

Aid and Encouragement:

Does a Letter Increase Enrollment Among UI Recipients?

Andrew Barr

Sarah Turner

Texas A&M University

University of Virginia and NBER

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Abstract

Displaced workers may not be fully aware of the federal financial aid and enrollment opportunities available to them. Indeed, incomplete knowledge of financial aid availability and eligibility during the recent recession may have limited the extent to which workers receiving Unemployment Insurance (UI) took advantage of collegiate opportunities. In May of 2009, an executive initiative and guidance from the Department of Labor and the Department of Education encouraged states to send letters to UI recipients. These letters: (1) suggested training as an avenue to better job security and higher wages, (2) informed displaced workers about the Pell grant program, and (3) suggested that displaced workers may be given special consideration for Pell grant receipt. We use variation in the sending of Pell letters within and across states to identify the effect of this information on the college enrollment decisions of millions of individuals who began drawing UI between May 2009 and November 2010. Using the 2008 Panel of the Survey of Income and Program Participation, we find that individuals who are likely to have received a letter are four to five percentage points more likely to enroll in college within the following six months. A back of the envelope calculation suggests that the intervention resulted in an increase in enrollment of at least half a million UI recipients. Individuals exposed to the letter appear to complete additional years of college, though our limited window of observation leaves open long-term questions about the economic return to individuals and society.

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1 Introduction

The sharp erosion of economic conditions associated with the Great Recession led to a dramatic spike in job loss in the U.S., with the unemployment rate rising from 6.5% in October 2008 to 10% in October 2009. As millions of individuals lost their jobs, the federal and state governments came together to encourage displaced workers to use the period of slack labor demand to invest in education. In May 2009, the Department of Labor and the Department of Education issued guidelines intended to encourage post-secondary enrollment among Unemployment Insurance (UI) recipients and to inform these potential students of their likely eligibility for financial aid in the form of Pell grants. At question is whether this very general informational intervention affected the enrollment and subsequent education and labor market outcomes of those experiencing unemployment.

It is well known that job loss comes with a variety of negative consequences (Jacobson, LaLonde, and Sullivan 1993; Couch and Placzek 2010). Displaced workers experience large and long-lasting reductions in income and increases in sickness, disability, and death following job loss. Formal training may attenuate these effects. Indeed, Jacobson and Sullivan (2005) find that completing only a few courses at a community college results in higher earnings for displaced workers.

Yet, even as policy makers frequently extoll the virtues of “job training,” those workers who are unemployed, particularly those who lost their jobs, may face substantial barriers in pursuing post-secondary enrollment. One concern is that workers who have been full-time labor force participants for a number of years may lack the information needed to navigate post-secondary application, financial aid application, and the choice of a post-secondary program well matched to prior achievement and aspirations.

With the Pell grant at a near historical high of \$5500 during the Great Recession, UI recipients would find strong incentives to enroll in post-secondary programs. Indeed, the Pell grant may be a particularly powerful tool in assisting unemployed workers access to post-secondary training options given its monetary size and ease of use at a broad range of

institutions. However, displaced workers might not avail themselves of the Pell grant and other financial aid because they are unaware of its generosity or they find the application process onerous.

There have been a number of purposeful tests of informational interventions designed to affect enrollment and college choice in recent years. Hoxby and Turner (2013) use a large-scale randomized control trial and find that customized information about college application and net price has a substantial effect on where high-achieving, low-income students choose to apply and enroll. Castleman and Page (2014) demonstrate that text messages can be effective in getting recent high-school graduates with college intentions to follow through and enroll. It is quite plausible that other groups of potential students outside these “traditional” sub-populations are poorly informed about the availability of financial aid and the return to post-secondary training opportunities.

Displaced workers are a particularly vulnerable population that may benefit from informational interventions about post-secondary opportunities because they lack the resources, such as guidance counselors, available to high school students considering college. In addition, this population may have particularly robust returns to enrollment during slack labor market conditions. The ad hoc state decisions to send UI recipients a letter of notification about the Pell grant and other training opportunities (“Pell letter”) following the May 2009 federal guidance provides a natural experiment through which we can study the effect of an information intervention at scale (millions were sent letters).

We find that the Pell letter increased the likelihood of enrollment substantially; UI recipients receiving the letter were four to five percentage points more likely to enroll during the following six months. A back of the envelope calculation suggests that the intervention resulted in an increase in enrollment of at least half a million UI recipients. Individuals exposed to the letter were also less likely to be employed and more likely to draw UI over the following year. We observe moderate effects on educational attainment. We observe no improvement in subsequent labor market outcomes; however, our window of observation is

too short to draw strong conclusions. The broad takeaway is that low cost informational interventions may have large impacts on the enrollment behavior of new UI recipients. Some of the affected individuals appear to have completed additional training. Given the foregone earnings during training and the direct costs of post-secondary education born by individuals in the form of tuition payments and the government in the form of financial aid, additional data are needed to assess whether the intervention passes a cost-benefit test.

Our analysis begins with a brief overview of the institutional detail and post-secondary enrollment behavior of the unemployed, the barriers they face, and the existing evidence on how these barriers might be overcome. In the third section, we provide a detailed exposition of the “Pell letters” policy, explaining the implementation along with the observed variation across states. In Section 4, we provide an overview of the data and the descriptive results in our analysis. In Section 5, we cover the estimation approach, which relies on within state variation in Pell letter implementation to identify the effects of the policy on enrollment. Section 6 discusses possible alternative explanations of our findings, and Section 7 concludes.

2 Unemployment Insurance, Post-Secondary Enrollment and Federal Student Aid

2.1 Unemployment Insurance and Post-Secondary Enrollment

Whereas much research focuses on how parameters of the UI program affect the duration of unemployment (see, for example, Meyer 1990 and Chetty, 2008), little research examines how UI program parameters affect post-secondary enrollment (see Barr and Turner, 2015, for a recent addition to this discussion). This is surprising because post-secondary enrollment among UI recipients is substantial. Based on estimates from the 2008 Survey of Income and Program Participation (SIPP), we find that about 13% of UI recipients aged 20 to 40 enroll in a post-secondary program while receiving UI; this participation is even greater (21%) among those 20 to 25, who will have the longest period to accrue benefits from investments

in training. That UI recipients participate in post-secondary education is not a phenomenon unique to the most recent recession. Focusing on dislocated workers receiving UI, Jacobson, LaLonde, and Sullivan (2005a) find 23.5% of women under 35 and 16.8% of men in this age range completed as least one community college course.

The evidence on the return to formal training for UI recipients is limited, but suggests that the gains may be substantial.¹ Jacobson, LaLonde, and Sullivan (2005a, 2005b) present two of the only studies on the return to formal training among displaced workers. They find that an additional year of community college education generates increases in long-term earnings of 7 to 10 percent among displaced workers. Decomposing this effect, they find that the training resulted in both higher wages and additional hours worked.²

Given the potential return to formal training, it is natural to ask what barriers to enrollment exist and what the government might do to remove these barriers. Credit constraints may act as one barrier by limiting UI recipients' capacity to pay tuition and the associated living costs while enrolled. Although primarily designed to relieve near-term credit constraints and facilitate job search, Barr and Turner (2015) provide evidence that increases in the duration of UI benefits have a substantial impact on post-secondary enrollment as well. An additional 10 weeks of benefits increases the enrollment likelihood by about 1.5 percentage points, implying a relative adjustment of around 18%. This marginal enrollment occurs largely at two-year institutions.

A related barrier to enrollment is the extent to which rules prohibit the receipt of UI while enrolled. State-specific rules determine what types of post-secondary courses of study or training programs meet eligibility standards and constitute approved training. If a UI benefit recipient chooses to enroll in a non-approved program, he or she forfeits benefit receipt regardless of whether he or she meets other search and work availability requirements. Whereas virtually any undergraduate program would qualify in some states (e.g., Delaware or

¹There has been somewhat more work on the effects of informal training provided through the Workforce Investment Act (for example, see Andersson et al. (2013) and Heinrich (2009)).

²However, the returns to training were not homogeneous; the effects for technical coursework were generally greater than 10 percent whereas non-technical credit receipt resulted in a small or null increase in earnings.

California), other states limit qualified training to a much narrower set of explicitly vocational programs (e.g., Alabama or South Carolina). Thus, it is not surprising that UI recipient enrollment responds differently to changing enrollment incentives in different states. Barr and Turner (2015) use a binary measure of training leniency to show that the effects of labor market conditions and maximum UI benefit duration are stronger in states that approve a broader set of academic programs.

Recent studies suggest that poor visibility of financial aid programs and “hassle factors” associated with post-secondary enrollment may play an important role as well. Available evidence suggests that low-income students may lack information about the availability of financial aid and, as a result, may be deterred from pursuing post-secondary education because they conclude that post-secondary programs are unaffordable based on “sticker price” (Hoxby and Turner 2013). Similarly, confusing and complicated forms and processes may prevent individuals from accessing aid for which they are eligible (Bettinger, Long, Oreopoulos, and Sanbonmatsu 2012). For students beyond their high school years, information deficits about financial aid and college choice may be particularly acute because they do not have access to high school counselors who may be able to facilitate the enrollment process.

Historically, there has been little policy articulation at the intersection of federal student aid policy and active labor market policies. Indeed, the absence of cooperation between administering agencies—state level employment offices charged with administering UI and the federal Department of Education charged with distributing financial aid—has been widely cited (Carnevale 2009). This lack of cooperation likely exacerbated the information issues and increased the likelihood that the Pell letter would be effective.

3 “Pell Letters” Guidance and Implementation

3.1 “Pell Letter” Guidance

At the height of the fiscal crisis, the Executive Branch, the Department of Labor, and the Department of Education worked together to encourage UI recipients to invest in training. With the May 2009 announcement that nearly 540,000 individuals lost jobs in the prior month, President Obama announced a proactive effort to encourage post-secondary investment by aligning Department of Labor and Department of Education policies. In a speech on May 9, 2009, President Obama noted:

In a 21st century economy where the most valuable skill you can sell is your knowledge, education is the single best bet we can make not just for our individual success, but for the success of the nation as a whole. So if we want to help people not only get back on their feet today but prosper tomorrow, we need to take a rigorous new approach to higher education and technical training. And that starts by changing senseless rules that discourage displaced workers from getting the education and training they need to find and fill the jobs of the future.

The interagency effort attempted to address multiple barriers to investment in training. First, typical state UI rules imposed barriers to enrollment while receiving UI benefits. Second, determination of eligibility for aid relied on prior year earnings or earnings from the last job, which were often inconsistent with the current capacity to pay for displaced workers. Finally, displaced workers might not be well-informed about opportunities for federal financial aid for post-secondary enrollment.

The policy initiatives were multipronged and involved coordinated action from the Department of Labor and the Department of Education. First, in a guidance letter, Secretary of Labor Hilda Solis sent a letter to all states encouraging them to inform all unemployed workers of potential eligibility for federal financial aid for post-secondary enrollment. Secondly, Department of Education Secretary Arne Duncan sent a letter to all post-secondary

financial aid officers explaining the relaxation of determination of aid eligibility for unemployment insurance recipients. At the federal level, these efforts were promoted through the new website, Opportunity.gov. In the words of higher education policy expert Anthony Carnevale (2009), “[w]ith one quick opening step Obama crossed the Mall between the DOE and the DOL.”

The federal guidance was in no way binding and states were given latitude to decide whether to send a letter to UI recipients, when to send the letter, and to whom to send the letter. Roughly forty states had sent or were in the process of sending these letters by the end of 2009 (National Association of State Workforce Agencies 2010). The decision in each state resided with the state employment office. Broadly, the letters sent by the states included two general messages: 1) they encouraged UI recipients to seek training and 2) they informed UI recipients of their likely eligibility for Pell grants.

Beyond information distributed by state employment agencies, the federal Department of Education also provided “guidance” to colleges and universities which was intended to make it easier for institutions to “use ‘professional judgment,’ to adjust aid awards for those workers who had experienced job losses.” The guidance indicated that:

[d]uring this period of economic hardship, you may use the letter from the state unemployment agency, or other evidence that a student is receiving unemployment benefits, to document that the income earned from work of that student is zero for the purposes of adjusting data items for the student on the student’s federal financial aid application. For purposes of implementing this letter only, unemployment benefits can also be considered zero as the Department of Education, in consultation with the Department of Labor and the Office of Management and Budget, has determined that the maximum unemployment benefits available would not have a material impact on the Expected Family Contribution of an independent student. If there are other members of the student’s family for whom you may have evidence of their receiving unemployment benefits, we encourage you to examine the

totality of the family’s economic situation and make any appropriate adjustments. Unemployed individuals will be able to present letters for 90 days from the date of issuance of those letters to an aid administrator for consideration under this guidance. (The letter should not be accepted if you know that an applicant already has obtained other employment.) Other verification of current receipt of unemployment benefits is an acceptable substitute for the state unemployment agency letter. (<http://www2.ed.gov/policy/gen/guid/secletter/090512.html>)

In effect, those able to present information on eligibility for UI were to be treated as having zero income for calculating eligibility for federal financial aid. What is more, the letter sent by state employment offices served as an effective ticket for determination of financial aid eligibility.

The Department of Labor issued an update to the original guidance on July 8, 2009 in which it recommended clarifying the correspondence with UI recipients to make clear the need for beneficiaries to check to make sure any enrollment satisfied the states approved training criteria. In addition, this guidance acknowledged a strong initial impact among states that had sent letters, noting that “[s]everal states that have already sent their initial mailings have experienced a two to three percent response rate.”

3.2 Collecting Information of State-Specific Initiatives

We systematically (and repeatedly) contacted each state to inquire about whether the state workforce agency sent a letter and, if so, the timing and incidence of the letter. Our initial requests were in the form of a survey sent via email (with follow-up). For those non-respondent states, we also sent a paper document by mail. For persistent non-responders, we sent FOIA or public records requests as permitted by state rules requesting a copy of the state’s letter (if one was sent) and other descriptive information on the initiative (see Appendix A1 for additional information).

Figure 1 provides an overview of state participation in the initiative, with the period

from May 2009 to March 2010 displayed across the columns.³ Shaded cells in each state and month indicate that the state sent letters to UI recipients in that month. Overall, at least 40 states and the District of Columbia sent letters and, among those sending, there is wide variation in sending patterns. For example, California and Oklahoma sent the letters for only a short period, whereas others such as New Jersey and Wyoming sent the letters repeatedly. There is also variation in the timing of initial letter sending; although 3 states managed to send letters promptly in June of 2009, the largest addition of states sending letters occurred between July and August 2009, and some states did not send the letter until 2010.⁴ Anecdotal evidence from an external survey suggests that variation in the timing of sending was largely idiosyncratic, but we explore the potential endogeneity issues further in Section 6.

3.3 Mechanism of Impact

Mounting evidence suggests that low-cost information interventions can have large effects on behavior. Notification about the availability of financial aid and encouragement from an authority figure, both of which the letter provided, may serve as a “nudge” to encourage post-secondary enrollment. In addition to providing information about the Pell grant and steps for accessing financial aid assistance, the letters provided contact information for state workforce officials and One-Stop Career Centers. Many of the states’ letters also include language from the federal government’s suggested letter about potential returns such as “[s]tudies have shown that workers with more education and training have more secure jobs and higher wages.”

Whereas encouragement for college attendance and information about the availability of financial aid may influence whether individuals enroll, the impact on educational attainment may be limited. In relation to personal investments, including education choices and

³Maine stopped sending the letters in December 2010 and Wisconsin and Wyoming stopped sending in January 2011. All other states sending the letters in March 2010 continued sending letters throughout the sample period.

⁴This figure masks additional variation generated by whether a state sent the letters to all UI recipients or only new recipients.

health care coverage, response to informational interventions is demonstrably greater when the materials delivered are tailored and well-matched to an individual’s circumstances. Examples include the Kling et al. (2012) examination of how the presentation of personalized cost information affects Medicare Part D subscription, the Hastings and Weinstein (2008) examination of local school choice and the Hoxby and Turner (2013) study of college choice among high-achieving low-income students. What is more, providing encouragement without guidance on the differences in potential benefits (likelihood of completion and future earnings) among colleges may facilitate poorly informed college choice. This may actually hurt intended beneficiaries if induced students forego labor market opportunities or incur substantial debts.

4 Data and Descriptive Results

Our primary source of data on individual behavior is the 2008 Survey of Income and Program Participation (SIPP). The SIPP is a longitudinal survey conducted at 4-month intervals, which contains month-by-month histories of school enrollment, employment, and earnings. Unlike many other surveys, the SIPP contains direct questions about program participation, recording both receipt of UI and receipt of federal student aid including Pell grants.

We restrict the 2008 SIPP panel to individuals aged 20 to 40 who are initially observed receiving UI between October 2008 and November 2010. Beginning in October 2008 allows us to have equivalent information on all individuals prior to initial UI receipt.⁵ We further eliminate any individuals enrolled in the month prior to initial UI receipt. We collapse the data so that it is a repeated cross-section; thus, for an individual in the SIPP there is *at most one observation in our sample corresponding to the year and month of initial UI receipt*.

Table 1 presents descriptive characteristics for our primary sample. As with the popu-

⁵We chose November 2010 as the end date because it provides a balance between sample size and our ability to observe individuals many months after initial UI receipt. Results are robust to shifting the end date in either direction.

lation of UI recipients more generally, individuals in the sample are more likely to be male and less educated than the general population; whereas more than a quarter of individuals in this age group have a bachelor's degree, only 19 percent of UI recipients do.

Through much of the period of observation, the contemporaneous post-secondary enrollment rate of individuals receiving UI is between 10% and 18%. There appears to be a substantial increase in enrollment after the introduction of the policy (Figure 2). Looking at individuals in our sample, about ten percent of UI recipients enroll in school within six months of initial UI receipt. For both the population that received the letter and the population that did not, enrollment rises steadily over the first 6 months of a spell before leveling off (Figure 3). A little more than a third of those enrolled receive Pell grants.⁶

We also examine labor market outcomes, including employment and earnings, both during the period in which recipients are likely to be enrolled and up to three years later. We construct an estimate of annual employment earnings at 6, 12, . . . , 30, and 36 months following initial UI receipt by calculating average earnings over the following three months and converting it to an annual figure. We note that as we approach longer durations, such as 36 months subsequent to initial UI receipt, sample attrition becomes an issue and the power of our estimates diminishes.

We also use administrative data on FAFSA filings obtained from the Department of Education for the 2009 through 2011 filing cycles. The data provide counts of FAFSA filers by state, year, month, and dislocated worker status. They are broken out separately by Pell eligibility, program type (bachelors and academic associates or technical associates and certificates), and age (whether or not the individual was over 30). We use these aggregate FAFSA data to conduct complementary analyses that substantiate our main findings as well as allow us to answer related questions about the types of programs marginal enrollees likely chose and whether Pell eligibility for dislocated workers actually appeared to change following the May 2009 announcement.

⁶Enrollment and Pell receipt are somewhat greater when we restrict to baseline education levels of at least high school but less than a bachelor's degree.

5 Estimation and Empirical Results

To estimate the effect of the Pell letter on post-secondary outcomes, we use both variation between states over time, variation within states in the timing of the contact with UI recipients, and variation in states’ decisions to contact all UI recipients or only new recipients. Using the SIPP data, our primary outcomes of interest include enrollment and Pell grant receipt. We also explore longer-term effects of the intervention on collegiate attainment, employment, and earnings. Each individual in the SIPP contributes at most one observation to the sample and is distinguished by the state and timing of initial UI receipt. Our basic specification is:

$$E_{ist} = X_i\beta_1 + \alpha_s + \lambda_t + \gamma Letter_{ist} + \epsilon_{ist} \quad (1)$$

where E_{ist} is a binary variable indicating whether an individual is enrolled at any point during the six months following initial UI receipt; X_i are indicator variables for age, race, and gender characteristics; and α_s and λ_t are state and year-month fixed effects for the state and month of initial UI receipt. Our primary measure of whether an individual was sent a Pell letter $Letter_{ist}$ is whether a letter was sent to UI recipients of the individual’s type within the six months subsequent to initial UI receipt.⁷ When this variable is equal to one, we refer to individuals as being “treated,” with the associated coefficient gamma representing the treatment effect.

5.1 Baseline Enrollment Estimates

Our baseline results in Table 2 indicate that treatment increased enrollment by four to five percentage points, a large increase off a base of just less than ten percent.⁸ The estimates are robust to the inclusion of local labor market controls (state unemployment

⁷We chose six months as it corresponds to the standard duration of UI benefits; however, the results are robust to using longer or shorter intervals.

⁸ The effects on enrollment within a 12 month window are slightly larger, six to seven percentage points. Results are available from authors upon request.

rate⁹) in column (2), as well as controls for baseline education levels in column (3); these controls include indicator variables for the attainment values contained in the SIPP. In column (4), we restrict the sample to individuals with at least a high-school degree but less than a bachelor’s degree, education levels eligible to receive a Pell grant. The point estimates are similar throughout.¹⁰

Across specifications, the 95 percent confidence intervals are large, including estimates as small as two percentage points, a 20 percent increase off baseline enrollment. These estimates may appear implausibly big for such a light touch intervention; recall that the letter merely encouraged training and noted Pell grant eligibility for displaced workers. However, comments from state workforce agencies at the time suggest the response may have been quite large. For example, Washington noted “approximately a 20% increase in traffic” at its colleges, Utah indicated that the number of UI approved training participants “increase[d] 169% for the 4 months since the state wide notification letters were sent,” Rhode Island noted “a substantial increase in the number of claimants requesting approval to attend training,” Missouri “had a tremendous increase in the number of claimants that are receiving a Pell grant,” and Florida noted “a dramatic increase in the number of inquiries to its call center” (NASWA 2010). The letters were generally very simple, were essentially endorsed by President Obama, and contained easy and direct instructions on how to proceed to pursue training and obtain a Pell grant. Given the existing training information and encouragement provided to most UI recipients, this nudge might have been quite important.

5.2 Enrollment and Financial Aid

Because the intervention placed some focus on Pell eligibility, we might expect to observe increases in Pell grant receipt that are equivalent to or larger than the effects on enrollment.

⁹Although the specifications in the paper contain only the state unemployment rate, the estimates are similarly robust to the inclusion of other measures of labor market conditions including the insured unemployment rate or new jobless claims. Results are available from authors upon request.

¹⁰We have also explored the robustness of the results to different windows of Pell letter receipt, examining the effect of having a letter in the first three, four, or five months from first UI receipt. Estimates are similar across specifications and are similarly robust to the inclusion of state by year trends and the restriction of the sample to individuals in states that ever sent a Pell letter. Results are available from authors upon request.

The estimates in Table 3 indicate that this is not the case; the intervention increased Pell grant receipt by at most two percentage points, substantially smaller than the estimates in Table 2. The disparity in point estimates suggests that most of the marginal enrollees were not Pell recipients. However, the Pell grant receipt question is only asked one time per wave, limiting our confidence in drawing strong conclusions about how the intervention affected Pell receipt or financial aid administrators treatment of dislocated workers' FAFSAs. For this reason, we have obtained data from administrative sources to examine the effects on FAFSA submission and Pell receipt.

5.2.1 FAFSA Analyses

Administrative data on the counts of FAFSAs filed by dislocated worker status, state, year, month, and Pell eligibility provide important corroborating evidence to the evidence from the micro-level survey data available in the SIPP. Using a similar strategy as with the individual-level data, we regress the number of FAFSA applications (a prerequisite to Pell receipt), specified in logs, on the Pell letter indicator with state and year-month fixed effects. In columns (1)-(5) of Table 4, we provide supporting evidence for our earlier results. If the Pell letters are driving the observed increases in enrollment, we should see corresponding increases in FAFSA filing for dislocated workers. The estimate in column (1) indicates that the sending of a Pell letter in a particular state and month increased the number of FAFSAs filed by dislocated workers by 6.3 percent. It is difficult to compare this result with the SIPP results because it is not possible to determine the date of dislocation for individuals who are filing FAFSAs. Despite this, observing a contemporaneous increase in FAFSA filings amongst dislocated workers lends credence to our main estimates from the SIPP data. Furthermore, there is no significant increase in the number of FAFSAs filed when those filed by dislocated workers are excluded (coefficient is 0.009 (se 0.010)).¹¹ The aggregate FAFSA data allow us to learn more about the programs the marginal enrollees likely pursued. In columns (2) and (3), we see suggestive evidence that more of the marginal enrollment accrued at shorter-term

¹¹Not shown in table. Full results available from authors upon request.

certificate or technical associates programs. Columns (4) and (5) suggest the intervention had a stronger *percentage* effect on older individuals; this is consistent with estimates from the SIPP.¹²

The intervention appears to have increased the total number of Pell eligible FAFSAs filed by dislocated workers (column (6)). However, additional analyses using the administrative data suggest that financial aid administrators may not have adjusted their treatment of dislocated workers. First, there is no discernible increase in the *share* of dislocated worker FAFSAs determined Pell eligible during 2009. Second, the timing of letter sending does not correspond with an increase in the *share* of dislocated worker FAFSAs that are determined Pell eligible (column (7)). If the timing of the letter campaign was coordinated with changes in the treatment of dislocated workers aid eligibility, we would expect the share of dislocated worker FAFSAs that are Pell eligible to increase. It does not; in fact, the presence of a letter corresponds with a small decrease in the share Pell eligible.¹³

5.3 Educational Attainment and Labor Market Outcomes

In the short-term, the intensive investments in education observed thus far suggest that individuals may have shifted effort from job search to investment in skills. Indeed, estimates in Table 5 suggest that the enrollment increases generated by the intervention appear to be largely full-time enrollments. Whereas the point estimates are negative or zero for part-time enrollment, treatment increases the likelihood of full-time enrollment by five percentage points. This suggests that in addition to shifting individuals into college, the nudge may have led some UI recipients to dedicate more time to training.

Given the shift to more and more intense training, we would expect that treated individuals might remain unemployed and receiving UI longer. The estimates in Table 6 show that this was the case; treated individuals are several percentage points more likely to receive UI

¹²Full results available from authors upon request.

¹³The lack of an increase may be a result of an offsetting change in the composition of applicants (i.e., the letter may have induced individuals who were ex-ante less likely to be Pell eligible to apply), but it is not clear why this would be the case.

at 6, 12, and 18 months after initial UI receipt. The effects on employment and earnings are a mirror image with negative point estimates over the same period (Table 7).¹⁴ The confidence intervals frequently include zero, but the point estimates suggest large reductions in earnings for those affected by the intervention.

One indicator of the return to the information policy is the persistence of enrollment, as enrollees who do not even complete a term might be considered “mismatched” with college. Although there are some issues with sample attrition, we investigate treatment effects on the total number of months enrolled and on the number of years of college completed at several points after initial UI receipt (Table 8 and Table 9).¹⁵ We constructed these variables using the available enrollment and attainment variables available in the SIPP.¹⁶ In Table 8, we see that treatment results in a significant increase in the number of months enrolled.¹⁷ At 12 months out from initial UI receipt, treated individuals have accrued an additional 0.35 months on average. If we assume that the point estimate on full-time enrollment (0.05) captures the shift into additional enrollment, the 0.4 estimate implies an additional (0.35/.05) 7 months of enrollment per individual over the 12 months since initial UI receipt. The effect is even larger at 24 months out. At this point, treated individuals have accrued about 0.6 additional months on average, implying an additional 12 months of enrollment per individual affected.

Turning to the effects on college attainment, the point estimates suggest that the intervention resulted in an increase of at most 0.08 of a year of college attainment, with most confidence intervals including zero.¹⁸ Applying the earlier transformation suggests that af-

¹⁴Earnings are constructed in annual terms using any earnings observations available during the three months following the period in question. More specifically, we multiply the average reported earnings in the following three months (e.g., months 6, 7, and 8) by 12.

¹⁵As we look at outcomes further from initial UI receipt, sample attrition worsens. We interpret these results with caution, but also note that the basic six-month enrollment results persist when we restrict the sample to individuals who remain in the sample 12, 18, 24, 30, or 36 months. Furthermore, treatment has no effect on attrition using the basic regression framework.

¹⁶For example, if an individual has an associate’s degree we assume she has completed two years of college. If she is enrolled in her fourth year of college, we assume she has completed three years.

¹⁷As we examine completion outcomes, we condition all regressions on baseline educational attainment levels. We use two measures of baseline educational attainment: (1) the educational attainment variable contained in the SIPP and used in previous specifications, and (2) baseline years of college education.

¹⁸Effects on certificate or degree (associate or bachelor) receipt are insignificantly different from zero, although we

affected individuals completed an additional 1.6 years of college education, in line with the effect on additional months enrolled.

Analogous point estimates for employment and earnings two to three years after initial UI receipt indicate no significant difference for treated individuals (Table 10). Although point estimates suggest that these individuals continue to be less likely to be employed and earn less, we cannot rule out earnings increases of as much as 20%. Furthermore, we interpret these results with caution due to the relatively large level of attrition observed towards the end of the SIPP panel.

In Figure 4, we present the trajectory of earnings for treated and untreated individuals. To construct this figure, we regressed earnings for the 20 to 40 year old full SIPP sample on state and year-month fixed effects, demographic characteristics, and baseline education. This removed constant variation in earnings across states as well as variation in earnings generated by over time changes in the severity of the recession. We then averaged the residuals by month since initial UI receipt. We plot these averages for treated and untreated individuals in Figure 4. Earnings for treated and untreated individuals are similar prior to initial UI receipt. Consistent with the regression results, treated individuals have lower earnings in the 18 to 24 months after initial UI receipt at the same time that they are more likely enrolled. By 36 months, their earnings appear to track closely with those of untreated individuals.

The earnings outcomes are consistent with the finding that the intervention caused UI recipients to pursue additional post-secondary training. This training came at the expense of lost earnings during at least the first 18 months following initial UI receipt. Furthermore, these individuals were more likely to take advantage of Pell grants and remained on UI many months following initial receipt, additional costs of the intervention. At question is whether this enrollment resulted in attainment gains that translated into better labor market outcomes, and whether the improved outcomes are worth the associated costs. Two to three years out, the evidence suggests moderate increases in college attainment and no significant

note that the lack of detail in the SIPP's attainment measures limits our ability to measure these effects.

gains in earnings. The point estimates suggest that the intervention increased government expenditures without resulting in improved outcomes for individuals, but the confidence intervals are too wide to rule out meaningful positive effects on earnings.

If we instead assume the estimated earnings effects in Jacobson, LaLonde, and Sullivan (2005), the gains to displaced workers could be more clearly positive. Multiplying the additional 0.1 years of college education by the assumed gain in earnings for a year of community college (9 percent), the baseline annual earnings level (\$25,000), and the number of additional working years (32), and the average treated individual in our sample would stand to earn an additional \$7,200 over their lifetime, about \$4,400 in present discounted value. This estimate is conservative because it assumes a low estimate of earnings and a fixed earnings level. Even under these conservative assumptions, the gain in earnings is roughly equivalent to the average earnings lost over the two to three years since initial UI receipt. Thus, individuals are likely better off if Jacobson, LaLonde, and Sullivan’s estimates are valid in this population. However, the gain to society is less clear. Although the cost of the letter sending itself was quite low, the additional UI and financial aid costs imply that the intervention may have been a net cost to society.

6 Competing Explanations

Although the evidence strongly suggests large enrollment effects of the targeted information, we devote considerable attention to exploring alternative explanations. Specifically, we address concerns related to the endogeneity of Pell letter sending and whether changes to approved training rules, maximum UI benefit durations, and local labor market conditions may have coincided with the treatment. We also briefly discuss the potential endogeneity of UI receipt and the related concerns about the assignment of our treatment variable.

6.1 Policy Endogeneity of Pell Letter Distribution

Whereas the initial policy innovation was a direct federal response to rising unemployment, variation in the rollout of the policy occurred at the state level. Because we are controlling for over time variation with year-month fixed effects, the concern is whether states happened to send Pell letters in months in which new UI recipients were more likely to enroll for some other reason. For example, states may have decided to send the letters when labor market conditions were at their worst. If this were the case, we might observe greater enrollment of UI recipients who received Pell letters merely due to the lower opportunity cost of enrollment. The states' own responses suggest that the timing and duration of letter sending was largely idiosyncratic (NASWA 2010).

We explore this issue more formally by regressing whether a state sent a letter in a particular year and month on state characteristics during that month. We control for state and year-month fixed-effects, thus the estimates indicate whether a state was more likely to have sent a letter during a particular month because it had a larger unemployment rate or maximum UI benefit duration during that month. As no state would have sent (nor did send) a letter prior to the announcement of the initiative, we restrict the sample to years and months after the Pell letter initiative was announced. We find no evidence that states were more likely to send letters when unemployment rates were larger; in fact, although statistically insignificantly different from zero, the point estimates are negative (Table 11). Similarly, states were no more likely to send letters when UI benefit duration maximums were larger. The point estimate is small, negative, and statistically indistinguishable from zero. Results are similar using state characteristics lagged three months to predict Pell letter sending. These estimates suggest: (1) that Pell letter timing was not an endogenous response to labor market conditions or benefit availability, and (2) that labor market conditions and UI benefit availability are not directly responsible for the observed increase in enrollment of UI recipients.

Another potential concern is that states may have changed their approved training rules

at the same time that they began sending letters. To explore this, we collected information from the United States Department of Department of Labor, Employment, and Training Administration’s 2008 through 2011 comparison of state unemployment insurance laws. Because the information is only available at a coarse (annual) level, we are unable to conduct a similar set of regression analyses as those conducted using UI benefit durations and unemployment rates. However, there were very few changes in approved training rules. In contrast, a survey of state workforce agencies in 2009 suggests some changes in the interpretation of approved training rules may have taken place around the time of the American Recovery and Reinvestment Act of 2009. In particular, four states began allowing enrollment in some four-year post-secondary programs, and two states began allowing academic courses “not leading to a specific occupation” as approved training. This is potentially a concern if the timing of these changes was similar to the timing of Pell letter sending. We address this concern by simply excluding these states from the analysis; this leaves the estimates largely unchanged.¹⁹

6.2 UI Receipt Endogeneity

In the main analyses, we have restricted the sample to individuals who received UI and we have assigned treatment based on the month of initial UI receipt. As UI receipt is a necessary condition for receiving a Pell letter, restricting the sample to UI recipients is a natural way to focus the estimation on those individuals eligible for the treatment. However, UI receipt is not entirely exogenous. If individuals with greater propensities to enroll increase UI uptake, the results may be driven by selection into UI receipt and not by receipt of a Pell letter.

One way to address this concern is to assign treatment based on the month of initial unemployment spell for individuals experiencing layoffs instead of the month of initial UI receipt. Because an individual does not choose to experience a layoff, assigning treatment this

¹⁹Excluding these states from the baseline specification in column (1) of Table 2 results in a point estimate of 0.048 (se 0.0198), statistically indistinguishable from that obtained in the unrestricted sample. Full results are available from the authors upon request.

way circumvents the selection concerns associated with using initial UI receipt. We derive an individual’s first month on layoff as the first month experiencing any layoff following at least two months with full month employment. We then assign treatment, likely Pell letter receipt, analogously to how we used the first month of UI receipt previously. As many of these individuals are not UI eligible and/or will not choose to receive UI, we expect smaller treatment effects. In Table A1, we demonstrate that the effects using this strategy are similar, but 20 to 50 percent smaller, than those in Table 2.²⁰

7 Discussion and Conclusion

There have been a number of time and resource-intensive efforts to test how information-based interventions affect individual responses to available public policies and choices in healthcare and education. The “Pell Letter” initiative introduced by the federal government in May of 2009 presents a source of variation in dissemination similar to a randomized control trial, but implemented at scale under real-world conditions. The idiosyncratic nature of state response to this federal policy guidance creates an extraordinary experiment and allows us to examine how an “informational nudge” affects decisions to pursue collegiate attainment among UI benefit recipients. The overall enrollment effects are striking: we observe enrollment increases of four to five percentage points, which are about 40% above the baseline. These results are all the more impressive because estimates from most prior research would suggest that in the overall population it would take an increase in financial aid of between \$1,000 and \$1,500 to produce this magnitude of enrollment response (Dynarski and Scott-Clayton 2013).²¹ Given the scale of the letter intervention, we estimate that it resulted in at least half a million additional individuals enrolling in college in the year

²⁰A related strategy using pre-layoff observables to predict the probability of UI receipt similarly suggests that only individuals with a reasonably large likelihood of UI receipt are responsive to the intervention. Results available from authors upon request.

²¹Although more recent work estimating the effects of financial aid on older students (Barr 2015) suggests that a much larger amount would be necessary.

following initial UI receipt.²²

Yet, whereas the scope for an informational intervention to affect the college enrollment of UI recipients appears quite large, our longer term estimates on earnings after a period of two to three years subsequent to treatment suggest the need for considerable caution. Not only do those receiving the enrollment encouragement fail to demonstrate higher earnings two to three years after initial UI receipt, but they also earn less than the control group during the period of expected enrollment, implying substantial costs with little realized benefits.

We interpret our longer-term results cautiously, but these outcomes raise substantial questions about how UI recipients and older dislocated workers navigate the choice of post-secondary program. One concern is that these potential students receive little guidance and are not well-informed about differences in outcomes among programs (Baum and Scott-Clayton 2013). The result may be considerable attrition and sunk costs, as well as the accumulation of student debt. Unfortunately, the absence of data on the type of institution and curricular program chosen by students in the SIPP limits our capacity to evaluate these choices. Future work will address these questions and provide better estimates of the longer-term effects of the intervention on earnings and employment.

²²Focusing on just our period of analysis, there were nearly 34 million initial claims for UI between June 2009 and November 2010. Using our survey information, we estimate that states sent letters to over 13 million of these claimants. Statistics from the BLS indicate that roughly half of UI recipients are between 20 and 40. If we assume that the letters had no effect on individuals outside of this age range and use a five pp effect of the letters on enrollment, we get a back of the envelope estimate of the increase in enrollment of $13,000,000 \cdot .5 \cdot 0.05 = 325,000$. If we extend the period to include 2011 and continue with these conservative assumptions, we estimate an increase in enrollment of 570,000.

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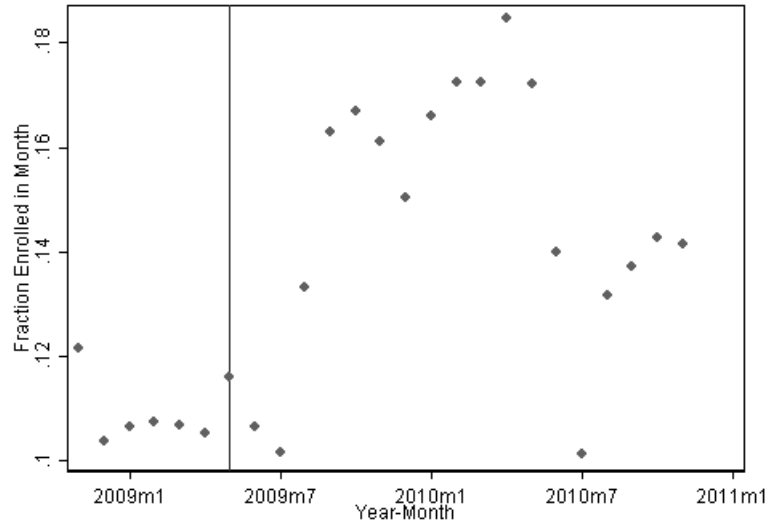
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Figure 1: State “Pell Letter” Sending Patterns



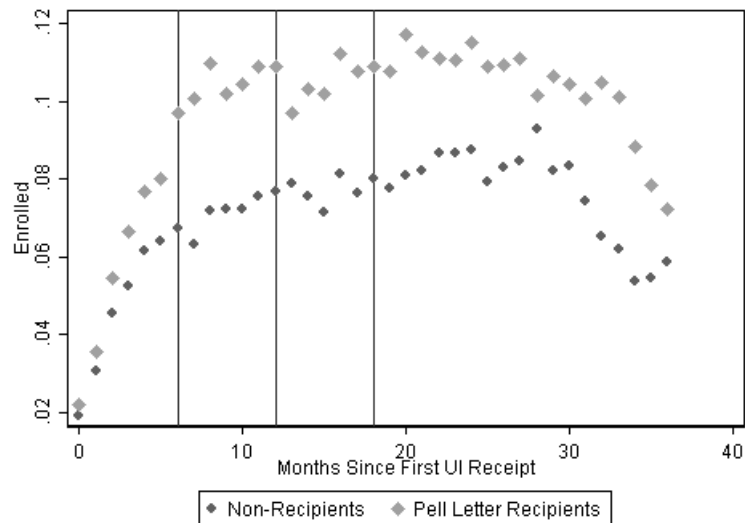
Note: Data are from our survey of state workforce agencies (see Appendix A for additional information). Rectangles shaded black indicate that a Pell letter was sent in a state during that month. The figure presents information from the 40 states and the District of Columbia that sent a Pell letter and responded to our survey. Maine stopped sending the letters in December 2010 and Wisconsin and Wyoming stopped sending in January 2011. All other states sending the letters in March 2010 continued sending letters throughout the sample period. We confirmed that eight states (Arizona, Alabama, Kansas, Nebraska, Nevada, New Hampshire, New Mexico, and North Dakota) did not send a letter. Indiana’s survey response was inconclusive and Tennessee has yet to respond to our requests.

Figure 2: Enrollment of UI Recipients



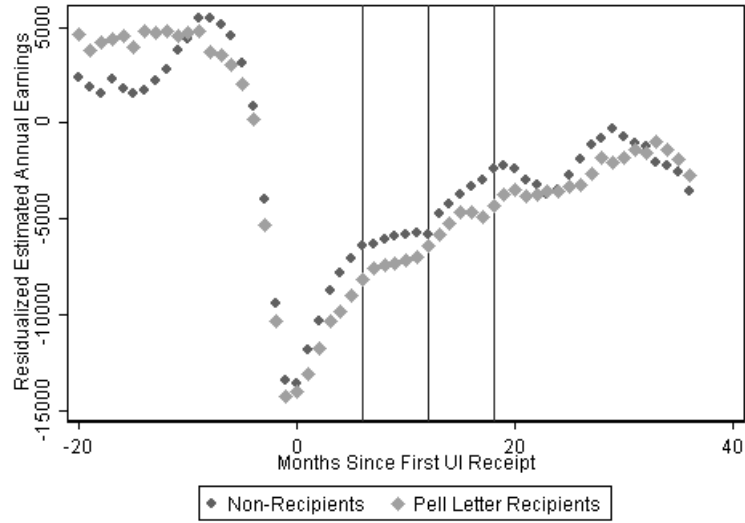
Note: The figure plots the unweighted average enrollment of UI recipients over time using the 2008 SIPP. The sample is restricted to individuals aged 20 to 40. The vertical line indicates the announcement of the federal initiative in May 2009.

Figure 3: Enrollment by Months Since Initial UI Receipt



Note: The figure plots the unweighted average enrollment rates of individuals against the number of months since first UI receipt using the 2008 SIPP. We use the sample restrictions detailed in the text. The vertical lines indicate 6, 12, and 18 months after initial UI receipt.

Figure 4: Earnings by Months Since Initial UI Receipt



Note: Earnings is constructed in annual terms using any earnings observations available during the three months following the time period in question. More specifically, we multiply the average reported earnings in the following three months (e.g., months 6, 7, and 8) by 12. To construct the figure we regressed earnings for the full 2008 SIPP sample (age 20-40) on state and year-month fixed effects. We then restricted the sample using the restrictions outlined in the text and averaged the residuals for UI recipients separately for Pell letter recipients and non-recipients by months since initial UI receipt.

Table 1: Descriptive Statistics of Initial UI Recipients

VARIABLES	(1) Mean
Pell Letter Next 6 Months	0.401
Age	31.00
White	0.785
Black	0.135
Male	0.584
Academic Approved	0.632
HS Degree +	0.900
Some College +	0.588
Associate +	0.282
Bachelors +	0.192
Enrolled Next 6 Months	0.0971
Enrolled Next 12 Months	0.135
Part-time Next 6 Months	0.0442
Full-time Next 6 Months	0.0645
Pell Next 6 Months	0.0374
UI Receipt 6 Months Out	0.516
UI Receipt 12 Months Out	0.367
Employed 6 Months Out	0.451
Employed 12 Months Out	0.516
Employed 18 Months Out	0.609
Employed 24 Months Out	0.648
Baseline Earnings (annualized)	24,250
Earnings 6 Months Out	16,537
Earnings 12 Months Out	18,072
Earnings 18 Months Out	21,761
Earnings 24 Months Out	22,283
Observations	1472

Note: Sample includes individuals age 20-40 from the 2008 SIPP panel. Sample restricted to individuals who first received unemployment compensation between November 2008 and November 2010 and were not enrolled in the month prior to initial UI receipt. Variables of type “_Next X Months” (e.g., Pell Next 6 Months) are binary variables indicated whether the condition was true during any of the six months following first UI receipt. Variables of type “_ X Months Out” (e.g., Employed 6 Months Out) indicate whether the condition was true during any of the three months X months from date of first UI receipt (e.g., Employed 6 Month Out is 1 if an individual is employed in month 6, 7, or 8). Earnings is constructed in annual terms using any earnings observations available during the three months following the time period in question. More specifically, we multiply the average reported earnings in the following three months (e.g., months 6, 7, and 8) by 12. Similarly, baseline earnings is an annual measure generated using the three months prior to initial UI receipt.

Table 2: Enrollment in Six Months Following First Receipt of UI

VARIABLES	(1)	(2)	(3)	(4)
Enrolled (Next 6 Months)	0.041** (0.018)	0.039** (0.018)	0.039** (0.019)	0.051*** (0.019)
Observations	1,472	1,472	1,472	1,042
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell represents a separate regression. Each observation corresponds to an individual’s first spell of unemployment insurance receipt. The dependent variable is whether an individual is enrolled within six months of the first month of UI receipt. The explanatory variable of interest indicates whether a Pell letter was sent in an individual’s state during any of the first six months since the first month of UI receipt. All specifications include age, race, and gender indicator variables as well as state fixed effects. “Education Controls” are indicator variables for all attainment levels. “Education Restrictions” limits the sample to individuals with at least a high-school degree, but less than a bachelor’s degree at initial UI receipt. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * ($p < 0.10$) ** ($p < 0.05$), *** ($p < 0.01$).

Table 3: Pell Grant Receipt in Six Months Following First UI Receipt

VARIABLES	(1)	(2)	(3)	(4)
Pell Grant (Next 6 Months)	0.015 (0.014)	0.013 (0.014)	0.014 (0.014)	0.023 (0.019)
Observations	1,472	1,472	1,472	1,042
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell presents a separate regression. Each observation corresponds to an individual's first spell of unemployment insurance receipt. The dependent variable is whether an individual received a Pell grant within six months of the first month of UI receipt. The explanatory variable of interest indicates whether a Pell letter was sent in an individual's state during any of the first six months since the first month of UI receipt. All specifications include age, race, and gender indicator variables as well as state fixed effects. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 4: Effect of Pell Letter on FAFSA Submissions of Dislocated Individuals

VARIABLES	(1) All	(2) Bachelor's/ Acad. Assoc.	(3) Certificate/ Tech. Assoc.	(4) < 30	(5) ≥ 30	(6) Pell Eligible	(7) Share Pell Eligible
Pell Letter	0.063*** (0.020)	0.051*** (0.018)	0.073*** (0.027)	0.031 (0.019)	0.078*** (0.022)	0.056*** (0.020)	-0.005** (0.002)

Note: Administrative FAFSA submission data were provided by the Department of Education. Sample restricted to 2009 and 2010 FAFSA cycles and months 1-12 (January through December). Each cell presents a separate regression. Each observation corresponds a state and year-month. The dependent variable is indicated by the column header. Columns (1)-(6) are in logs. For example, column (1) has the log of the number of FAFSAs filed by all dislocated workers and column (2) has the log of the number of FAFSAs filed by dislocated workers for bachelor's or academic associate's degree programs. The dependent variable in column (7) is the fraction of FAFSAs that were determined Pell eligible in each state and year-month. The explanatory variable of interest indicates whether a Pell letter was sent in that state in that year-month. All specifications include state fixed effects and year-month fixed effects. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 5: Effect of Pell Letter on Enrollment Intensity

VARIABLES	(1)	(2)	(3)	(4)
Full-time	0.047*** (0.015)	0.046*** (0.016)	0.047*** (0.016)	0.054** (0.020)
Mean	0.0614	0.0614	0.0614	0.0746
Part-time	-0.003 (0.012)	-0.005 (0.012)	-0.005 (0.012)	-0.001 (0.013)
Mean	0.0387	0.0387	0.0387	0.0389
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell presents a separate regression. Each observation corresponds to an individual's first period of unemployment insurance receipt. The dependent variable is whether an individual is enrolled part-time or full-time within six months of the first month of UI receipt. The explanatory variable of interest indicates whether a Pell letter was sent in an individual's state during any of the first six months since the first month of UI receipt. All specifications include age, race, and gender indicator variables as well as state fixed effects. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 6: Effect of Pell Letter on UI Receipt

VARIABLES	(1)	(2)	(3)	(4)
UI Receipt (6 Months Out)	0.042 (0.036)	0.045 (0.038)	0.042 (0.039)	0.017 (0.049)
UI Receipt (12 Months Out)	0.069 (0.047)	0.068 (0.048)	0.068 (0.049)	0.052 (0.053)
UI Receipt (18 Months Out)	0.062 (0.038)	0.061* (0.035)	0.065* (0.034)	0.056 (0.040)
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell presents a separate regression. Each observation corresponds to an individual's first spell of unemployment insurance receipt. The dependent variable is whether an individual received any UI benefits during a three month period beginning 6, 12, or 18 months following initial UI receipt. The explanatory variable of interest indicates whether a Pell letter was sent in an individual's state during any of the first six months since the first month of UI receipt. All specifications include age, race, and gender indicator variables as well as state fixed effects. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 7: Effect of Pell Letter on Employment and Earnings Trajectory

VARIABLES	(1)	(2)	(3)	(4)
Employment				
Employment (6 Months Out)	-0.051 (0.045)	-0.049 (0.045)	-0.045 (0.044)	-0.042 (0.053)
Employment (12 Months Out)	-0.043 (0.042)	-0.039 (0.044)	-0.046 (0.045)	-0.047 (0.049)
Employment (18 Months Out)	-0.062* (0.033)	-0.059* (0.034)	-0.064* (0.033)	-0.035 (0.050)
Earnings				
Earnings (6 Months Out)	-2,636 (1,715)	-2,400 (1,654)	-2,385 (1,690)	-1,938 (2,366)
Earnings (12 Months Out)	-2,055 (2,325)	-1,966 (2,370)	-2,270 (2,309)	-1,551 (2,639)
Earnings (18 Months Out)	-2,025 (1,942)	-1,790 (2,011)	-2,435 (2,027)	177 (2,255)
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell presents a separate regression. Each observation corresponds to an individual's first spell of unemployment insurance receipt. The employment dependent variable is a measure of employment beginning 6, 12, or 18 months following initial UI receipt. Earnings is constructed in annual terms using any earnings observations available during the three months following the time period in question. More specifically, we multiply the average reported earnings in the following three months (e.g., months 6, 7, and 8) by 12. More specifically, we multiply the average reported earnings in the following three months (e.g., months 6, 7, and 8) by 12. The explanatory variable of interest indicates whether a Pell letter was sent in an individual's state during any of the first six months since the first month of UI receipt. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 8: Effect of Pell Letter on Total Months Enrolled

VARIABLES	(1)	(2)	(3)	(4)
Months Enrolled (12 Months Out)	0.353** (0.141)	0.339** (0.144)	0.350** (0.147)	0.416** (0.174)
Months Enrolled (18 Months Out)	0.512** (0.194)	0.502** (0.198)	0.523** (0.206)	0.603** (0.264)
Months Enrolled (24 Months Out)	0.587** (0.242)	0.594** (0.248)	0.622** (0.259)	0.714** (0.336)
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell presents a separate regression. Each observation corresponds to an individual's first spell of unemployment insurance receipt. The dependent variable is months of college enrollment. The explanatory variable of interest indicates whether a Pell letter was sent in an individual's state during any of the first six months since the first month of UI receipt. All specifications include age, race, and gender indicator variables as well as state and year-month fixed effects. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 9: Effect of Pell Letter on Years of College Completed

VARIABLES	(1)	(2)	(3)	(4)
Years of College Completed (18 Months Out)	0.042 (0.037)	0.075 (0.050)	0.039 (0.033)	0.060 (0.045)
Years of College Completed (24 Months Out)	0.068 (0.057)	0.104 (0.072)	0.070 (0.050)	0.082 (0.067)
Observations	1,168	827	1,168	827
Year-Month FE	Y	Y	Y	Y
Education Controls	Y	Y		
Mean	1.069	1.069	1.069	0.423
Education Restrictions		Y		Y
Years of College Controls			Y	Y

Note: Each cell presents a separate regression. Each observation corresponds to an individual's first spell of unemployment insurance receipt. The dependent variables related to years of college completion are constructed using various college enrollment and attainment variables. For example, if an individual's years of college completion is set to one if an individual is observed enrolled in a second year of college or observed with an educational attainment level of associates or greater. The explanatory variable of interest indicates whether a Pell letter was sent in an individual's state during any of the first six months since the first month of UI receipt. All specifications include age, race, and gender indicator variables as well as state and year-month fixed effects. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 10: Effect of Pell Letter on Later Employment and Earnings

VARIABLES	(1)	(2)	(3)	(4)
Employment				
Employment (24 Months Out)	-0.009 (0.042)	-0.007 (0.041)	-0.009 (0.039)	0.029 (0.055)
Employment (30 Months Out)	-0.014 (0.036)	-0.014 (0.037)	-0.029 (0.037)	-0.028 (0.056)
Employment (36 Months Out)	-0.031 (0.048)	-0.031 (0.049)	-0.044 (0.047)	-0.057 (0.067)
Earnings				
Earnings (24 Months Out)	-181 (2,453)	-8.62 (2,489)	-514 (2,303)	1,255 (2,889)
Earnings (30 Months Out)	-229 (2,337)	-79.1 (2,379)	-615 (2,366)	956 (2,957)
Earnings (36 Months Out)	1,115 (2,244)	1,112 (2,300)	48.0 (2,110)	952 (2,060)
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell presents a separate regression. Each observation corresponds to an individual's first spell of unemployment insurance receipt. Earnings is constructed in annual terms using any earnings observations available during the three months following the time period in question. More specifically, we multiply the average reported earnings in the following three months (e.g., months 6, 7, and 8) by 12. The explanatory variable of interest indicates whether a Pell letter was sent in an individual's state during any of the first six months since the first month of UI receipt. All specifications include age, race, and gender indicator variables as well as state fixed effects. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to first UI receipt and first received UI between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

Table 11: Endogeneity of Letter Timing

VARIABLES	(1)
State Unemployment Rate	-0.057 (0.066)
State UI Benefit Duration	-0.014 (0.028)
State Unemployment Rate _{t-3}	-0.057 (0.050)
State UI Benefit Duration _{t-3}	0.011 (0.025)

Note: Each cell represents a separate regression. Each observation corresponds to a state and year-month. The sample is restricted to year-months between the first sending of a letter (June 2009) and the last month observed in Figure 1 (November 2011). The dependent variable is a binary variable indicating whether a Pell letter was sent in a state during a particular month. All regressions include year-month and state fixed effects. The state unemployment rate is measured at the year-month level on a 1 to 100 scale and the state maximum UI benefit duration is measured in weeks. Robust standard errors clustered at the state level are in parentheses: * (p<0.10) ** (p<0.05), *** (p<0.01).

8 Appendix A: Pell Letter Survey and Response

We contacted the workforce agency of all 50 states and the District of Columbia with a request for information about each agency's participation in the Pell letter initiative (we have attached a copy of the survey below). Initially, we e-mailed this survey to the commissioner (or equivalent) of each state's workforce agency as well as the analogous leader of related state agencies (e.g., the Department of Labor). For states that did not respond to our initial request, we sent several additional e-mail requests. We followed this with a paper mailing containing hard copies of the survey and pre-paid addressed return envelopes. We followed this with phone calls to the relevant states contacts where possible to encourage survey response. For the states remaining at this point, we submitted public record and Freedom of Information Act requests where possible.

In total, 46 states and the District of Columbia responded to the survey. We archived the responses and Pell letters online.²³ In a separate survey, an additional 3 states indicated that they had not sent a Pell letter and had no intention of doing so (NASWA 2010). We have been unable to obtain a conclusive response from Tennessee.

²³The archive can be accessed at www.people.virginia/~acb3u/research.htm. While 40 states and the District of Columbia indicated that they had sent a letter, only 29 sent copies of their Pell letter with their response.

State Survey

Our research team is evaluating how notification about the availability of educational opportunities affects the post-secondary educational attainment of UI benefit recipients. As you may know, the Department of Labor issued guidance on May 8, 2009:

“To strongly encourage states to: (1) broaden their definition of approved training for Unemployment Insurance (UI) beneficiaries during economic downturns, (2) notify UI beneficiaries of their potential eligibility for Pell Grants and other student aid, and (3) help individuals apply for Pell Grants through One-Stop Career Centers.” [<http://wdr.doleta.gov/directives/attach/TEGL/TEGL21-08acc.pdf>]

Our interest is in understanding how [state] responded to this guidance. In particular, we are interested in whether [state] sent a letter, the associated timing of the mailing, and the population of UI recipients targeted to receive such communication. Our questions follow below:

Did [state] send a letter or other communication to individuals receiving unemployment insurance in response to the federal Pell grant initiative on May 8 2009? Would you please send us a copy as a pdf attachment to email or by regular mail?

If YES:

- a. On what date did [state] first send this letter?
- b. Was the letter sent to all UI recipients or just new recipients at the time of distribution?

All UI recipients
 New UI recipients

- c. Were there any other criteria determining which UI recipients received the letter?
- d. Was this a one-time mailing or has the mailing been repeated for new UI recipients after May 2009?

One time
 Repeated at
 weekly
 monthly interval

If repeated, is this policy ongoing?

Yes No

If no, when were the last letters sent out?

Table A1: Enrollment in Six Months Following First Layoff Experience

VARIABLES	(1)	(2)	(3)	(4)
Enrolled (Next 6 Months)	0.035** (0.017)	0.035** (0.017)	0.035** (0.016)	0.026 (0.022)
Enrolled (Next 12 Months)	0.044** (0.020)	0.045** (0.020)	0.046** (0.020)	0.028 (0.024)
Observations	2,685	2,685	2,685	1,828
Year-Month FE	Y	Y	Y	Y
Unemployment Rate		Y		
Education Controls			Y	Y
Education Restrictions				Y

Note: Each cell represents a separate regression. Each observation corresponds to an individual’s first layoff spell after two months of full-time employment. The dependent variable is whether an individual is enrolled within six months of the first month experiencing layoff. The explanatory variable of interest indicates whether a Pell letter was sent in an individual’s state during any of the first six months since the first month experiencing layoff. All specifications include age, race, and gender indicator variables as well as state fixed effects. “Education Controls” are indicator variables for all attainment levels. “Educ. Restrictions” limits the sample to individuals with at least a high-school degree, but less than a bachelor’s degree at initial UI receipt. All regressions restricted to individuals aged 20-40 who were not enrolled during the month prior to the first month experiencing layoff and first experienced a layoff between November 2008 and November 2010. Data are from the 2008 SIPP. Robust standard errors clustered at the state level are in parentheses: * ($p < 0.10$) ** ($p < 0.05$), *** ($p < 0.01$).