the school year and who were in households with incomes above 130 percent of poverty

All other certified students are defined as being income eligible according to this definition. This district-level model was estimated for districts in the 37 States that provided FS/TANF data that selected random verification samples.

Estimates from this model indicate that direct certification has a statistically significant negative effect of 4.1 percentage points on the rate of income ineligibility among all certified students (Table V.1). The magnitude of this effect is substantial. If a given district not using direct certification has a rate of income ineligibility of 19.8 percent—the estimate mean among all districts according to estimates presented in Chapter IV—then the results of Table V.1 suggest that the use of direct certification in this district would lead to a decrease of about 20 percent (to 15.7 percent) in this district’s rate of income ineligibility. Given the modest size of the estimated impacts of direct certification on certification and participation, the size of this estimated effect on ineligibility is surprising.

The remaining coefficient estimates in Table V.1 indicate how other district characteristics are related to the estimated rate of income ineligibility among all certified students. This ineligibility rate tends to be higher in larger districts than in smaller districts, and is also related to the racial/ethnic distribution of a district. The rate tends to be lower in districts with a high poverty rate. However, the characteristics of the verification process in a district are not strongly related to its rate of income ineligibility. On the other hand, the ineligibility rate is higher in districts in which single-child applications are used rather than multi-child applications (or other application types).

Overall, the explanatory variables in the model explain only 27 percent of the overall variation in income ineligibility across districts, as indicated by the R^2 value. The explanatory power of this model is much lower than that of the certification and participation models, which had R^2 values of 0.87 and 0.56, respectively. One reason for this lesser explanatory power is that the estimated rates of ineligibility are based on part on the results of districts' verification process, and in smaller districts the verification sample is typically very small and thus subject to substantial random sampling variability.

TABLE V.1

COEFFICIENT ESTIMATES FROM DISTRICT-LEVEL MODEL OF THE IMPACT
OF DIRECT CERTIFICATION ON THE RATE OF INCOME INELIGIBILITY
AMONG CERTIFIED STUDENTS

Variable	Income Ineligibility Among All Certified-Students Model
Intercept	36.23*** (8.49)
District Uses Direct Certification	-4.05** (1.78)
District Formerly Used Direct Certification	4.21 (2.88)
Size of District	
<= 500	-10.61*** (2.85)
501 to 1,000	-3.43 (2.57)
1,001 to 5,000	—
5,001 to 10,000	7.54*** (2.14)
10,001 to 25,000	5.50** (2.70)
> 25,000	10.55*** (2.47)
Proportion of Elementary School Students	2.28 (5.18)
Urbanicity	
Urban	-1.27 (2.18)
Suburban	—
Rural	0.41 (2.01)
Racial/Ethnic Distribution	
Percentage white	—
Percentage black	21.65** (10.63)
Percentage black squared	-24.41* (13.13)

TABLE V.1 (continued)

Variable	Income Ineligibility Among All Certified-Students Model
Percentage Hispanic	30.95** (15.35)
Percentage Hispanic squared	-32.03 (21.21)
Percentage other	1.35 (19.76)
Percentage other squared	-4.51 (21.19)
Proportion of Students who Are “Limited English Proficient”	17.42 (17.09)
Poverty Rate	
Poverty rate within district	-48.31 (23.87)
Poverty rate within district squared	42.58 (45.42)
Poverty rate within county	-21.45 (49.00)
Poverty rate within county squared	73.10 (143.02)
Month Verification Process Completed	
October or earlier	-1.08 (2.33)
November	-1.63 (1.83)
December	—
January or later	-4.90* (2.84)
Type of Verification Sample Selected	
Random sample	—
Focused sample	—
Other	-5.28 (5.08)
Size of Verification Sample Selected	
< 1% of applications	11.07 (3.79)
1 to 2% of applications	2.24 (2.14)
2 to 4% of applications	—
4 to 10% of applications	-0.51 (1.74)

TABLE V.1 (continued)

Variable	Income Ineligibility Among All Certified-Students Model
> 10% of applications	4.72 (4.37)
Type of Application Used	
Single-child	—
Multi-child	-4.51*** (1.75)
Other	-6.98** (2.78)
District Uses Verification for Cause	-0.77 (1.46)
District Uses Electronic Point-of-Sale System	1.45 (1.96)
Mean of Dependent Variable	19.8
R-Squared	0.27
Sample Size	713

Source: 2001 Direct Certification Study SFA Survey.

Note: Standard errors are in parentheses. These models were estimated using ordinary least squares (OLS) regression techniques. Standard errors have been adjusted to account for the complex sample design using the SUDAAN statistical package. In addition to the variables listed above, the model contained binary variables to represent the States in which districts were located (as described in Table III.1). Missing value flags were also included in the model for the proportion of elementary school students, the proportion of students who are limited English proficient, the size of the verification sample selected, the type of application used, and whether the district uses an electronic point-of-sale system.

*Significantly different from zero at the .10 level, two-tailed test.

**Significantly different from zero at the .05 level, two-tailed test.

***Significantly different from zero at the .01 level, two-tailed test.

Table V.2 reports on the results of the estimation of several alternative model specifications. In specification 1b, direct certification is measured by the “adjusted direct certification” variable, in which all districts in the northeastern States except for New York City (including nine districts that reported not using direct certification) are defined as using direct certification. The estimated effect of direct certification in this specification is negative and significant, at -3.7 percentage points. Specification 1c is identical to the basic district-level model except that it uses sample weights based on the number of certified students in each district. In other words, the estimation results from this specification depend to a greater extent on what happens in the largest school districts. The estimated effect of direct certification on the rate of income ineligibility among certified students in this model is negative—at -1.4 percentage points—but it is much smaller than the estimated effect in the basic model and is no longer statistically significant.

Since this student-weighted estimate places more emphasis on what happens in the largest districts, this finding suggests that although direct certification leads to a substantial decrease in the rate of ineligibility in the average district, the effect on the overall rate of ineligibility among all certified students is much smaller. In fact, this smaller estimated effect on ineligibility among students is more in line with the relatively small estimated effect of direct certification on rates of certification and participation. The larger negative effect on ineligibility in the average district (based on the unweighted model) is likely being driven by what is happening in very small districts. Since these small districts also usually have small verification samples, the estimated rates of ineligibility in these districts are also subject to greater sampling variability. Thus, we are inclined to put more faith in the smaller magnitude of the student-weighted estimate.

TABLE V.2

MODEL OF INCOME INELIGIBILITY AMONG ALL CERTIFIED STUDENTS,
ALTERNATIVE SPECIFICATIONS

Specification (R-squared)	Dependent Variable (Mean Value)	Variables in Model Representing Direct Certification	Coefficient Estimate	Standard Error
1a. Basic model (0.27)	Income Ineligibility, All Students (19.8)	DC (binary)	-4.05**	1.78
1b. Basic model with adjusted direct certification variable (0.27)	Income Ineligibility, All Students (19.8)	Adjusted DC ^a (binary)	-3.66**	1.75
1c. Basic model with student-level weights (0.61)	Income Ineligibility, All Students (33.1)	DC (binary)	-1.38	1.67
2. Direct certification effect allowed to differ by number of years it has been in place (0.27)	Income Ineligibility, All Students (19.8)	Number of years:		
		1 to 2	-5.48*	3.00
		3 to 5	-4.26**	2.08
		6 to 10	-3.51*	2.04
		More than 10	-4.02	2.82
3. Direct certification effect allowed to differ by type of direct certification implementation (0.27)	Income Ineligibility, All Students (19.8)	DC implementation type:		
		Non-matching	1.09	4.85
		District matching, passive consent	-5.50***	1.92
		District matching, active consent	-4.72	3.93
		State matching, passive consent	-2.48	2.29
		State matching, active consent	-1.04	5.41
		Mixed	-1.19	5.44

TABLE V.2 (continued)

Specification (R-squared)	Dependent Variable (Mean Value)	Variables in Model Representing Direct Certification	Coefficient Estimate	Standard Error
4. Direct certification effect allowed to differ by the percentage of free certified students who are directly certified (with single DC percentage variable) (0.27)	Income Ineligibility, All Students (19.8)	Percentage of free certified students who are directly certified	-11.02**	4.41
5. Model of the lower bound of income ineligibility among all certified students (0.19)	Lower Bound of Income Ineligibility, All Students (11.5)	DC (binary)	-4.03***	1.40
6. Model of administrative ineligibility among all certified students (0.32)	Administrative Ineligibility, All Students (27.2)	DC (binary)	0.37	1.96

Source: 2001 Direct Certification Study SFA Survey.

Note: These models were estimated using ordinary least squares (OLS) regression techniques. The control variables included in the model were the same as those listed in Table IV.9.

^aThe adjusted direct certification variable is identical to the original direct certification variable except that it defines as direct certification districts all districts in the northeast region (except for New York City), including nine districts that had reported not using direct certification on the SFA survey and defined as non-direct certification districts in the original direct certification variable.

*Significantly different from zero at the .10 level, two-tailed test.

**Significantly different from zero at the .05 level, two-tailed test.

***Significantly different from zero at the .01 level, two-tailed test.

Specifications 2 through 4 presented in Table V.2 allow for the effects of direct certification on the rate of income ineligibility to differ according to the length of time that direct certification has been in place in the district (specification 2), the manner in which it was implemented (specification 3), and the proportion of certified free students who are directly certified in the district (specification 4). The estimated effect of direct certification on the rate of income ineligibility among all students does not appear to vary greatly according to the number of years it has been in place in a district. The effect ranges from -5.5 percentage points for direct certification districts that have used the policy for 1 to 2 years to -3.5 percentage points for those that have used direct certification for 6 to 10 years. The effect is statistically significant for three of the four categories of years of experience.

Specification 3 suggests that the effect of direct certification does vary according to how it is implemented. The estimated effect is strongest in districts using district-level matching, in which the policy is estimated to lead to a decrease in the rate of income ineligibility of 4.7 to 5.5 percentage points (with the latter estimate being statistically significant). The estimated effects of other types of direct certification are all closer to 0 and are not statistically significant. In addition, there is no evidence that the estimated effects of direct certification on income ineligibility differ according to whether districts use active or passive consent in implementing the policy.

In Specification 4, districts' use of direct certification is represented by a continuous variable that indicates the percentage of certified free students who are directly certified. This variable is set to 0 for districts not using direct certification. The coefficient on this indicator of the prevalence of direct certification in a district is negative (-11.0) and statistically significant, and indicates that the rate of ineligibility falls as a larger percentage of certified free students are directly certified. Relative to non-direct certification districts, for example, the estimate suggests

that the rate of income ineligibility among all certified students would be 1.1 percentage points lower in a district with 10 percent of certified free students directly certified, 2.8 percentage points lower in a district with 25 percent directly certified, and 5.5 percentage points lower in a district with half of all certified free students directly certified.

The remaining specifications reported in Table V.2 show estimates of the effect of direct certification on other measures of ineligibility among all certified students. Specification 5 shows the estimated effect on the lower bound of the income ineligibility rate. As described in Chapter IV, the lower bound differs from the estimated rate of income ineligibility used in the basic model in that it classifies all children whose families did not respond to the verification request as income eligible for benefits. The estimated effect of direct certification on this lower bound is similar in magnitude to the estimated effect on the income ineligibility rate used in the basic model. The estimate is -4.0 percentage points, and is statistically significant.

The other measure of ineligibility among all certified students described in Chapter IV is administrative ineligibility. Specification 6 of Table V.2 shows the estimated effect of direct certification on the rate of administrative ineligibility among all certified students. In contrast to the estimated effect of direct certification on income ineligibility, the estimated effect on administrative ineligibility is close to 0 and not statistically significant. In other words, direct certification districts and non-direct certification districts have rates of administrative ineligibility that are about the same, holding other factors equal.

We can better understand why direct certification is estimated to have a negative effect on income ineligibility but no effect on administrative ineligibility by examining the rates of income and administrative ineligibility among directly certified students. As presented in Chapter IV, the estimated rate of administrative ineligibility among directly certified students is 28 percent while the estimated rate of income ineligibility among this group is only 9 percent. Among

students certified by application, the gap between the administrative ineligibility and income eligibility rates is much smaller (27 percent versus 21 percent). In other words, directly certified students are similar to students certified by application in terms of their administrative ineligibility but are much less likely to be income ineligible. This same relationship is evident in the estimated effect of districts' direct certification status on their rates of administrative ineligibility and income ineligibility among all students.

C. ESTIMATED EFFECTS ON INELIGIBILITY AMONG STUDENTS CERTIFIED BY APPLICATION

In this section, we focus more narrowly on the manner in which direct certification may influence ineligibility among students who are subject to the NSLP income verification process. While primary interest focuses on the effects of direct certification on ineligibility rates among all certified students, NSLP rules specify that students certified by application are subject to verification, whereas directly certified students are not subject to verification. This section uses data on the reported outcomes of verification to examine whether direct certification affects those outcomes.⁶¹

Direct certification clearly has the potential to influence verification results without necessarily influencing the eligibility of students being verified, since direct certification changes the pool of students subject to verification. Thus, the interpretation of verification results may be very different depending on whether a district uses direct certification and the proportion of certified students who are directly certified. However, no previous analysis has been conducted to understand how direct certification is related to verification results. The analysis presented in

⁶¹As in the previous section, the analysis excludes districts that selected focused verification samples, so that the verification results being examined would be representative of all students certified by applications in the sampled districts.

this subsection is an attempt to provide such evidence, and thereby provide a firmer basis for interpreting the information obtained from verification efforts.

Table V.3 shows the estimated effects of direct certification on administrative and income ineligibility among students certified by application. The estimated effect of direct certification on the benefit reduction/termination rate, a measure of administrative ineligibility among students certified by application, is positive and statistically significant. All else equal, the benefit reduction/termination rate in direct certification districts is 3.9 percentage points higher than the rate in non-direct certification districts. The most likely explanation for this positive relationship is that direct certification removes from the verification pool those students who are least likely to be found in error and have their benefits reduced or terminated. As a result, the students remaining in the verification pool are more likely to be found in error and the resulting benefit reduction/termination rate is higher.

Students whose benefits are reduced or terminated by the verification process either provided documentation that they were ineligible for the benefits they were receiving or they failed to respond to the verification request. In Chapter IV, we presented estimates indicating that among students whose meal price status was verified, 11 percent provided documentation showing they were ineligible. This was our estimate of the lower bound of the income ineligibility rate among certified students. We also presented an estimate of the income ineligibility rate among students certified by application that started from this lower bound but then also considered students to be ineligible if their benefits were terminated due to nonresponse and they did not reapply for benefits. The mean estimate of this measure of ineligibility was 21 percent.

TABLE V.3

MODEL OF INCOME INELIGIBILITY STUDENTS CERTIFIED BY APPLICATION

Specification	Dependent Variable (Mean Value)	Variables in Model Representing Direct Certification	Coefficient Estimate	Standard Error
1. Administrative Ineligibility Model	Benefit reduction/ termination rate (26.6)	DC (binary)	3.85**	1.96
2. Lower Bound, Income Ineligibility Model	Percentage who responded to verification request and had benefits reduced or terminated (11.3)	DC (binary)	-2.03	1.40
3. Income Ineligibility Model	Percentage who had benefits reduced or terminated and did not reapply for benefits (33.1)	DC (binary)	1.42	1.82

Source: 2001 Direct Certification Study SFA Survey.

Note: These models were estimated using ordinary least squares (OLS) regression techniques. The control variables included in the model are the same as those listed in Table IV.9.

*Significantly different from zero at the .10 level, two-tailed test.

**Significantly different from zero at the .05 level, two-tailed test.

***Significantly different from zero at the .01 level, two-tailed test.

Table V.3 shows that neither the estimated effect of direct certification on the rate of income ineligibility among students certified by application nor the effect on the lower bound of this rate is statistically significant. In particular, the estimated effect of direct certification on the lower bound is –2.0 percentage points and the estimated effect on the rate of income ineligibility is 1.4 percentage points. Thus, while direct certification is estimated to be positively and significantly related to the rate of administrative ineligibility among students certified by application, it is not significantly related to income ineligibility among this group.⁶²

We estimated two main sets of alternative specifications of these models of ineligibility among certified students. First, we estimated these models using tobit regression techniques to account for the fact that a relatively large proportion of districts reported rates of ineligibility among students certified by application at the minimum value of 0 percent.⁶³ We found that the estimated effects of direct certification based on these tobit models are close to the estimates based on the OLS models presented in Table IV.11. In particular, the tobit estimates of the effect of direct certification on ineligibility among students certified by application are 3.8 percentage points (and statistically significant) for administrative ineligibility, –3.5 percentage points (and not statistically significant) for the lower bound of income ineligibility, and 1.1 percentage points (and not statistically significant) for income ineligibility.

Second, we estimated models of ineligibility among certified students using student-level weights. The estimated effect of direct certification in these models depends more heavily on what happens in the largest school districts. These estimates differ from the estimates of the

⁶²This pattern of estimated effects implies that direct certification has no significant effect on the percentage of students whose benefits are reduced or terminated because of documentation they provided in response to a verification request, but has a positive effect on the percentage whose benefits are terminated because of nonresponse.

⁶³Among the 856 districts included in the model estimation, about one-third had a value of 0 for at least one of the ineligibility rates among certified students.

model that did not give more weight to large districts. Again, these student-weighted estimates give a better indication of how direct certification is affecting the average student as opposed to how it is affecting students in the average district. The estimated effects on the rates of both administrative ineligibility and income ineligibility are 6.6 percentage points, and statistically significant. The estimated effect on the lower bound of income ineligibility is 0.5 percentage points, and is not statistically significant.