

Two Studies Assessing the Effectiveness of Early Intervention on the Default Behavior of Student Loan Borrowers

By Charles F. Seifert and Lorenz Wordern

Charles F. Seifert is an associate professor in the School of Business for Siena College in Loudonville, NY. Lorenz Wordern is the former director of debt management initiatives for New York State Higher Education Services Corporation in Albany, NY.

The cost of student loan defaults is a growing problem. At the beginning of this century, defaulted student loans exceed \$25 billion (Student Aid News, 2001). In addition to the costs borne by the taxpayer as the federal government purchases defaulted accounts, there are costs incurred by schools, lenders, loan servicers, and guaranty agencies for default prevention efforts and collection of defaulted loans. Two separate studies were conducted to assess the effectiveness of an early intervention program—the Advocate Unit—in reducing borrower defaults. The first compared the default rate for students participating in the Advocate Unit to the default rate for a sample of the general population of active student borrowers. The results from Study 1 provided strong evidence of the positive effects that an early intervention program can have on the default behavior of student borrowers. Study 2 assessed the longitudinal effects of participation in the Advocate Unit on the default behavior of student borrowers. Although the results from the longitudinal study support the effectiveness of early intervention, the size of the effect is relatively small. The implications of the findings and future areas for research are discussed.

In its first full year of operation (1967), the federal Guaranteed Student Loan Program (GSLP), distributed \$244 million. By 1998, the amount borrowed through the Federal Stafford Loan and Federal Direct Stafford Loan programs (the two federal programs that replaced the GSLP) had increased to more than \$8.4 billion (Higher Education Services Corporation, 1998), which is nearly 35 times more than in 1967. Reasons for the increase in loan volume include increasing levels of participation in higher education (U.S. Department of Commerce, 2000); the increasing cost of education (King, 1997); greater availability of credit (King, 1997); and a leveling off of state and federal grants, such as Federal Pell Grant.

Since the beginning of the federal student loan programs, default rates have been a concern. In the 1990s, the amount spent on defaulted student loans easily exceeded the amount spent on any of the initiatives within the National Institutes of Health, as well as most of the initiatives funded under the Higher Education Act (Flint, 1997). Further, the average student loan delinquency rate through the 1980s and early 1990s compared unfavorably with other types of consumer loans (Student Aid News, 2001).

However, since the U.S. Department of Education's (ED) 1998 default reduction initiative, default rates have declined. Unfortunately, even as default rates drop, the burden on the federal government will continue to increase due to the growing number and dollar amount of student loans outstanding. For example, in 1990, when the default rate was at a record high of 22.4% (Burd, 2000), the total amount of outstanding defaulted student loans was \$12 billion (Student Aid News, 2001). In 1999, however, when the default rate was at 5.6%, the total amount of outstanding defaulted student loans exceeded \$25 billion (Student Aid News, 2001).

Clearly, benefits could be obtained by reducing the student loan default rate. In addition to the costs borne by the federal government in purchasing defaulted accounts, schools, lenders, loan servicers, and guaranty agencies incur costs for default prevention efforts and default collection activities. Further, defaults have negative consequences for delinquent borrowers, as well as for future students who wish to participate in the loan programs.

Numerous public and private programs have been developed to help address the student loan default problem. In these programs, the typical practice is to contact student borrowers once they become delinquent in their payments. Unfortunately, this reactive method of dealing with delinquencies may not be the most effective way to change student borrower behavior. Further, research conducted by New York State Department of Higher Education (HESC) revealed that many borrowers were not aware of available repayment strategies such as deferment and forbearance (HESC, 1998). This study also suggested that borrowers with a better understanding of their repayment options were less likely to default. Further, previous ED studies found that borrowers who withdraw before completion have a greater likelihood of defaulting compared with borrowers who successfully complete their education.

These findings suggest that borrowers should be contacted before their repayment start date and guided toward acceptable repayment plans, available deferments, and forbearance options. In response, HESC created the Advocate Unit, a new segment of the guarantee agency dedicated to using early intervention activities to assist borrowers identified as most likely to default—primarily those who withdraw prior to completing school. Accordingly, Advocate Unit intervention strategies generally start during the grace period, when borrowers are most likely to be unfamiliar with their repayment obligations options, and with the long-term consequences for nonpayment.

The Advocate Unit began operation in January 1999. Its staff received lists of withdrawn borrowers from 19 pilot schools that HESC had recruited to join the project. These schools had 23,249 total loans disbursed during the 1999-2000 academic year. HESC selected schools with both high and low cohort-

Defaults have negative consequences for delinquent borrowers, as well as for future students who wish to participate in the loan programs.

The Advocate Unit staff take specific proactive, sequential intervention steps, using the telephone, mail, fax, and e-mail.

default rates to learn whether attendance at a particular type of school influenced the effectiveness of HESC's early intervention efforts. The chosen schools included a mix of large and small, public and private institutions.

Participating schools sent HESC lists of borrowers who had withdrawn (hereafter referred to as "withdrawn borrowers") within 14 to 60 days from the borrowers' actual separation dates. When HESC later expanded this initiative, it used electronic out-of-school data received from the National Student Loan Data System/National Student Clearinghouse, saving time and expense for participating schools. By 2003, due to the success and reputation of the project, 40 more institutions became Advocate Unit schools. In fact, by refining the processing and adding some staff, HESC was able to add schools without relying on the schools for lists.

When HESC receives or produces lists of withdrawn borrowers, the Advocate Unit staff take specific proactive, sequential intervention steps using the telephone, mail, fax, and e-mail. HESC completes the initial intervention effort immediately upon notice of the borrower's separation date, which is early in the grace period. Intervention efforts continue throughout the grace period and include customized, reader-friendly letters, brochures, self-mailers, postcards, e-mails, and fact sheets. Using an electronic tracking system, the Advocate Unit monitors accounts for follow-up. Intervention efforts continue until each borrower enters repayment or until HESC receives notice of a Default Aversion Assistance Request (DAAR, formerly Pre-Claim Assistance) from the borrower's lender or loan servicer. If HESC receives a DAAR, staff then follow guaranty agency due diligence requirements.

Besides contacting at-risk borrowers who withdraw, HESC's Advocate Unit also receives 15- to 30-day delinquency reports from participating lenders and loan servicers. Each list contains the names of borrowers who previously attended one of the Advocate Unit schools. Advocate Unit staff contact each borrower with information on available repayment options, including general information on deferments and forbearance. This allows HESC to initiate early intervention efforts before guaranty agency due diligence requirements begin formally at DAAR (60-day delinquency) status.

Since both ED and HESC studies have identified unemployment and financial hardship as major contributors to default, Advocate Unit staff members also refer borrowers to external support organizations when appropriate. These include the New York Department of Labor for job and career enhancement strategies, and New York state licensed, not-for-profit credit and debt counseling agencies for debt management and budgeting assistance. The Advocate Unit does not work with accounts that are in DAAR status or beyond the 60th day of delinquency.

The main purpose of this research was to assess the effect of participation in the Advocate Unit on the default behavior of student borrowers. Specifically, we tested the following two propositions:

- The default rate for student borrowers working with the Advocate Unit will be lower than the default rate for a sample of the population.
- The effects will continue to be positive even after the participants are no longer directly involved with the Advocate Unit.

Method

A number of analyses were completed over several years to test the two propositions. The analyses can be broken down into two studies. Study 1 compared the default rate for students participating in the Advocate Unit to the default rate for a sample of the general population of active student borrowers. Study 2 assessed the longitudinal effects of participating in the Advocate Unit.

Study 1

The objective of this study was to assess the effectiveness of the Advocate Unit on the default behavior of student borrowers. Initially, a study (Study 1) was completed after the Advocate Unit was in operation for two years. The study compared the default behavior of Advocate Unit participants with a sample of the population of student borrowers. However, since the Advocate Unit participants were not identical to the population on several criteria, it was necessary to statistically control for numerous variables.

Sample

The analyzed data were divided into the following segments. First, data were obtained on all borrowers who were designated as part of the Advocate Unit between 1999 and 2000 ($n = 5,027$). To select participants in the Advocate Unit, HESC received lists of students withdrawing from 19 pilot schools throughout the state of New York. The participating colleges voluntarily provided the information to HESC. Second, a systematic probability sample of the population of students with active loans at the HESC ($n = 10,810$) was gathered. The systematic probability sample was drawn by selecting a random starting point and then selecting each 260th account from the database of all active borrowers ($n = 2,784,073$). From this sample, the borrowers participating in the Advocate Unit were eliminated, resulting in a sample of 10,810 borrowers. During 1999 and 2000, several additional schools became involved with the Advocate Unit, but the population for this study was limited to students from the original 19 schools participating with the Advocate Unit.

There were a total of 19,877 loans associated with the Advocate Unit borrowers (3.95 loans per borrower) and 40,574 loans associated with the borrowers in the sample (3.75 loans per borrower).

Dependent, Independent, and Control Variables

Dependent Variable: Default Rate. The study focused on the default rates of student borrowers. If borrowers default on one loan, they are considered to be in default on all of their loans. The variable was coded (0) for not in default and (1) for in default. Borrowers were not considered in default if they deferred their loan payments by going back to school.

Independent Variable: Advocate Unit Participation. This variable was predicted to impact the borrower's likelihood to default (the dependent variable). This variable was dichotomous and coded (0) for not being involved with the Advocate Unit and (1) for being part of the Advocate Unit.

Control Variables: Variables that were exogenous to the study but could have influenced the relationship between the independent and dependent variables. Because the sample of participants in the Advocate Unit was not randomly selected, the effect of the exogenous variables needed to be controlled by entering them as covariates. The control variables included the following:

- Total Amount Disbursed: Total dollar amount of student loans disbursed to the borrower, including fees.
- Family Contribution Amount: The average amount of the Expected Family Contribution (EFC) on all loan applications obtained from the Free Application for Federal Student Aid (FAFSA).
- Financial Aid Amount: The average amount of financial aid received per year by the borrower, including scholarships, grants, and work-study. Student loan amounts were excluded.
- Institution Type: The highest degree offered at the school attended by the student (i.e., two-year, four-year, graduate, vocational).
- Enrollment Code: The borrower's enrollment status upon leaving school (i.e., leave of absence, deceased, graduated, withdrawn, never attended, full-time, half-time, less-than-half-time, not enrolled).
- Grace Period Expiration Date: Based on the out-of-school date and length of grace period (the post-enrollment period during which loan payments are not required, as defined in the promissory note).

Results

Table 1 presents descriptive statistics on borrower-level data. Table 2 presents a frequency table for the categorical variables. As a preliminary assessment of the effectiveness of the Advocate Unit, we conducted a *t*-test on the difference between the

Table 1
Descriptive Analysis – Original Study

Variable	Advocate Unit (n = 5,027)		Population sample (n = 10,810)		Mean Difference	t/F ^b
	Mean	SD/SE ^a	Mean	SD/SE ^a		
Default Rate						
Unadjusted	0.02	0.004	0.12	0.003	-0.10	-20.64*
Adjusted	0.07	0.005	0.11	0.003	-0.04	30.18*
Disbursement Total	\$1,756.83	942.33	\$3,032.81	2,091.15	-1,275.98	-41.35*
Family Contribution	\$2,024.15	3,661.80	\$3,579.28	5,745.57	-1,552.12	-17.60*
Financial Aid	\$2,200.90	2,239.38	\$3,268.97	4,004.30	-1,068.06	-17.67*

^aThe standard error is generated for the covariate-adjusted means.

^bAn F-statistic is generated with the covariate-adjusted means.

* $p < .01$

mean default rates for the two groups. The mean for the Advocate Unit (.02) was statistically significantly lower than the mean for the sample of the population (.12) ($t = -20.64$, $p < .01$, $df = 15,835$) (Table 1).

Although this analysis provides preliminary support for the effectiveness of the Advocate Unit, the Advocate Unit sample was statistically significantly different from the population sample in numerous areas, as shown in Table 1 and Table 2. Because of these differences, it is inappropriate to conclude that the difference is attributed solely to Advocate Unit participation. For example, the differences in default rate could be due to differences in family contributions rather than participation in the Advocate Unit.

In an attempt to control for these differences and to make the samples as statistically similar as possible, we conducted a covariate analysis. With this type of analysis, the variance associated with each of the control variables is statistically eliminated from the equation. The covariate analysis also generates adjusted mean values, which then makes it possible to assess the unique contribution of the Advocate Unit on default rates. To compute the adjusted means, a univariate ANOVA was completed.

For the ANOVA, the default rate was the dependent variable and participation in the Advocate Unit was the fixed factor dummy coded as (1) for participating and (0) for not participating. The disbursement total, family contribution, financial aid amount, institution type, enrollment code, and grace period were used as covariates. The adjusted means are presented in Table 1.

The covariate-adjusted default rate for Advocate Unit participants was still lower than the sample of student borrowers. This analysis provides an estimate of how the mean default rates are affected by the differences in the population of Advocate Unit participants and the sample of student borrowers.

Table 2
Frequency Table – Original Study

Variable	Advocate Unit (n = 5,027)		Population Sample (n = 10,810)	
	Frequency	Percent	Frequency	Percent
Institution type				
Two-year school	3,123	62.1	1,642	15.2
Four-year school	751	14.9	1,800	16.7
Graduate school	908	18.1	5,734	53.0
Vocational school	245	4.9	1,634	15.1
Enrollment Code				
Leave of absence	25	0.5	11	0.1
Deceased	2	0.0	4	0.0
Graduated	1,174	23.4	6,860	63.5
Withdrawn	3,822	76.0	3,890	36.4
Never attended	4	0.1	45	0.4

However, the statistical significance of the differences in these default rates is only an estimate of the “true” means. This type of analysis requires a continuous variable, and default is dichotomous (a borrower either defaults or does not default). The analysis is useful in that it does provide an estimate of the means and, unlike other statistical tests, retains the original unit of measurement.

To correct for the weaknesses in the ANOVA analysis, we completed a logistic regression analysis. Logistic regression produces a formula that predicts the probability of the occurrence of a dependent variable as a function of the independent variables. For this analysis, the default rate was regressed on the control variables in the first block. The results from the first block are presented in Table 3. The equation was statistically significant ($\chi^2 = 1,722.07$, $p < .001$, $df = 10$), indicating that at least one of the control variables was statistically significant. The Wald statistic (similar to a t -statistic) is used to assess the significance of the individual variables. The greater the Wald statistic for a variable, the greater the likelihood that the variable will be statistically significant. For the first block, all the control variables were statistically significant. Further, the Nagelkerke R^2 (which operates in the same manner as R^2 in a linear regression model) indicates that 23% of the variance in the dependent variable is predicted by the variance in the control variables.

In the next block, participation in the Advocate Unit was entered into the equation. The results from the second block are also presented in Table 3. This portion of the analysis is particularly relevant because it examines to what degree the Advocate Unit explains changes in student default rates after removing the variance associated with the control variables. The block was statistically significant ($\chi^2 = 143.84$, $p < .01$, $df = 11$),

Table 3
Sequential Logistic Regression – Original Study

Variable	β	SE	Wald Statistic	Fit Statistic
Block 1				
Constant	86.48	3.42	637.99*	
Disbursement Total	0.00	0.00	2.99	
Family Contribution	0.00	0.00	23.19*	
Financial Aid	0.00	0.00	37.93*	
Institution type			598.69*	
Enrollment Code			23.39*	
Grace	0.00	0.00	638.40*	
Block χ^2				1722.07*
Nagelkerke R^2				.23
Block 2				
Constant	71.19	3.60	391.62*	
Disbursement Total	0.00	0.00	9.36*	
Family Contribution	0.00	0.00	35.69*	
Financial Aid	0.00	0.00	14.09*	
Institution type			521.17*	
Enrollment Code			44.65*	
Grace	0.00	0.00	388.29*	
Advocate Unit	-1.33	0.12	125.77*	
Block χ^2				143.84*
Nagelkerke R^2				.25

* $p < .01$

indicating that adding the Advocate Unit explained a statistically significant percentage of the residual variance after the control variables were entered into the model. The Wald statistic for the Advocate Unit was also significant. The Beta (β) weight for the Advocate Unit was negative, indicating that when a person was part of the Advocate Unit, they would be less likely to default.

Summary

In Study 1, the default rate of student borrowers involved with the Advocate Unit rate was significantly lower than the default rate for the sample of the population of active borrowers. However, this analysis could be subject to criticism because the participants involved with the Advocate Unit were not randomly selected. Further, the Advocate Unit sample was statistically significantly different from the sample of student borrowers on numerous variables. However, even after controlling for the potential effects of the differences between the two samples (using sequential logistic regression), inclusion in the Advocate Unit significantly reduced the probability that a borrower would default on his or her student loans.

Study 2

The original study was conducted after the Advocate Unit was in operation for two years. A longitudinal analysis (Study 2) was conducted to assess whether the effects associated with Advo-

cate Unit participation continued after a borrower’s involvement with the Advocate Unit had ended. For this analysis, the default behavior of the groups involved in the first analysis was reexamined one year later.

Sample

All of the members of Study 1 were included in Study 2. The only difference was that loan repayment history data was extended one year and deceased students were removed.

Variables

The same dependent, independent, and control variables were used for the longitudinal analysis.

Results

Table 4 presents descriptive statistics on the borrower-level data. As a preliminary assessment of the effectiveness of the Advocate Unit, we conducted a *t*-test on the difference between the mean default rates for the two groups. The mean for the Advocate Unit (.07) was significantly lower than the mean for the sample of the population (.12) at the *p* < .01 level (*t* = -9.48, *df* = 15,813).

As in Study 1, we conducted an ANOVA to adjust the means for the differences between the population of Advocate Unit participants and the sample of student borrowers. The results from this analysis are presented in Table 4. After adjusting the means, there appears to be no difference. However, as previously indicated, because the dependent variable is dichotomous, the ANOVA just provides an estimate of the covariate-adjusted means. Logistic regression is required to obtain a more precise assessment of the effect of the Advocate Unit on the default behavior of student borrowers.

Table 4
Descriptive Analysis – Longitudinal Study

Variable	Advocate Unit (n = 5,025)		Population Sample (n = 10,790)		Mean Difference	t/F ^b
	Mean	SD/SE ^a	Mean	SD/SE ^a		
Default Rate						
Unadjusted	0.07	0.26	0.12	0.33	-0.05	9.48*
Adjusted	0.11	0.003	0.11	0.005	0.006	0.67
Disbursement Total	1,798.79	1,000.38	3,089.93	2,219.02	-1,291.14	-39.42*
Family Contribution	1,965.36	3,607.34	3,564.42	5,683.10	-1,599.06	-18.30*
Financial Aid	2,141.69	2,187.12	3,244.03	3,977.55	-1,120.34	-18.39*

^aThe standard error is generated for the covariate-adjusted means.

^bAn *F*-statistic is generated with the covariate-adjusted means.

**p* < .01

As in the previous analysis, we used a sequential logistic regression to assess the effect of Advocate Unit participation on default propensity. Again, for the longitudinal analysis the first block was statistically significant ($\chi^2 = 1,552.67, p < .01, df = 15$). Further, after adding participation in the Advocate Unit in the next block, the block was still statistically significant ($\chi^2 = 4.07, p < .05, df = 16$) (see Table 5). Finally, the β weight for the Advocate Unit was negative, indicating that when a person was part of the Advocate Unit, they would still be less likely to default.

Summary

The results from this analysis indicate that participation in the Advocate Unit continues to have a statistically significant positive effect on the borrower default behavior, even over a longer period of time. Although the default rates for the Advocate Unit participants did increase from Study 1, the default rates for sample student borrowers in Study 2 were still lower at the $p < .01$ level, even after controlling for the differences between the two groups.

Discussion

Public investment in higher education has been directed at reducing barriers to entry for more than 30 years (Volkwein, et al., 1998). Since the 1980s, approximately half of the students

Table 5
Sequential Logistic Regression – Longitudinal Study

Variable	β	SE	Wald Statistic	Fit Statistic
Block 1				
Constant	65.25	3.36	377.17**	
Disbursement Total	0.00	0.00	11.75**	
Family Contribution	0.00	0.00	48.11**	
Financial Aid	0.00	0.00	22.01**	
Institution type			504.38**	
Enrollment Code			87.73**	
Grace Period	0.00	0.00	426.59**	
Block χ^2				1,552.67**
Nagelkerke R^2				.20
Block 2				
Constant	62.22	3.67	287.94**	
Disbursement Total	0.00	0.00	13.40**	
Family Contribution	0.00	0.00	50.50**	
Financial Aid	0.00	0.00	17.21**	
Institution type			492.17**	
Enrollment Code			91.22**	
Grace Period	0.00	0.00	315.98**	
Advocate Unit	-.18	0.08	4.07*	
Model χ^2				4.07*
Nagelkerke R^2				.20

* $p < .05$
** $p < .01$

attending four-year colleges and more than 60% of the students attending proprietary schools have borrowed to assist in paying for their education (The College Board, 1992). However, the default rate on student loans has historically been higher than the rates for both consumer loans (American Banker Association, 1994) and home mortgages (Mortgage Bankers Association of America, 1994). The costs associated with defaults have been estimated to account for more than a fifth of the total program costs (Knapp & Seaks, 1992).

In addition to the economic factors, the students are also negatively impacted. Defaulted student loans are not dischargeable with bankruptcy and can negatively impact a borrower's chance for other forms of credit.

These two studies provided support for the effectiveness of the Advocate Unit in reducing the default rate of student borrowers. In each study, the Advocate Unit's early intervention had a positive effect on the default rate of student borrowers. By simply contacting borrowers and discussing various repayment options with them after they withdrew from school and before the end of their deferment period, the Advocate Unit was able to reduce default rates. Although participation in the Advocate Unit was not random, statistical measures were used to make a valid comparison between participants in the Advocate Unit and a sample from the population of student borrowers. In addition, the follow-up longitudinal study found that, after two years, the default rates for individuals who participated in the Advocate Unit were still lower than the default rates for the population.

As with any study, there are potential limitations to the findings. First, although statistical techniques were used to control for differences in the two groups, the conclusions would be stronger if the two groups were more similar. There appears to be potential for self-selection bias in the schools that participate with the Advocate Unit. The Advocate Unit schools are different from the population in the size of the loans, level of family contribution, amount of financial aid received, degree offerings (e.g., associate's versus bachelor's), and reasons the students left school. It is possible that the true effect of the Advocate Unit is suppressed due to these differences. The length of the study also needs consideration. Although a longitudinal effect was found, it would most likely be useful to extend the study to see if the positive effects from Advocate Unit participation are sustainable.

In summary, there is support for the Advocate Unit's positive effect on the default behavior of student borrowers. These findings indicate that through proactive measures, student default rates may be reduced. Given the potential negative impact from defaults, it appears worthwhile to pursue methods that can effectively assist in reducing the default behavior of student

By simply contacting borrowers and discussing various repayment options with them after they withdrew from school and before the end of their deferment period, the Advocate Unit was able to reduce default rates.

borrowers. Because Advocate Unit's effect on the default behavior of the student borrowers appears to diminish over time, it would be interesting to assess the effects that follow-up interactions, or refreshers, might have on default behavior. Finally, it would seem prudent for additional studies to be conducted to directly assess the effect of various default prevention programs on student borrower behavior. By systematically examining the outcomes of various programs, we can help to identify effective default reduction methods, reduce default rates, and enhance the service we provide to students.

References

- American Bankers Association. (1994). Consumer credit delinquency bulletin. Washington, DC: Author.
- Flint, T. A. (1998). Predicting student loan defaults. *Journal of Higher Education*, 68 (3): 322-354.
- Hair, J. F., Tatham, R.L., Anderson, R.E., Black, W. (1998). *Multivariate data analysis* (5th ed.) Upper Saddle River, NJ: Prentice Hall.
- Higher Education Services Corporation (1998). *Student loan payers and defaulters: Borrower behavior in the Federal Family Education Loan Program*. New York: Author.
- King, J. E. (1997). *Student borrowing: Is there is a crisis?* Student loan debt: Problems and prospects. Washington, DC.
- Mortgage Bankers Association of America. (1994). *National delinquency survey*. Washington, DC: Author.
- Student Aid News (2001). "Loan defaults continue drop, reach new low." *Student Aid News*, 28 (19).
- Tabachnick, B. G., and L. S. Fidell (1996). *Using multivariate statistics*. New York: HarperCollins College Publishers.
- U.S. Department of Commerce (2000). *Statistical abstract of the United States*. Available: <http://www.census.gov/statab/www/>
- Volkwein, J. F., B. P. Szelest, Cabrera, A.F., Napierski-Prancl, M.R. (1998). Factors associated with student loan default among different racial and ethnic groups. *The Journal of Higher Education*, 69 (2): 207-237.
- Woo, J. (2000). *Student loan defaults and repayment: Evidence from California*. Paper presented at the Student Loan Repayment Symposium 2000, Washington, DC.