

Faulty Foundation: Parthenon's Analysis of GE Rule Structurally Unsound

INTRODUCTION AND SUMMARY

The Department of Education ("ED") is finalizing its Gainful Employment ("GE") regulation, intended to hold postsecondary career education programs accountable for their students' economic outcomes. Many career education students attend for-profit schools¹ that too often promise great jobs upon graduation, but leave students buried in debt. Just 10 percent of higher education students attend for-profit colleges nationwide, yet borrowers from these schools account for nearly half of all defaults on federal student loans.² ED recently found that a startling 72 percent of programs at for profit schools produced graduates who, on average, earned less than high-school dropouts.³

Despite the overwhelming evidence in favor of reform, the for-profit college industry enlisted The Parthenon Group ("Parthenon"), a consulting firm, to criticize ED's justification for the rule.⁴ Previously ED demonstrated through statistical analysis that student characteristics like race/ethnicity and socioeconomic status only explain a small proportion of the variability in a program's student outcomes. In other words, whether students succeed after leaving school depends more on the performance of their GE program than on the student's characteristics.

Parthenon claims that ED's method is flawed, and proffers its own analysis that, not surprisingly, does its best to excuse schools from responsibility for poor outcomes. The analysis suffers from serious flaws, however, that render the findings biased and impossible to interpret. Below, we outline the most glaring deficiencies in Parthenon's report:

- Shirking Blame through a Logical Fallacy Enrolling low-income and minority students does not free institutions from accountability.
- **Biased Framing of Results** Parthenon argues that ED measures "characteristics of the students, not the effectiveness of the programs"⁵ despite their own results suggesting that institutions account for a significant portion of variability in student outcomes.
- **Omission** Parthenon cherry picks which of ED's models to reproduce, leaving key questions about the for-profit sector unaddressed.
- Selection Bias and Methodological Opacity Both of Parthenon's analyses rely on small subsets of the full GE program population, with insufficient justification for these choices.

Background

Before describing the specific flaws with Parthenon's report, it is helpful to provide background on the GE rule and the analyses that were conducted by both ED and Parthenon. The GE rule currently contains two metrics of student outcomes. A GE program that fails either metric would lose eligibility for federal financial aid.⁶

The first metric is debt-to-earnings ("DTE"), which is a ratio calculated by dividing a student's total student loan debt by his or her discretionary and annual earnings after completing the program. The second metric is program cohort default rate ("pCDR"), or the percentage of former students of a program (irrespective of whether they graduated) in a given year who subsequently default on their student loans, or fail to make a payment for 270 days. These metrics serve as indicators of students' financial outcomes after graduation – if a student cannot find a job after leaving a GE program, she will likely have difficulty paying back her student loans and this should be captured by the outcome metrics. GE programs that have too many students from a particular program default on their debt, or exceed DTE ratios set by ED, lose eligibility for federal financial aid including Pell grants and student loans.

Both ED and Parthenon use multiple regression analysis to estimate how much student and institutional characteristics affect program outcomes. The method uses a set of independent variables, such as Pell eligibility, to predict what impact those variables have on an outcome variable, such as DTE. There are many statistics that are produced using multiple regression, but the one that ED and Parthenon focus on is the R² statistic. R² indicates the proportion of variability in the outcome variable that is predicted by the independent variable(s). In the models we discuss here, a high R² suggests that the independent variables included in the analysis are strongly related to how well a program performs on the GE metrics.

In 2011, ED conducted a regression analysis using student and institutional characteristics to predict students' loan repayment rates outcomes. Rather than looking at the proportion of people defaulting on their loans, repayment rate measures the proportion of students actively paying down the principal on their debt. The earlier draft of the GE rule included such a metric, but was removed in the current draft of the GE rule. ED found that the variability in repayment rate depended a great deal on the institution type (i.e., public or private; 2-year or 4-year, and so on). Commenters pushed back on these findings, arguing that GE outcomes are driven more by student characteristics than institutional characteristics.

In response to these comments, ED conducted an additional two regression analyses in 2014 to determine the impact that student characteristics alone had on (1) the program's DTE rate, and (2) the pCDR for the program in a given year. These analyses found that students' Pell eligibility and minority status accounted for only two percent and twenty percent of the variability in annual earnings and pCDRs, respectively.

Parthenon responded to ED's analysis by conducting its own series of regressions on DTE and pCDRs. Its analytic strategy attempted to "fix" alleged errors in ED's analysis and to present an alternate set of findings that, unsurprisingly, provided very different results. As we will explain below, however, Parthenon's methodology is flawed and their results are unreliable.

Shirking Blame through a Logical Fallacy

Parthenon's analysis is intended to exculpate GE programs from their share of responsibility for poor student outcomes. For-profit schools disproportionately enroll students who are less likely to enter college at all, to earn a postsecondary credential, or to realize their full earnings potential after completion. It is student demographics, Parthenon argues, not school quality, which is actually responsible for high default rates and unaffordable debt levels. Dramatically, they claims that the GE rule will deny low-income, minority, and female students access to higher education and federal financial aid dollars.⁷

Acknowledging that some students face greater barriers, however, does not excuse a program from failing to prepare those students for success. In fact, the reverse is true. To the extent that programs enroll underrepresented students, institutions accepting tuition dollars have a responsibility to provide support and take measures to promote success. As ED pointed out previously: "The Department does not believe that enrolling large numbers of disadvantaged students justifies leaving those students with debts they cannot afford."⁸ The Department is right, and Parthenon's analysis crumbles atop its logical mistake.

Biased Framing of Results

Parthenon also claims that when they correct errors in ED's analysis, the variance in GE outcomes explained by student characteristics increases from less than two percent to around 50 percent. As described above, Parthenon stresses that student characteristics explain the outcomes in GE programs rather than the programs themselves.

Parthenon emphasizes that 50 percent is a much larger number than two percent. Who can argue with that math? But if student characteristics explain 50 percent of the variation in outcomes for GE programs, what about the other 50 percent? Variables related to the institutions themselves, such as the quality of instruction, level of student support, and more, likely account for a large share of this unexplained variability. Parthenon conveniently ignores this obvious conclusion.

Omission

Not only does Parthenon biasedly frame their own data, but they also conspicuously omit certain aspects of ED's analysis. What they choose *not* to replicate is telling and further undermines their results. For example, ED analyzed the current draft rule and found that less than two percent of the variability in DTE rates was accounted for by race and socioeconomic status. When ED added the institution-level predictors of sector and institution type, and the additional demographic characteristics of percentage of title IV recipients that were female, above the age of 24, and having zero EFC, an additional (36-2=) 34 percent of variability was explained.⁹ In contrast, Parthenon makes no attempt to account for sector or institution type, which indicates tacitly accepting the unique impact that institutional characteristics likely have on GE outcomes.

Parthenon is similarly silent on the contribution that ED made in its earlier 2011 analysis.¹⁰ Take a look at Table 4, which shows the impact of student and institutional characteristics have on the repayment rate of student loans:

	Full Model		Pell Only		Race/Ethnicity Only	
	Predictive?	Percent of Total Variance Explained	Predictive?	Percent of Total Variance Explained	Predictive?	Percent of Total Variance Explained
4-year Institutions	Vos	72	Vos	49	No	
Private Nonprofit	Yes	56	Yes	49	Yes	1
Private For-profit	Yes	22	Yes	7	No	-
2-year Institutions				-		
Public	Yes	13	Yes	3	Yes	1
Private Nonprofit	Yes	57	No	39	Yes	13
Private For-profit	Yes	44	Yes	26	No	
Less-than-2-year Institutions						
Public	No		No		Yes	4
Private Nonprofit	Yes	39	Yes	29	No	
Private For-profit	Yes	27	Yes	16	No	
Overall						
All Institutions	Yes	46	Yes	23	Yes	1

Table 4: Summary of Multivariate Regression Analyses

Source: NSLDS and IPEDS.

ED could explain 46 percent of the variability in repayment rates using various student and institutional characteristics.¹¹ It is true that socioeconomic status accounted for 23 percent of the variability (as measured by Pell grant eligibility), but race and ethnicity alone only accounted for one percent. Parthenon spends a lot of time talking about race as an important predictor of academic performance, so their lack of a response to this critical point is telling.

Furthermore, the table above clearly demonstrates that there are considerable differences in the amount of repayment variability explained by institution type (i.e, 4-year, 2-year, and less-than-2-year). We see, for instance, that student and institutional characteristics explain twice as much variability in repayment rates among students at 2-year institutions (where the majority of GE programs are concentrated) than at 4-year institutions (44 percent vs. 22 percent, respectively). Parthenon makes no attempt to incorporate institution type as a predictor variable in its model despite the fact that ED's 2011 analysis shows it is an important determinant in the variability in repayment rates.

As we describe above, the numbers Parthenon published already leave sizable room for institutions to shoulder responsibility for student outcomes. Because Parthenon only selectively replicated ED's predictive analyses, we are suspicious that their report simply cherry-picked helpful findings to further downplay institutional responsibility. Institutions likely have much more responsibility for GE outcomes than Parthenon acknowledges.

Selection Bias and Methodological Opacity

Parthenon's attempt to "fix" ED's sample is even more egregious than the omissions in its model described above. Finding ED's sample lacking despite including roughly three quarters of all for-profit students, Parthenon bases its own model on far fewer students and programs. They provide no explanation for their methodological decisions, despite the glaring flaws. We elaborate on these problems in the sections that follow.

ED's Appropriate Sample Size and Methodology

ED's 2014 analysis focused on a subset of about 8,000 GE programs that had at least 30 students in the cohort for GE calculations.¹² ED's own report explicitly states that of the approximately 4 million students enrolled in GE programs, the subset of programs included in their regression analysis accounts for about 75 percent of the total GE students.¹³ Thus, although ED looked at a subset of programs, these programs are where the vast majority of students in GE programs are concentrated. This was an appropriate methodological decision, as we are concerned with the outcomes in programs where the most students are enrolled.

Debt-to-Earnings Analysis Only Includes Health Programs

In contrast, Parthenon only included about 1,000 health-related programs to estimate the variability in DTE outcomes. They make no mention of how many *students* in GE programs are actually enrolled in health programs. Instead, they argue that this was the appropriate methodological decision because the majority of *programs* fall into this sector.

To the extent that students are not concentrated in the health sector, or to the extent that the health sector differs systematically from other sectors not included in the analysis, Parthenon's results are biased. Parthenon makes no mention of this deficiency and presents no evidence to suggest that their findings are representative of the larger population of GE programs. It is a debilitating analytical flaw because it raises serious question about the generalizability of Parthenon's analysis.

pCDR Outcomes Calculated Using Nine Unknown Institutions...of Parthenon's Choosing

Parthenon also re-analyzes ED's results with regard to pCDRs, This analysis is even worse than what Parthenon presented for DTE, namely because it is based upon data from only nine for-profit institutions and one nationwide group of institutions.

Despite criticizing ED for not disclosing certain methodological details, Parthenon does not include any information about the names or characteristics of these institutions, other than that these are institutions that were "willing to share"¹⁴ their data. Parthenon does provide its readers with descriptive statistics on the approximately 37,000 *students* attending these selected institutions, but this is not the same as describing the demographics of the individual institutions. We therefore have no sense of the way(s) in which this tiny subset of institutions might (and likely does) differ from the larger population of institutions that offers GE programs, and Parthenon makes no attempt to address these potential biases.

Other methodological issues

In addition to the overarching problems with Parthenon's analysis that we have described above, there are numerous other methodological flaws that contribute to the unreliability of their work. To illustrate:

• Parthenon critiques ED for using "averages of averages" by including a variable indicating the percent minority at an institution as a predictor in their model (i.e., averaging the program-level percent minority to reach the institution-level percentage). This is only a problem if the racial composition of a given program differs from the racial composition of the institution as a whole. Parthenon offers no evidence that this is a common occurrence. Without such evidence, this argument is a red herring.

• Parthenon also criticizes ED for using Pell eligibility as a proxy for socioeconomic status, and maintains that expected family contribution ("EFC") is a better measure. This argument is nonsensical because EFC is a key component in determining Pell eligibility – it is difficult to imagine how Pell eligibility would not provide a good indication of EFC.

• Parthenon's and ED's regression models are *predictive*, not *causal*. That is, they tell us which factors provide a good prediction of GE outcomes, not which factors are responsible for causing GE outcomes. Though Parthenon does not explicitly make causal attributions with regard to its analysis, their framing and presentation of their work is strongly suggestive of such a relationship. These descriptive models must be interpreted cautiously as they do not give us any information about the mechanisms that cause suboptimal outcomes in GE programs.

It should come as no surprise that Parthenon developed their report on behalf of the for-profit college sector, for which they appear to have a long history of client-consultant relationship. Their biases are painfully clear – they side with their clients, rather than the students whose economic futures are at stake. Parthenon would have us believe that students are to blame, and that for-profit colleges are excused from any responsibility for the high debt and poor employment outcomes experienced by their students. But even Parthenon's own analysis, which is exaggerated and biased in their favor, proves ED's point: schools likely bear a good deal of responsibility for their students' outcomes.

End Notes:

- ^{1.} Ben Miller, "The Gainful Employment NPRM is Here", *New America: EdCentral*, March 14, 2014, accessed September 5, 2014, http://www.edcentral.org/gainful-employment-nprm/.
- ^{2.} Ed Trust, 2013, Student Loan Default Rates Illustrate Continuing Affordability Issues in Higher Ed, http://www.edtrust.org/dc/press-room/news/student-loan-default-rates-illustrate-continuing-affordability-issues-in-higher-e
- ^{3.} US Department of Education, Protecting Americans from Predatory and Poor-Performing Career Training Programs, http://www.ed.gov/blog/2014/03/protecting-americans-from-predatory-and-poor-performing-career-training-programs/
- ^{4.} Chris Ross, and Nigel Gault, *Gainful Employment Rule Measures the Characteristics of the Students*, Not the Effectiveness of the Programs, (Washington, DC: 2014), accessed August 28, 2014, http://www.parthenon.com/GetFile.
- ^{5.} See title of Parthenon report. See Ross and Gault, *Gainful Employment Rule Measures the Characteristics of the Students, Not the Effectiveness of the Programs.*
- ^{6.} Ben Miller, "The Gainful Employment NPRM is Here", *New America: EdCentral*, March 14, 2014, accessed September 5, 2014, http://www.edcentral.org/gainful-employment-nprm/.
- ^{7.} Ross and Gault, *Gainful Employment Rule Measures the Characteristics of the Students, Not the Effectiveness of the Programs, 3.*
- ^{8.} See ED's 2011 analyses (the "ED 2011 Analysis") in the Federal Register, Vol. 76 No. 113, June 13, 2011, p. 34454.
- ^{9.} ED 2014 Analysis, pp. 16543-16544.
- ^{10.} ED 2011 Analysis, Table 4, p. 34461.
- ^{11.} In the full model, ED included as predictors student characteristics (percent of students who were minority, Pell Grant recipients, female, under 25 years old), institutional resources (per capita instructional expenses, per capita core expenses, growth rate between 2006-2009), and institutional graduation rates (ED 2011 Analysis, p. 34460).
- ^{12.} ED 2014 Analysis, p. 16544.
- ^{13.} ED's 2014 Analysis notes that "of the 37,589 GE programs in the FY 2010 reporting with total enrollment of 3,985,329 students... 7,934 programs, representing 2,914,376 students...were evaluated in the 2012 GE informational rates" (p. 16544).
- ^{14.} Ross and Gault, *Gainful Employment Rule Measures the Characteristics of the Students, Not the Effectiveness of the Programs, 2.*