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on the Quantity and Quality of Student Applications
and Enrollment

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**The Impact of NCAA Men's Basketball Probations
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and Enrollment**

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ABSTRACT: Collegiate sports programs have been characterized as the front porch of a university, serving to publicize the institution and draw students to the door. Previous research in this area has indicated a positive correlation between athletic success and the quantity and quality of students attending the university. Conversely, we seek to analyze if athletic malfeasance, as measured by NCAA probations of men's basketball programs, negatively affects either the quantity or quality of students at a university. Our findings suggest that while basketball probations do not change the overall quantity of applications nor enrollment at a university, there is a significant adverse impact on the quality of freshman enrolling at the university as measured by Scholastic Aptitude Test scores. Our finding suggest that athletics do indeed serve as a front porch to a university and that athletic sanctions in men's basketball have a detrimental effect on the average quality of students attending a university.

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In their recent work on NCAA organization, Sanderson and Siegfried (2017) observe: “When universities incur financial losses on athletics, universities seem to double down, spending even more on salaries for coaches and improving physical facilities, rather than viewing losses as a signal to redeploy assets and efforts.” While this action seems counterintuitive, the authors suggest three reasons for the increase in spending: first, university athletics might attract greater appropriations from state legislators; second, intercollegiate athletics may boost private donations to the university; and third, high-profile sports programs, like other campus amenities, may attract more applicants and thus increase enrollment. Utilizing Peterson’s Undergraduate Panel Data Set coupled with NCAA statistics of men’s basketball win percentages and probations, we empirically address the influence of athletic misconduct on the quantity and quality of student enrollment. Fundamentally, we test the theory of whether athletics are indeed a front porch to a university, drawing students to the door to enroll.

Section 1: Literature Review

Almost all academic articles examining the influence of athletics on student quantity and quality have focused primarily on athletic successes. In one of the earliest works on this topic, McCormick and Tinsley (1987) found there was a positive correlation between a winning football season and an increase in the proximate year’s freshman (Scholastic Aptitude Test) SAT scores. However, Zimbalist (2001) empirical tests revealed no significant relationship between various measures of athletic success (win percentages in football and basketball, appearances in postseason tournaments or bowls, ranking in AP polls, number of All-American players at the school, among others) and an increase in the average school’s SAT scores. Pope and Pope (2008) measured athletic success in terms of playoff berths and found that a school’s success in football or basketball increased applications by two to eight percent. Then focusing on SAT test scores,

Pope and Pope (2008) also found the increase in applications was comprised of both low and high scoring applicants, thereby allowing schools to be more selective in the makeup of incoming freshman class. Lastly, Segura and Willner (2016) used football Bowl Game invitations to examine their impact on university academics and found that Bowl Game invitations served to increase the median SAT scores at several universities.

To our knowledge, only Smith (2015) has analyzed the influence of NCAA sanctions on student applications. In their study, Smith (2015) focused only on football sanctions and found no significant correlation between the number of applications received by a university and football sanctions. Our research differs from Smith (2015) by examining NCAA men's basketball probations and how those (probations?) impact both the quantity and quality of students applying and enrolling at a university.

Section 2: Data and Results

To test the impact of NCAA men's basketball sanctions on a university, we examined both the win percentages and NCAA probations for 119 Division I men's basketball programs for a 13 year period from the 2000 to the 2013 season. The NCAA probation dummy variable is equal to one if a school was on probation during the season. Probations occur when an athletics program at a university violates one of the rules outlined in the NCAA Division I Manual (NCAA rules). During the period of our study 34 Division I men's basketball programs received probationary sanctions for one season.

When a athletic program is found to have engaged in prohibited behavior, the NCAA mandates the following compliance activities from the university, which include but are not limited to the following:

- (a) Submission of compliance reports during the period of probation;

- (b) Acknowledgement in alumni publications, media guides and recruiting materials identifying the violations committed, the terms of probation, and penalties prescribed;
- (c) Written confirmation to the committee that the institution's president or chancellor met with student-athletes, athletics department staff and other relevant parties to personally affirm his or her commitment to NCAA rules compliance, shared responsibility and preserving the integrity of intercollegiate athletics;
- (d) Requiring an institution to announce during broadcast contests, on its website and in institutional publications that it is on probation and the reasons why the probation was prescribed;
- (e) In cases in which an institution is found to lack institutional control and serious remediation is necessary, in-person reviews of the institution's athletics policies and practices by the office of the Committee on Infractions or, in limited circumstances, as appropriate, committee members or a third party;
- (f) Implementation of educational or deterrent programs; or
- (g) Audits for specific programs or teams. (NCAA rule 19.9.5.7 Probation).

We then merged the probation data statistics from the NCAA with the Peterson Undergraduate data set which provided our measure of freshman applications, admissions, and enrollment as well as freshman mean verbal and mathematical SAT scores. Using a fixed effect regression technique to control for differences between universities and over time, we analyzed how NCAA probation influenced applications, admissions, and enrollment as well as SAT test scores at these schools.

In table 1, we report the means of both the dependent and independent variables. For our independent variables, we found that the mean basketball win percentage was .56. We also found that on average two percent of the universities studied received NCAA probations per year; however, twenty-eight percent of the universities evaluated were probationed during that 12 year period. For dependent variables, we found that on average there were 14,002 applicants for our universities and these universities enroll 3,270 freshman per year. To control for size differences between universities we used the natural log of applications and enrollment in our analysis. In

addition, we found that the mean freshman SAT scores for those students was a 490 in verbal and a 508 in math.

We report our results regarding the influence of basketball probations on both the quantity and quality of students enrolled in Table 2. Our results indicate that basketball probations appear to have no significant influence on the number of applications a school receives or the number of freshman enrolled. We do find, however, that for schools whose men's basketball programs have been put on probation by the NCAA, the average applicant's SAT verbal score falls by 50 points the year before the NCAA probation, 76 points the year of the probation, 61 points a year after the probation and 50 points two years after the probation. Additionally, we find that the SAT mathematics score for those applicants falls by 55 points one year before the probation, 83 points the year of the probation, 73 points one year after the probation and 59 points two years after the probation. We find that there is no effect on test scores two years before the probation for either math or verbal SAT scores. We suggest that the effect on test scores one year before the probationary period occurs because of the lag between the detected malfeasance at the university and the official imposition of the probationary sanction.

To provide insight on these test score reductions we converted the measures into percentage reductions with the average of both verbal and math SAT scores at approximately 500 points. Based on this conversion, the percentage decrease in SAT scores range from a ten to sixteen percent reduction. Our results suggest that although NCAA probations for men's basketball programs do not change the number of students enrolled at a university, those probationary sanctions do lower the quality of students who choose to enroll at those institutions.

Section 3: Conclusion

Our research indicates that NCAA sanctions levied against a university's men's basketball program have a negative effect on the quality of student opting to attend that university. While it does not appear that these sanctions directly impact the number of applications or the number of freshmen enrolled at a university, both the average SAT verbal and mathematical scores of the students enrolling at the school are significantly reduced. These figures suggest that athletic malfeasance, as measured by NCAA men's basketball probations, may serve as a signal to prospective students regarding the overall quality of the university, which in turn could lead the most qualified students to seek other institutions of higher learning. Ultimately, our results show that college athletics are indeed a front porch to a university.

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Table 1: Means

Independent Variables	Mean (Standard deviation)
Basketball Win Percentage	.56 (.17)
Basketball Probations per year	2%
Percentage of Schools on Probation during panel	28%
Dependent Variables	Means (Standard deviation)
Freshman Application	14,002 (8858)
Freshman Enrollment	3270 (1669)
Mean SAT Verbal	490 (212)
Mean SAT Mathematical	508 (214)

Colleges = 119 years=13

Table 2: Influence of Basketball Probations

	Log Applications	Log Enrollment	Mean SAT Verbal	Mean SAT Mathematical
Basketball Win Percentage	.007 (.030)	.006 (.020)	-9.27 (29.70)	-15.95 (28.16)
Lead 2: Probation	-.012 (.030)	.013 (.018)	-6.87 (30.58)	-13.63 (29.01)
Lead: Probation	-.009 (.028)	.014 (.019)	-50.29* (27.78)	-54.99** (26.35)
Probation	.003 (.029)	-.002 (.019)	-76.36** (28.47)	-82.65** (27.01)
Lag: Probation	.008 (.027)	-.009 (.018)	-60.95** (27.15)	-72.76** (25.76)
Lag 2: Probation	.008 (.026)	.007 (.017)	-50.46* (26.43)	-58.5** (25.07)
School fixed effects	X	X	X	X
Time fixed effects	X	X	X	X

R-sq				
Within	.547	.222	.055	.076
Between	.033	.0004	.001	.001
Overall	.037	.006	.018	.021

Schools=119 Years=13 *significant at 10% level **significant at 5% level