



The effects of Greek affiliation on academic performance[☆]



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ABSTRACT

We use a difference-in-differences approach to estimate the effects of Greek affiliation on academic performance. There are strong negative effects in some periods but smaller effects in others: fraternity affiliation hurts performance by 0.32 standard deviations in the Freshman Spring; sorority affiliation hurts performance by 0.22 standard deviations in Spring semesters after Freshman year. We estimate both *ceteris-paribus* effects and *non-ceteris-paribus* effects which allow Greek affiliation to influence course choice behavior. We account for censoring of grades and show ignoring censoring leads to attenuation bias. We also document heterogeneity in treatment effects by student preparation and organization social status.

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1. Introduction

Universities across the United States are at a crossroads: what should be done about fraternities and sororities? Those opposed to Greek organizations portray them as hotbeds of drinking, drug use, sexual assault, hazing, racism, and elitism. Those in support of Greek organizations note their participation in community service and charity fund raising, their positive contributions to college social life, and their outsized role in alumni giving. There clearly exists a vibrant debate about whether Greek organizations detract from or contribute to the missions of universities.¹ This paper sheds light on the effects of Greek organizations on a principal component of university missions: academic development of students.

Specifically, this paper quantifies the effects of joining a Greek organization on academic performance. We find evidence of large negative effects in certain semesters but small and insignificant effects in other semesters. Male students experience large nega-

tive effects in the Freshman Spring semester (when recruitment and new member education occurs) and modest negative effects in subsequent semesters.² Comparatively, female students experience modest negative effects in Spring semesters after Freshman year but small and insignificant effects in other semesters.³ This suggests Greek recruitment and initiation is a significant distraction from schoolwork—for men, the burden falls primarily on Freshmen being initiated; for women, the burden is on upper class students responsible for initiation.

We also find evidence that effects vary across students and depend on characteristics of the Greek organization. First, we find students with SAT scores below the median experience strong negative effects while students above the median are less affected. This is especially true for male students. Second, we find Greek organizations with higher social status have stronger negative effects during new member education but smaller effects in subsequent years.

Our analysis focuses on Duke University where an unusual deferred affiliation policy allows us to employ a difference-in-differences (DinD) approach to identify the effects of Greek affiliation on academic performance. Deferred affiliation prevents stu-

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¹ See Flanagan (2014); Perez-Pena and Yaccino (2014), and Beware of Greeks bearing snifters (2015).

² In a preferred specification, the negative effect in Freshman Spring is 0.216 grade points (31.7% of a standard deviation), the negative effect in Fall semesters after Freshman year is 0.132 grade points (19.4% of a standard deviation), and the negative effect in Spring semesters after Freshman year is 0.089 grade points (13.1% of a standard deviation).

³ In a preferred specification, the negative effect in Spring semesters after Freshman year is 0.146 grade points (21.5% of a standard deviation) but only 0.082 grade points (12.1% of a standard deviation) in Freshman Spring and 0.095 grade points (14.0% of a standard deviation) in Fall semesters after Freshman year.

dents from joining Greek organizations in the Fall semester of Freshman year. Intuitively, this allows us to compare the change in academic performance for Greek students before and after they affiliate to the change in performance over the same period for independent students. This double difference approach controls for the possibility that students who join Greek organizations may be initially more or less prepared for academic success than students who remain independent. We show this is an important consideration—especially for female students.

Our analysis also controls for changes in course choice behavior which result from Greek affiliation. Existing literature shows grading standards differ across courses making it possible to selectively choose leniently or harshly graded courses (Johnson, 2003; Sabot & Wakemann-Linn, 1991). If joining a Greek organization leads students to selectively choose easier courses this will mitigate the negative effects of Greek affiliation on grades but only in a superficial manner. We develop methodologies to estimate both a ‘total effect’ which allows for changes in course choice behavior and a ‘partial effect’ which controls for the grading leniency of chosen courses. Furthermore, we show the difference between these effects can be directly interpreted as the effect of Greek affiliation on the grading leniency of chosen courses. Our estimates suggest these behavioral responses have statistically significant mitigating effects in certain settings; ignoring these effects leads to underestimates of the effects of Greek affiliation on academic performance.

Our methodology also adjusts for the contaminating effects of censoring at 4.0 grade points. In our sample, 33.4% of assigned grades are worth 4.0 grade points. This represents substantial right censoring which causes well known econometric concerns (Tobin, 1958). We compare our estimates to OLS estimates and find ignoring censoring leads to estimates attenuated by approximately 19%. Pervasive grade inflation causes substantial right censoring of grades at many post-secondary institutions. Our findings suggest ignoring censoring due to grade inflation may lead to large attenuation bias.

Our paper contributes to rich literatures on the determinants of academic outcomes in higher education and on the effects of Greek affiliation on many aspects of university life.⁴ The two studies most relevant to our work are Grubb (2006) and Walker, Martin, and Hussey (2015). Grubb (2006) finds fraternity involvement decreases final GPA by 2.2% but finds no effect of sorority involvement using data from the University of Delaware. Grubb (2006) controls for SAT scores and state of residence but does not control for other confounding factors, adjust for censoring, or account for changes in course choices.

Walker et al. (2015) use data from Duke University—the same data used in our study—and a propensity score matching estimator to estimate the effects of Greek affiliation on many outcomes including academic performance. The authors find interesting effects on many other outcomes but find insignificant effects of Greek affiliation on academic performance. The selection model used in Walker et al. (2015) employs detailed baseline controls including demographic variables, measures of academic preparation, and responses to survey questions regarding identity and expectations; however, their method does not control for selection on unob-

served variables, adjust for censoring, or account for changes in course choices.

We find evidence that ignoring selection on unobserved variables, failing to account for censoring of grades at 4.0, and failing to adjust for changes in course choice behavior all lead to downward bias in treatment effect estimates. As such, our methodological improvements to account for these factors likely explain why we find significant negative effects of Greek affiliation on academic performance while Walker et al. (2015) find no effects using the same data.

The remainder of this paper is organized as follows: Section 2 provides background information, introduces our administrative data, and reports descriptive statistics. Section 3 discusses our identification strategy. Section 4 presents the details of our empirical specification and discusses threats to identification. Section 5 presents results and Section 6 concludes.

2. Background, data, and descriptive statistics

Greek life is an important component of campus culture at Duke University. There are 34 Greek organizations and 34.9% of all undergraduates ever affiliate with a fraternity or sorority. This level of involvement is quite high by national standards: Duke University ranks 32 in sorority involvement and 62 in fraternity involvement (Most Students in Fraternities, 2013; Most Students in Sororities, 2013).

To give students more time to make informed decisions about affiliating, Duke has a policy of deferred affiliation whereby students cannot affiliate with Greek organizations until the Spring semester of their Freshman year. This is an uncommon policy which provides useful variation for identifying the effects of Greek affiliation on academic outcomes. Intuitively, deferred affiliation allows the econometrician to measure the change in the academic performance of Greek students before and after they affiliate and compare this to the change over the same period for students who remain independent.

The process of Greek affiliation involves a short period of recruitment followed by a longer period of new member education. During recruitment, prospective students attend events hosted by Greek organizations and an informal process of mutual selection determines which students earn ‘bids’ to affiliate.

Following recruitment, prospective members complete new member education—a process known as ‘pledging’—before they are accepted as full members of the organization. New member education can be quite challenging for prospective members and can also be taxing on senior members who participate in education events. For this reason, we estimate separate treatment effects for the Freshman Spring semester (when Greek students complete new member education), Fall semesters after Freshman year (when limited recruitment occurs), and Spring semesters after Freshman year (when Greek students may administer new member education).

As is the case at many universities, Greek organizations at Duke range in their selectivity and social status. To assess whether the effects of Greek affiliation on academic outcomes depend on the social status of an organization we categorize organizations into high status and low status based on a perusal of comments in the forum greekrank.com.⁵

⁴ Notable works on determinants of academic outcomes in higher education include but are not limited to: Arcidiacono, Aucejo, and Hotz (2016), Bound, Lovenheim, and Turner (2010); Bound and Turner (2007); Light and Strayer (2000); Stinebrickner and Stinebrickner (2003, 2004); Zimmerman (2003). Notable works on the effects of Greek affiliation on various outcomes include but are not limited to: Aikins (2011); Astin (1993); Hayek, Carini, O’Day, and Kuh (2002); McCabe and Trevino (1997); Passow, Mayhew, Finelli, Harding, and Carpenter (2006); Pike (2000, 2003); Pike and Askew (1990); Rockey, Beason, Howington, and Rockey (2005); Thompson, Oberle, and Liley (2011); Wechsler, Kuh, and Davenport (1996); Williams and Janosik (2007), and Pascarella and Terenzini (2005).

⁵ greekrank.com is an online forum in which users debate the social hierarchy of Greek organizations at various universities. High status fraternities are: KA Order, Sigma Nu, Delta Sigma Phi, Pi Kappa Phi, Pi Kappa Alpha, Alpha Tau Omega, Sigma Phi Epsilon, and Delta Tau Delta. High status sororities are: Pi Beta Phi, Delta Delta Delta, Kappa Kappa Gamma, Kappa Alpha Theta, Delta Gamma, and Alpha Phi. With this categorization, 61% of sorority members belong to high status sororities and 56% of fraternity members belong to high status fraternities.

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