Spillovers from the Gridiron: Evidence from Women's Collegiate Basketball

Craig A. Depken, II
Department of Economics
Belk College of Business
UNC-Charlotte
Charlotte, NC 28223
Office: 704.687.7484
Fax: 704.687.6442
Email: cdepken@uncc.edu

Courtney Williams
Department of Finance
Belk College of Business
UNC-Charlotte
Charlotte, NC 28223
Email: cwilliams@uncc.edu

Spillovers from the Gridiron: Evidence from Women's Collegiate Basketball

Abstract

This paper empirically investigates whether schools with an intercollegiate football team experience greater attendance at women's basketball games. The empirical question is important because if football increases attendance and hence revenue to other sports then these benefits should be included when considering the net benefits of football. Using a cross-section of 329 Division IA women's basketball programs from 2005-2006, we find that having a football program corresponds with an increase in per-game attendance of approximately 500 people. This spill-over benefit of having a football team should be credited against the costs of starting and maintaining a football team.

JEL Classifications: **L83, I20**

1. Introduction

Division I college football is one of the most popular sports in the United States. In 2006, total attendance at 1,438 Division I NCAA intercollegiate football games was approximately 42.5 million (NCAA, 2006), which compares to 77.5 million people who attended 2,430 regular season Major League Baseball games and 17.3 million people who attended 256 regular season National Football League games. Given the popularity of college football, it has naturally been the focus of a number of studies investigating such issues as whether having a football team detracts from academic funding, whether a football team influences graduation rates of student athletes, and whether football has an effect on the number and quality of applicants, the number of matriculations, the level of alumni donations, and the level of state funding. This paper contributes an empirical investigation of how college football influences the attendance at women's college basketball games.

While women's basketball is traditionally considered a non-net-revenue (NNR) sport, the relative popularity of the sport over time has unquestionably increased. For example, in 1982 there were 273 Division I women's basketball teams, whereas in 2006 there were 324 teams. In 1982, the 32 teams that participated in the first Women's NCAA tournament played to an average in-arena audience of 2,166 people who paid an average of $4.07 per ticket ($8.50 in 2006 CPI adjusted dollars) and the tournament generated approximately $360,000 in total revenue ($752,000 in 2006 CPI adjusted dollars). In 2005, sixty-four teams played to an average in-arena audience of 6,520 who paid an average of $26.87 per ticket, and the tournament generated approximately $6 million in total revenues.

While the increased popularity of the national women's basketball tournament is evident, there are no empirical analyses investigating what influences attendance at women's collegiate basketball games. This paper undertakes such an investigation while considering that the overall demand for a non-revenue sport might be influenced by the overall sports environment on campus. Specifically, we investigate whether schools with football teams enjoy greater attendance at women's basketball games. If having a football team influences attendance at

women's sports, this would represent a positive spillover which is omitted from the net benefits of football to a college or university.

The empirical question is important because if football increases attendance and hence revenue to other sports then these benefits should be included when considering the net benefits of football. On the other hand, if football does not improve attendance at women's basketball games, this would suggest that football does not sufficiently add to school-spirit, at least in the case of women's basketball, reducing the strength of the school-spirit hypothesis.

Using data describing 329 Division IA women's basketball programs from the 2005-2006 season, our empirical strategy relates regular season per-game attendance at Division I women's basketball games to a number of covariates, including women's basketball team quality, recent and past post-season appearances by the women's basketball team, various institutional characteristics, whether the school in question has a football team, differentiating between FBS (formerly known as Division IA) and FCS (formerly known as Division I-AA) teams, and further controlling for football team quality.

A possibly confounding issue is that attendance at women's basketball might be influenced by the overall sport culture or "school-spirit" on campus, which is difficult to measure but also possibly correlated with whether a college has a football team. Thus whether a school has a football team can be considered a treatment, for which instrumental variables is appropriate. We propose two instruments to identify the presence of a college football team: the age of the institution and the number of other in-state football programs. Both instruments pass standard validity tests and are used in a Heckman-style treatment-effect model.

To preview our results, we find that women's basketball team quality and recent and past post-season appearances positively influence per-game attendance at women's basketball games. If we do not account for the treatment bias inherent in having a football team, football has no meaningful impact on women's basketball attendance. However, once controlling for the treatment bias, we find that football provides a positive spillover to women's basketball; football

increases average attendance by approximately 500 people per game, although having a FBS (Division I-A) team conveys no additional increase in attendance.

Our findings suggest that women's basketball programs at schools with a football team might enjoy an increase of $25,000 to $75,000 in ticket revenue alone; there might be additional revenues generated by the consistently higher attendance, for instance concession and memorabilia sales. These additional revenues should be included among the benefits of having a football team. Furthermore, while our results are specific to women's basketball, they suggest that football might provide positive spillovers to other traditionally less popular sports.

2. College Football and Academe: The Existing Literature

The literature investigating the impact of college football on campus is wide ranging from estimating game-day attendance models (Price and Sen, 2003) to the impact of televised games on attendance (e.g., Kaempfer and Pacey, 1986; and Fizel and Bennett, 1989). Other research has looked into whether football success influences alumni donations (e.g., Baade and Sundberg, 1996) and whether football success influences legislative grants (Humphreys, 2006). Further studies have investigated the advertising value of football in terms of overall applications (McEvoy, 2005) and the quality of in-coming freshmen (Murphy and Trandel, 1987). Some have argued that football might act as a substitute for academic pursuits, which might be reflected in lower graduation rates as found by Tucker (1992) and Magnold, Bean, and Adams (2003) but contradicted by Matheson (2006).

While the literature on college football is substantial, there is relatively little investigation into how college football influences the other sports on campus. Rishe (1999) found that more profitable football programs tend to spend more on women's athletics (per athlete) thus suggesting that football has a positive spillover to other sports on campus; this finding was buttressed by Agthe and Billings (2000). Depken and Wilson (2004) find that football probations do not influence the spending on other sports directly but rather indirectly through the impact of probation on football profits. Thus, while there is evidence of a pecuniary spillover from football

to other non-net-revenue generating sports, it has not been established whether there is any attendance-related spillover from football.

3. Empirical Specification and Data

We propose that per-game attendance at women's basketball games is related to the contemporaneous and recent quality of the women's basketball program, reflected in winning percentage and participation in the NCAA Women's Basketball Tournament, the existence of football on campus, the quality of the football program if one exists, and various institutional characteristics. Our full specification is thus:

$$ATT_i = \beta_0 + \beta_1 WBWPCT_i + \beta_2 NCAAPREV_i + \beta_3 NCAAPREV7_i + \beta_4 FOOTBALL_i + \beta_5 FBS_i + \beta_6 FBWPCT_i + \beta_7 FBSBOWL_i + \beta_8 FCSPLAYOFFS_i + \beta_9 URBAN_i + \beta_{10} PRIVATE_i + \beta_{11} PCTFEM_i + \beta_{12} COSTINDEX_i + \beta_{13} INSTSIZE_{ii} + \varepsilon_i,$$

where ATT_i is per-game attendance for school *i* during the 2005-2006 season, the β's are parameters to be estimated, and ε is a zero-mean stochastic error term.

The independent variables include three variables intended to control for the quality of the women's basketball team: the team's winning percentage from the previous (2004-2005) basketball season (*WBWPCT)*, whether the program participated in the 2005 NCAA Women's Basketball Tournament or National Invitational Tournament (*NCAAPREV*), and the total number of the previous seven NCAA/NIT tournaments in which the program participated (*NCAAPREV7*).

The next five independent variables control for the impact of football on women's basketball attendance: a dichotomous variable which takes a value of one if the school has a football program (*FOOTBALL*), a dichotomous variable which takes a value of one if the school's football program plays in the Football Bowl Subdivision (*FBS*), the football program's winning percentage during the previous (2004-2005) football season (*FBWPCT*), whether the football program played in a post-season FBS bowl game during the previous season (*FBSBOWL*), and a

dichotomous variable which takes a value of one if the football program played in the previous season's FCS post-season playoffs (*FCSPLAYOFFS*). A school that does not have a football program would, therefore, have zeroes for all of these variables. A school that has a football program that plays in the FBS would have a zero for *FCSPLAYOFFS*, whereas all schools with a football team in the FCS would have a zero for *FBBOWL*.

The next five variables control for the impact of institutional characteristics on attendance at women's basketball games: a dichotomous variable which takes a value of one if the school is characterized as being urban by the Department of Education (*URBAN*), and a dichotomous variable which takes a value of one if the school is private (*PRIVATE*), the percentage of the student population that is female (*PCTFEM)*, the school's cost of attendance index as calculated by the Department of Education (*COSTINDEX*), and a discrete variable that indicates the size of the institution (*INSTSIZE*). Finally, we include a vector of women's basketball conference dummy variables (CONF) to control for unobserved heterogeneity in women's basketball attendance.[1]

A priori, it is anticipated that higher quality basketball programs attract greater per-game attendance, therefore the parameter estimates β_1 through β_3 are expected to be positive. If football has a positive spillover effect on women's basketball then we expect β_4 to be positive, although the impact of football quality on attendance is ambiguous. Higher quality football teams might augment attendance, above and beyond the increased interest in women's basketball (and other sports) generated by the football program itself, in which case any or all of the estimates β_5- β_8 might be positive.

The impacts of the various school characteristics on per-game attendance are empirical questions. Urban schools might enjoy greater attendance as they are located in more densely populated areas where transaction costs might be lower for non-students to attend. Yet, urban schools might have more commuter students who leave campus after class but before evening basketball games and might choose not to return to campus. Depending on which influence dominates, β_9 will be positive or negative. Private schools tend to be smaller and might have

[1] The Atlantic Ten Conference is the omitted conference.

student bodies that are less interested in intercollegiate sports, including women's basketball, compared with public schools. If this is the case β_{10} will be negative. The greater percentage of the student body that is female might suggest a greater level of attendance, as female students might be more interested in female sports. On the other hand, there is a perception that women are generally less interested in sports overall and therefore a greater percentage of female students might decrease per-game attendance. Depending on which influence dominates, β_{11} can be positive or negative. If matriculating to a particular school becomes relatively more expensive as reflected in an increase in *COSTINDEX*, this might induce more students to take off-campus jobs which could preclude them attending women's basketball games, suggesting β_{12} will be negative. On the other hand, if an increased cost of matriculation increases brand-loyalty, then attendance at women's basketball games might increase with the *COSTINDEX*, suggesting β_{12} will be positive. Finally, larger schools might be expected to have larger per-game attendance levels. If so, β_{13} will be positive.

Data

Data conducive to investigating the impact of football on women's basketball were gathered from the National Collegiate Athletic Association, the Integrated Post-secondary Education Data System (IPEDS), and from individual institutions. The data represent a cross-section of all 329 universities and colleges that played Division IA Women's Basketball in the United States during the 2005-06 academic year.[2] The descriptive statistics of our data are reported in Table 1.

As reported in Table 1, during the 2005-2006 women's basketball season, the average per-game attendance was 1,461 but had considerable variation; the lowest average attendance was 120 people per game (St. Francis of New York) and the highest average attendance was 15,356 (The University of Tennessee). Approximately 29 percent of the women's programs (94 teams) participated in the 2005 NCAA Women's Basketball Tournament and the 2005 Women's National Invitational Tournament (NIT). Amongst the schools in the sample, the average

[2] The Citadel didn't field a women's basketball team during the academic year under consideration although the school does participate in Division I (FCS) football.

program participated in approximately two post-season tournaments over the previous seven years.

Amongst the 329 programs included in our sample, approximately 72 percent (236) had a football team although only 36 percent had a football team playing in the Football Bowl Sub-division, the highest level of college football. The average winning percentage amongst those schools with football programs is five-hundred because there are no ties in college football. Amongst those schools with football teams in the FBS, 46% or 56 teams participated in post-season bowls, and amongst those schools with football teams in the FCS, 5% or 16 teams participated in post-season play.

Considering the school characteristics, in our sample twenty-six percent of the schools are considered urban according to IPEDS, thirty-three percent are private, the average student body was 55 percent female, the IPEDS cost of attendance index averaged 2.79 (with a minimum of .32, SUNY Albany, and a maximum of 25.14, Miami (OH)), and the average institutional size was 3.82 on a scale of two to five.[3] The appendix lists the schools in our sample, whether the schools hosts a football team, the conference in which the women's basketball team plays and the conference in which the football team plays, if it exists.

Figure 1 depicts a scatter plot of per-game attendance against women's basketball attendance; some observations appear to be potential outliers. Most but not all of these observations are associated with teams that play in one of the Big Six conferences (Atlantic Coast, Big East, Big Ten, Big Twelve, Southeastern or Pacific Ten).[4] Therefore, an indicator variable (*OUTLIER)* was created that takes a value of one if an observation is identified as being a multivariate outlier

[3] The variable *COSTINDEX* is the ratio of the percentage change in a school's tuition and fees and the percentage change in the Consumer Price Index – All Urban Consumers. A value greater than one indicates that the costs of attending that school are increasing faster than the general price level. The variable *INSTSIZE* is a discrete variable that takes a value of 1 if the student population is less than 1,000; a value of 2 if the student population is between 1,000 and 4,999; a value of 3 if the student population is between 5,000 and 9,999; a value of four if the student population is between 10,000-19,999; and a value of five if the student population is greater than 20,000. In the sample used herein, 52 schools fall in category 2, 65 in category 3, 101 in category 4, and 111 in category 5. We estimated the models using the total number of students enrolled (*ENRTOT*) rather than the discrete *INSTSIZE*. However, the parameter on *ENRTOT* variable was consistently insignificant. Thus, we report the results using *INSTSIZE*.

[4] Thirty-three observations were identified as multivariate outliers according the technique developed by Hadi (1992, 1994). Twenty-eight of the thirty-three observations were Big Six conference members.

according to the procedure developed by Hadi (1992, 1994). This variable is included as a separate regressor.

4. Estimation Results

Our initial empirical results are based on ordinary least squares with White (1980) standard errors robust to heteroscedasticity and are reported in Table 1.[5] Model (1) in Table 2 is a parsimonious model which includes only variables describing the women's basketball team and the institution's characteristics. The higher the quality of the team the greater is per-game attendance, as expected. Moreover, teams with a recent history of quality, as represented by participation in post-season tournaments, also enjoy greater per-game attendance. Urban schools do not have a statistically meaningful difference in per-game attendance but private schools experience lower per-game attendance.

Model (2) in Table 2 includes a dummy variable for the presence of a football team and whether the team plays in the football bowl subdivision. In this case, the presence of a football team has no statistically meaningful impact on attendance but schools with FBS football teams experience an increase in attendance of approximately 300 people per game. Model (3) further controls for the quality of the football team if one exists by adding the winning percentage of the football team from the previous (2004-2005) season. The results do not qualitatively change from Model (2) suggesting that quality of the football team does not contribute materially to attendance to women's basketball games. Model (4) in Table 2 adds three additional variables: the cost of attendance index, whether a school's FBS team played in a post-season bowl and whether a school's FCS team participated in the post-season playoffs. The cost of attendance index has no material impact on basketball attendance, and neither does having an FCS team participate in post-season play. However, there is a positive correlation between women's basketball attendance and participating in an FBS bowl, suggesting that football success might spark increased interest in other sports on campus.[6,7]

[5] The Cook-Weisberg test statistics indicated rejection of the null hypothesis of homoscedasticity for each of the specifications reported in Table 1.

[6] There might be concern that the FBSBOWL variable simply captures greater attendance at women's basketball at FBS schools because the institutions tend to have more students. We included the current enrollment as reported by

The results from ordinary least squares might be biased if the presence of a football team is correlated with the OLS error term. This endogeneity bias would arise if schools with greater interest in sports are more likely to have a football program and have greater attendance at other sports, including women's basketball. Because having a football team is a binary condition, one that is not easily changed from year to year, one approach is to consider the presence of a football team as a treatment effect. In this approach, the impact of football on women's basketball attendance is considered endogenous for which one or more instruments are required. As the endogenous variable is dichotomous, rather than continuous, the treatment model estimates two equations simultaneously: a probit model for the endogenous variable and a standard linear model for the outcome equation.

Like other Heckman-type models, it is possible to identify the treatment equation using the non-linearity of the maximum likelihood function. However, it is preferable to have at least one variable that appears in the treatment equation that does not appear in the outcome equation. For a variable to be a valid instrument it must be correlated with the endogenous variable, in this case having a football program, but not correlated with the primary variable of interest, in this case attendance at women's basketball games. We propose two instruments for whether a school has a football program.

The first is the age of the institution. Starting a football program entails considerable fixed costs, e.g., for a stadium and practice facilities, and these costs were considerably lower (in both absolute and relative terms) in the past than today. For instance, during the first quarter of the twentieth century football was becoming more popular in America and both the fixed and operating costs of having a football program were considerably lower than they are today.[8]

IPEDS and found that the parameter on this variable was insignificant while the other parameter estimates did not change in sign, magnitude, or significance. This suggests that the results reported in Table 2 are not a fabrication of the data or the specification.

[7] We estimated the models using the natural logarithm of per-game attendance as the dependent variable. The results are qualitatively similar as those reported herein and are available from the authors upon request.

[8] For example, the New York Times reports in a 1911 story that Harvard spent approximately $31,000 (or approximately $698,000 in 2000 dollars) to field their football team in 1910 while Yale spent approximately $40,000 (or approximately $900,000 in 2000 dollars). In contrast, according to Equity in Athletics Disclosure Data, Harvard spent $2.35 million on its football program in 2007 while Yale spent $2.56 million in the same year. These

Therefore, everything else equal, older schools may be more likely to have a football program. The second instrument is the number of other same-state schools that also have a football program, either in the FBS or FCS. The number of other football programs might be negatively correlated with the odds that a particular institution has a football program if the increased competition reduces the ability to recruit high-quality in-state players, which might increase the odds that a school disbands its football program or fails to initiate a football program.[9]

Table 3 presents initial tests for the validity of our proposed instruments. The first three columns test whether the proposed instruments are correlated with the fitted OLS error term obtained from Model (4) of Table 2. It is clear that the proposed instruments are not correlated with the fitted error term and thus they both "pass" the first requirement for a valid instrument. The remaining columns in Table 3 present various probit estimation results including the two unique instruments and three variables included in the outcome equation that might also influence the odds of having a football team: whether the school is urban (*URBAN*), the percentage of the student body that is female (*PCTFEM*), and the Department of Education's cost of attendance index (*COSTINDEX*). Urban schools might be less prone to having a football team as urban schools are more often "commuter" schools and may have limited space for football related facilities; schools with a larger proportion of female students might be less likely to have a football program; and schools which are more expensive to attend might be more likely to have a football program. The results in Table 3 confirm these expectations, the two unique instruments and the other three variables are all statistically and materially related to the odds of a school having a football program.

Table 4 reports the treatment-model estimation results in which the dependent variable is per-game attendance but the dummy variable *FOOTBALL* is considered endogenous.[10] The various specifications in Table 4 vary primarily by the variables included in the treatment equation (reported in the last row of Table 4). Model (1) includes no explanatory variables in the treatment equation, relying on the non-linearity of the probit model to identify the treatment

---

two schools now play in the FCS (formerly Division I-AA) and therefore spend considerably less on their football teams than other schools playing in the FBS (formerly Division I-A).

[9] We measure the number of in-state programs as of the 2005-2006 football season.

[10] We do not control for the endogeneity in the case of the interaction terms, however if a football team does not exist on campus, the interaction terms take the value of zero.

equation. Model (2) includes only the age of the institution, Model (3) includes both the age and the number of competing in-state football programs, Model (4) adds the institutional characteristics *URBAN* and *PCTFEM*, Model (5) adds *INSTSIZE* and *COSTINDEX* to the outcome equation, and Model (6) adds the *COSTINDEX* to the treatment equation.

The results of treatment-effects estimation suggest that the most sensitive variable in the various specifications is the impact of having a football program on campus. The parameter estimate on *FOOTBALL* is negative and statistically significant in Model (1) but is positive and statistically insignificant in Model (2). This suggests that failing to properly treat *FOOTBALL* as an endogenous regressor leads a downward bias, i.e., away from zero. When adding additional control variables to the treatment equation all parameter estimates remain stable except the one associated with *FOOTBALL*. After controlling for institution age and other football teams, the marginal impact of having a football team on per-game attendance increases to approximately 400 people per game. After controlling for other institutional characteristics the impact of football on per-game attendance increases to between 500 and 560 people per game. The parameter on FOOTBALL remains fairly constant after the treatment equation has been identified with the two exogenous instruments and the other institutional characteristics thought to influence the odds of having a football team.

5. Discussion and Conclusions

The results presented in the previous section suggest that the presence of a football team has a statistically significant impact on attendance at women's basketball games, even after controlling for the endogeneity of having a football program. This endogeneity is not surprising if greater interest in sports by a school's student body correlates with both attendance at women's basketball and the presence of a football team on campus. The cross-sectional evidence presented herein suggests that having a football program increases per-game attendance by approximately 500-550 people per game, but that the quality of the football program has little impact on per-game attendance. Indeed, of the four variables used to control for the quality of the football program, the program's winning percentage, whether it plays in the FBS, whether it participated in a post-season bowl game (if playing in the FBS) or participated in the post-season playoffs (if

playing the FCS), only participating in a bowl game had a statistically significant and economically meaningful impact on per-game attendance. Perhaps a post-season bowl game, played either in December or early January, reinvigorates the student body with "school spirit" which translates into increased attendance at traditionally non-net-revenue generating sports such as women's basketball (at least through March of that year).

The empirical evidence suggests that recent and not-to-distant quality of the women's basketball program does increase per-game attendance, consistent with the findings of a large number of empirical studies focusing on the attendance at professional sports. What is unique in the current study is the finding that having a football program alone can engender an increase in attendance at non-net-revenue generating sports. To put the impact in context, the impact of a football team might increase attendance by up to 500 people per game. If fifty-percent of this increase in attendance pays regular price admission of $10 per person, this would translate to an increase in revenue to the women's team of approximately $32,500 over the course of a thirteen-game home schedule (the average home schedule length in our sample). While not as dramatic an increase in team revenues as a bowl-destined football team might receive, such an increase in revenue might be economically meaningful for many programs, e.g., it might pay for an additional graduate-trainer or assistant coach or it might pay for a women's basketball program to travel to a cross-country pre-season invitational tournament.

References

Agthe, D. E. and R. B. Billings (2000), "The Role of Football Profits in Meeting Title IX Gender Equity Regulations and Policy," *Journal of Sport Management,* **14**(1)**,** pp. 28-40.

Baade, R. A. and J. O. Sundberg (1996), "Fourth Down and Gold to Go? Assessing the Link Between Athletics and Alumni Giving," *Social Science Quarterly,* **77**(4), pp. 789-803.

Depken, C.A. and D.P. Wilson (2004), "The Cost of Probation in Division IA College Football," *mimeo,* Department of Economics, The Belk College of Business, UNC Charlotte.

Fizel, J. L. and R.W. Bennett (1989), "The Impact of College Football Telecasts on College Football Attendance," *Social Science Quarterly,* **70**(4), pp. 980-988.

Hadi, Ali S. (1992), "Identifying Multiple Outliers in Multivariate Data," *Journal of the Royal Statistical Society, Series B (Methodological),* **54**(3), pp. 761-771.

Hadi, Ali S. (1994), "A Modification of a Method for the Detection of Outliers in Multivariate Samples," *Journal of the Royal Statistical Society, Series B (Methodological),* **56**(2), pp. 393-396.

Humphreys, B. R. (2006), "The Relationship Between Big-Time College Football and State Appropriations for Higher Education," *International Journal of Sport Finance*, **1**(2), pp. 119-128.

Kaempfer, W. and P. Pacey (1986), "Televising College Football: The Complementarity of Attendance and Viewing," *Social Science Quarterly,* **67**(1)**,** pp. 176-185.

Magnold, W.D., L. Bean, and D. Adams (2003), "The Impact of Intercollegiate Athletics on Graduation Rates Among NCAA Division I Universities," *Journal of Higher Education,* **74**(5), pp. 540-562.

McEvoy, C. (2005), "The Relationship Between Dramatic Changes in Team Performance and Undergraduate Admissions Applications," *The SMART Journal*, **2**(1), pp. 18-24.

Matheson, V. A. (2006), **"**Athletic Graduation Rates and Simpson's Paradox," *Economics of Education Review,* **26**(4)**,** pp. 516-520.

Murphy, R. G. and G.A. Trandel (1994), "The relation between a university's football record and the size of its applicant pool," *The Economics of Education Review*, 13, 265-270.

Price, D.I and K.C. Sen (2003), "The demand for game day attendance in college football: an analysis of the 1997 Division 1-A season," *Managerial and Decision Economics*, **24**(1), pp. 35-46.

Rishe, P. J. (1999), “Gender Gaps and the Presence of Profitability of College Football,” *Social Science Quarterly*, **80**(4), pp. 702-717.

Tucker, I. (1992), “The Impact of Big-Time Athletics on Graduation Rates,” *Atlantic Economic Journal*, **20(**4), pp. 65-72.

White, H. (1980), “A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica*, **48**(4), pp. 817-838.

Table 1: Descriptive Statistics of the Data

Variable	Description	Mean	Std. Dev.	Min	Max
PGATT	Per-game Attendance during the 2005-2006 season	1,461	1,919	120	15,356
WBWPCT	Women's basketball win pct. 2004-2005 season	0.50	0.20	0.04	0.96
NCAAPREV	Women's basketball team played in 2005 Women's NCAA Tournament (1=Yes)	0.29	0.45	0.00	1.00
NCAAPREV7	Total number of post-season tournaments in which women's basketball team participated between 1998-2004	1.97	2.37	0.00	7.00
FOOTBALL	Football (1=Yes)	0.72	0.45	0.00	1.00
FBWPCT	Football Win percentage 2004-2005 season [a]	0.50	0.22	0.00	1.00
FBBOWL	Football team played in post-season bowl game during 2004-2005 season [b]	0.46	0.50	0.00	1.00
FCSPLAYOFF	Football team played in the Football Championship Series post-season playoff tournament in 2004-2005 season [c]	0.05	0.20	0.00	1.00
FBS	Football Bowl Series (if school has football)	0.36	0.48	0.00	1.00
URBAN	School is considered urban (1=yes)[e]	0.26	0.44	0.00	1.00
PRIVATE	School is private (1=yes)[e]	0.33	0.47	0.00	1.00
PCTFEMALE	Percent of student body female	55.17	7.71	0.51	78.00
COSTINDEX	IPEDS Cost of Attendance Index [f]	2.79	1.78	0.32	25.14
INSTSIZE	IPEDS institution size category (1=smallest, 5=largest)	3.82	1.06	2.00	5.00
OUTLIER	Multivariate Outlier (p=.05) [d]	0.10	0.30	0.00	1.00
INSTAGE	Age of institution in decades. [g]	12.14	5.00	3.40	37.00
OTHFBTEAMS	Total number of other Division I football teams in the state as of 2005.	11.57	6.97	1.00	23.00

Notes: Data gathered from the NCAA and the Integrated Postsecondary Education Data System (IPEDS). [a] Amongst all football teams.

[b] Among FBS teams. [c] Amongst FCS teams. [d] According to the algorithm developed by Hadi (1992, 1994). [e] According to IPEDS. [f] Based on 325 observations; four observations had missing values in the IPEDS data. [g] The year the institution opened is determined by IPEDS and authors' calculations. Specifically, it is often necessary to trace the lineage of a particular institution to at least one parent institution, for example the University of North Carolina at Charlotte was originally called Charlotte College. When appropriate we use the parent institution's opening year.

Table 2: Impact of Football on Women's Basketball Attendance
(Ordinary Least Squares Results)

	(1)	(2)	(3)	(4)
WBWPCT	509.405**	537.666**	537.931**	558.148**
	(243.495)	(250.766)	(249.022)	(252.133)
NCAAPREV	255.986*	210.519	224.297	262.446*
	(142.310)	(141.213)	(140.521)	(141.389)
NCAAPREV7	152.933***	136.508***	134.248***	125.017***
	(30.257)	(30.485)	(29.996)	(31.130)
URBAN	-14.090	-18.992	-5.986	-42.030
	(106.446)	(108.103)	(106.162)	(107.367)
PRIVATE	-281.012***	-180.013**	-172.817**	-165.536*
	(78.805)	(89.382)	(87.219)	(86.592)
PCTFEM	-4.577	1.418	1.833	-0.537
	(5.709)	(5.967)	(6.021)	(7.794)
COSTINDEX				-8.613
				(22.352)
FOOTBALL		49.606	-143.633	20.411
		(77.364)	(160.265)	(145.010)
FBS		303.129***	306.121***	87.540
		(107.617)	(107.885)	(137.517)
FBWPCT			397.552	101.576
			(276.865)	(262.779)
FBBOWL				473.268**
				(239.374)
FCSPLAYOFFS				-254.810
				(168.694)
OUTLIER	4,327.004***	4,275.550***	4,252.769***	4,176.871***
	(436.170)	(434.455)	(425.821)	(405.837)
CONSTANT	747.540**	276.145	243.227	412.659
	(360.272)	(406.499)	(410.119)	(511.431)
Observations	329	329	329	325
R-squared	0.75	0.75	0.75	0.76

Notes: Dependent variable is team-level per-game attendance at Division 1-A women's basketball games during the 2005-2006 basketball season. Explanatory variables are defined in Table 1. Four observations are lost when the model includes COSTINDEX due to missing values in the IPEDS data. Huber-White Standard errors reported in parentheses
*** indicates $p<0.01$, ** indicates $p<0.05$, * indicates $p<0.1$

Table 3a: Validity of Proposed Instruments Presence of Football

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep. Variable	OLS Residual	OLS Residual	OLS Residual	Football (1=Yes)	Football (1=Yes)	Football (1=Yes)	dP(FB=1)/dX
AGE	0.269		-2.094	0.077***		0.065***	0.020***
	(10.587)		(10.716)	(0.017)		(0.018)	(0.006)
OTHFBTEAMS		-10.190	-10.435		-0.026**	-0.021*	-0.007*
		(7.583)	(7.696)		(0.011)	(0.012)	(0.004)
URBAN						-0.502***	-0.166***
						(0.177)	(0.061)
PCTFEM						-0.060***	-0.019***
						(0.014)	(0.004)
COSTINDEX						0.213***	0.066***
						(0.073)	(0.022)
Constant	-3.269	117.518	145.757	-0.321	0.891***	3.063***	
	(138.915)	(102.024)	(176.999)	(0.207)	(0.147)	(0.910)	
Observations	325	325	325	329	329	325	325
R-squared	0.00	0.01	0.01				

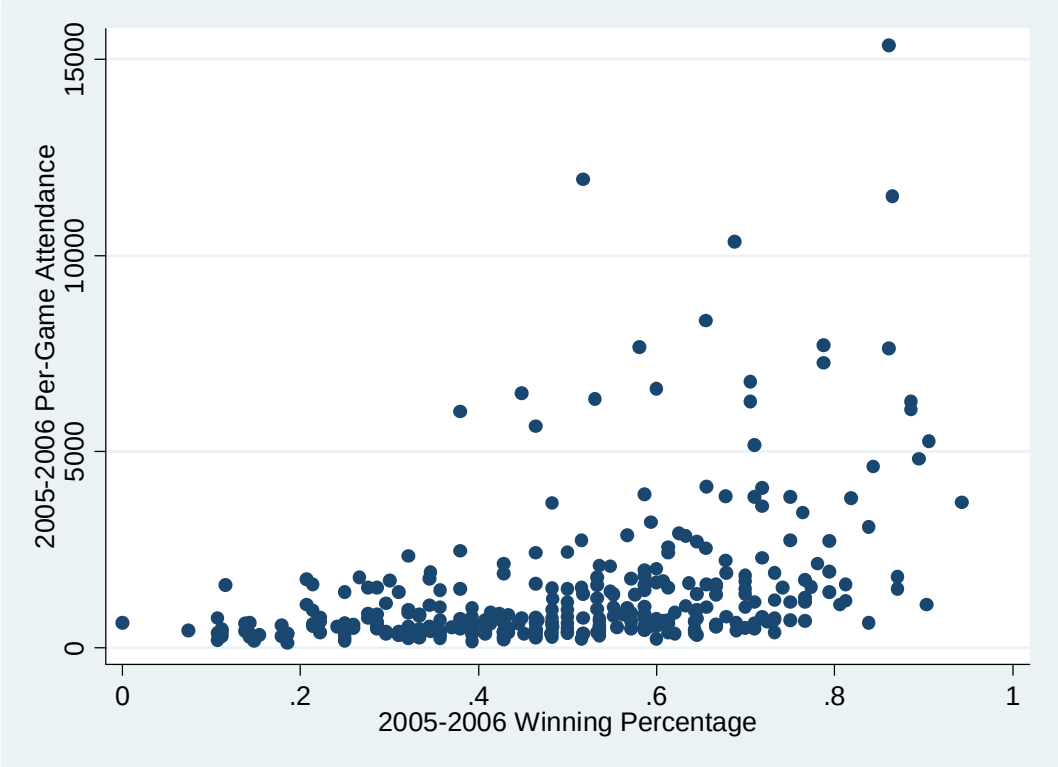
Notes: Based on 325 observations. For Model 1, Model 2 and Model 3 the dependent variable is the fitted residual from Model 4 in Table 2. Explanatory variables are defined in Table 1. Institution age is measured in decades. Proposed instruments should be correlated with having a football team and but have no correlation with the OLS residual.

Table 4: Impact of Football on Women's Basketball Attendance
(Treatment-Effect Estimation Results)

	(1)	(2)	(3)	(4)	(5)	(6)
WBWPCT	413.036	563.011**	567.557**	565.687**	561.285**	566.141**
	(258.025)	(246.184)	(245.083)	(242.623)	(244.049)	(244.459)
NCAAPREV	341.710***	258.660*	259.345*	252.325*	256.064*	246.972*
	(114.859)	(138.120)	(137.810)	(137.987)	(138.455)	(139.038)
NCAAPREV7	88.486***	126.541***	125.389***	123.685***	122.706***	121.972***
	(23.827)	(29.330)	(29.298)	(29.070)	(30.164)	(29.987)
FOOTBALL	-1,524.885***	335.197	398.160*	519.217***	523.704**	559.559***
	(212.910)	(255.534)	(226.523)	(192.442)	(206.411)	(214.574)
FBWPCT	66.201	75.764	65.949	71.574	96.076	78.269
	(221.140)	(253.243)	(251.984)	(253.897)	(258.338)	(256.782)
FBBOWL	264.935	455.998**	461.193**	461.975**	472.401**	483.550**
	(177.038)	(230.312)	(231.041)	(231.874)	(235.262)	(237.233)
FCSPLAYOFFS	-125.744	-265.610	-265.817	-268.594	-275.879	-273.265
	(133.470)	(171.220)	(168.911)	(168.808)	(169.882)	(169.656)
FBS	23.635	84.457	80.380	81.761	78.560	84.892
	(116.090)	(133.258)	(132.871)	(132.744)	(137.211)	(136.314)
URBAN	49.878	-38.774	-34.162	38.248	42.034	48.143
	(94.795)	(103.727)	(103.879)	(110.539)	(117.206)	(118.177)
PRIVATE	-180.253*	-180.495**	-181.070**	-180.491**	-187.110*	-179.985*
	(101.935)	(88.440)	(86.004)	(85.099)	(101.687)	(101.254)
PCTFEM	-2.892	1.156	1.103	7.771	7.911	8.285
	(4.878)	(5.830)	(5.817)	(6.732)	(9.230)	(9.220)
INSTSIZE					0.594	-4.348
					(43.438)	(43.887)
COSTINDEX					-7.770	-23.921
					(23.126)	(20.877)
CONSTANT	1,892.741***	80.087	40.418	-431.383	-427.948	-410.582
	(401.328)	(492.283)	(477.951)	(530.749)	(726.667)	(716.002)
Variables include in treatment equation	NONE	AGE	AGE, OTHFBTEAMS	AGE, OTHFBTEAMS, URBAN,PCTFEM	AGE, OTHFBTEAMS, URBAN,PCTFEM	AGE, OTHFBTEAMS, URBAN,PCTFEM, COSTINDEX
Observations	329	329	329	329	325	325

Notes: The dependent variable is per-game attendance at Division 1A women's basketball teams during the 2005-06 season. The Citadel plays Division I football but did not field a women's basketball team in 2005-06. Four observations lost when including COSTINDEX because of missing values in the IPEDS data. All specifications consider having a football team endogenous; specifications differ by the instruments used to explain whether a school has a football team. Robust standard errors in parentheses. *** indicates $p<0.01$, ** indicates $p<0.05$, * indicates $p<0.1$.

Figure 1: 2005-06 Per-game Attendance vs. 2005-06 Women's Basketball Win Percentage



Appendix: Schools with Division IA Women's Basketball 2004-2005
(Listed in alphabetical order within each state)

State	School	Football	Football Conference	Women's Basketball Conference
AL	Alabama	Yes	Southeastern	Southeastern
	Alabama A&M	Yes	SWAC	SWAC
	Alabama State	Yes	SWAC	SWAC
	Auburn	Yes	Southeastern	Southeastern
	Jacksonville State	Yes	Ohio Valley	Ohio Valley
	Samford	Yes	Ohio Valley	Ohio Valley
	South Ala	No	.	Sunbelt
	Troy	Yes	Sunbelt	Sunbelt
	UAB	Yes	Conference USA	Conference USA
AR	Arkansas-Little Rock	No	.	Sunbelt
	Arkansas-Pine Bluff	Yes	SWAC	SWAC
	Arkansas	Yes	Southeastern	Southeastern
	Arkansas State	Yes	Sunbelt	Sunbelt
AZ	Arizona	Yes	Pacific Ten	Pacific Ten
	Arizona State	Yes	Pacific Ten	Pacific Ten
	Northern Arizona	Yes	Big Sky	Big Sky
CA	Cal Poly	Yes	Great West	Big West
	Cal State Fullerton	No	.	Big West
	Cal State Northridge	No	.	Big West
	California	Yes	Pacific Ten	Pacific Ten
	Fresno State	Yes	Western Athletic	Western Athletic
	Long Beach State	No	.	Big West
	Loyola Marymount	No	.	West Coast
	Pepperdine	No	.	West Coast
	Sacramento State	Yes	Big Sky	Big Sky
	San Diego	Yes	Pioneer	West Coast
	San Diego State	Yes	Mountain West	Mountain West
	San Francisco	No	.	West Coast
	San Jose State	Yes	Western Athletic	Western Athletic
	Santa Clara	No	.	West Coast
	Southern California	Yes	Pacific Ten	Pacific Ten
	St. Mary's (Cal)	No	.	West Coast
	Stanford	Yes	Pacific Ten	Pacific Ten
	UC Davis	Yes	Great West	Independents
	UC Irvine	No	.	Big West
	UC Riverside	No	.	Big West
	UC Santa Barb	No	.	Big West
	UCLA	Yes	Pacific Ten	Pacific Ten
CO	Air Force	Yes	Mountain West	Mountain West
	Colorado	Yes	Big XII	Big XII
	Colorado State	Yes	Mountain West	Mountain West
	Denver	No	.	Sunbelt
	Northern Colorado	Yes	Big Sky	Big Sky
CT	Central Conn State	Yes	Northeast	Northeast
	Connecticut	Yes	Big East	Big East

	Fairfield	No	.	MAAC
	Hartford	No	.	America East
	Sacred Heart	Yes	Northeast	Northeast
	Yale	Yes	Ivy	Ivy
DC	American	No	.	Patriot League
	Georgetown	Yes	Patriot League	Big East
	Howard	Yes	MEAC	MEAC
DE	Delaware	Yes	Colonial	Colonial
	Delaware State	Yes	MEAC	MEAC
FL	Bethune-Cookman	Yes	MEAC	MEAC
	Florida Atlantic	Yes	Sunbelt	Sunbelt
	Florida	Yes	Southeastern	Southeastern
	Florida A&M	Yes	MEAC	MEAC
	Florida International	Yes	Sunbelt	Sunbelt
	Florida State	Yes	Atlantic Coast	Atlantic Coast
	Jacksonville	Yes	Pioneer	Atlantic Sun
	Miami (Fla)	Yes	Atlantic Coast	Atlantic Coast
	South Florida	Yes	Big East	Big East
	Stetson	No	.	Atlantic Sun
	Central Florida	Yes	Conference USA	Conference USA
GA	Georgia Southern	Yes	Southern	Southern
	Georgia	Yes	Southeastern	Southeastern
	Georgia State	No	.	Colonial
	Georgia Tech	Yes	Atlantic Coast	Atlantic Coast
	Mercer	No	.	Atlantic Sun
	Savannah State	Yes	Independents	Independents
HI	Hawaii	Yes	Western Athletic	Western Athletic
IA	Drake	Yes	Pioneer	Missouri Valley
	Iowa	Yes	Big Ten	Big Ten
	Iowa State	Yes	Big XII	Big XII
	UNI	Yes	Gateway	Missouri Valley
ID	Boise State	Yes	Western Athletic	Western Athletic
	Idaho	Yes	Western Athletic	Western Athletic
	Idaho State	Yes	Big Sky	Big Sky
IL	Bradley	No	.	Missouri Valley
	Chicago State	No	.	Independents
	DePaul	No	.	Big East
	Eastern Illinois	Yes	Ohio Valley	Ohio Valley
	Ill-Chicago	No	.	Horizon
	Illinois	Yes	Big Ten	Big Ten
	Illinois State	Yes	Gateway	Missouri Valley
	Loyola (Ill)	No	.	Horizon
	Northern Illinois	Yes	MAC	MAC
	Northwestern	Yes	Big Ten	Big Ten
	Robert Morris	Yes	Northeast	Northeast
	Southern Illinois	Yes	Gateway	Missouri Valley
	Western Illinois	Yes	Gateway	Summit League
IN	Ball State	Yes	MAC	MAC
	Butler	Yes	Pioneer	Horizon
	Evansville	No	.	Missouri Valley

	IPFW	No	.	Summit League
	IUPUI	No	.	Summit League
	Indiana	Yes	Big Ten	Big Ten
	Indiana State	Yes	Gateway	Missouri Valley
	Notre Dame	Yes	Independents	Big East
	Purdue	Yes	Big Ten	Big Ten
	Valparaiso	Yes	Pioneer	Horizon
KS	Kansas	Yes	Big XII	Big XII
	Kansas State	Yes	Big XII	Big XII
	Wichita State	No	.	Missouri Valley
KY	Eastern Kentucky	Yes	Ohio Valley	Ohio Valley
	Kentucky	Yes	Southeastern	Southeastern
	Louisville	Yes	Big East	Big East
	Morehead State	Yes	Pioneer	Ohio Valley
	Murray State	Yes	Ohio Valley	Ohio Valley
	Western Kentucky	Yes	Independents	Sunbelt
LA	Centenary (La)	No	.	Summit League
	Grambling	Yes	SWAC	SWAC
	LSU	Yes	Southeastern	Southeastern
	La-Lafayette	Yes	Sunbelt	Sunbelt
	La-Monroe	Yes	Sunbelt	Sunbelt
	Louisiana Tech	Yes	Western Athletic	Western Athletic
	New Orleans	No	.	Sunbelt
	Southeastern Louisiana	Yes	Southland	Southland
	Southern University	Yes	SWAC	SWAC
	Tulane	Yes	Conference USA	Conference USA
MA	Boston College	Yes	Atlantic Coast	Atlantic Coast
	Boston University	No	.	America East
	Harvard	Yes	Ivy	Ivy
	Holy Cross	Yes	Patriot League	Patriot League
	Massachusetts	Yes	Colonial	Atlantic 10
	Northeastern	Yes	Colonial	Colonial
MD	Coppin State	No	.	MEAC
	Loyola (Md)	No	.	MAAC
	Maryland	Yes	Atlantic Coast	Atlantic Coast
	Md-East Shore	No	.	MEAC
	Morgan State	Yes	MEAC	MEAC
	Mt St Mary's	No	.	Northeast
	Navy	Yes	Independents	Patriot League
	Towson	Yes	Colonial	Colonial
	UMBC	No	.	America East
ME	Maine	Yes	Colonial	America East
MI	Central Michigan	Yes	MAC	MAC
	Detroit	No	.	Horizon
	Eastern Michigan	Yes	MAC	MAC
	Michigan	Yes	Big Ten	Big Ten
	Michigan St	Yes	Big Ten	Big Ten
	Oakland	No	.	Summit League
	Western Michigan	No	.	MAC
MN	Minnesota	Yes	Big Ten	Big Ten

MO	Missouri	Yes	Big XII	Big XII
	Missouri State	Yes	Gateway	Missouri Valley
	St Louis	No	.	Atlantic 10
	UMKC	No	.	Summit League
MS	Alcorn State	Yes	SWAC	SWAC
	Jackson State	Yes	SWAC	SWAC
	Mississippi	Yes	Southeastern	Southeastern
	Mississippi State	Yes	Southeastern	Southeastern
	Mississippi Val	Yes	SWAC	SWAC
	Southern Miss	Yes	Conference USA	Conference USA
MT	Montana	Yes	Big Sky	Big Sky
	Montana State	Yes	Big Sky	Big Sky
	Southeast Mo State	Yes	Ohio Valley	Ohio Valley
NC	Appalachian State	Yes	Southern	Southern
	Belmont	No	.	Atlantic Sun
	Campbell	No	.	Atlantic Sun
	Davidson	Yes	Pioneer	Southern
	Duke	Yes	Atlantic Coast	Atlantic Coast
	East Carolina	Yes	Conference USA	Conference USA
	Elon	Yes	Southern	Southern
	Gardner-Webb	Yes	Big South	Atlantic Sun
	High Point	No	.	Big South
	North Carolina A&T	Yes	MEAC	MEAC
	North Carolina	Yes	Atlantic Coast	Atlantic Coast
	North Carolina State	Yes	Atlantic Coast	Atlantic Coast
	UNC Asheville	No	.	Big South
	UNC Charlotte	No	.	Atlantic 10
	UNC Greensboro	No	.	Southern
	UNC Wilmington	No	.	Colonial
	Wake Forest	Yes	Atlantic Coast	Atlantic Coast
	Western Carolina	Yes	Southern	Southern
ND	North Dakota State	Yes	Great West	Summit League
NE	Creighton	No	.	Missouri Valley
	Nebraska	Yes	Big XII	Big XII
NH	Dartmouth	Yes	Ivy	Ivy
	New Hampshire	Yes	Colonial	America East
NJ	Fairleigh Dickinson	No	.	Northeast
	Monmouth	Yes	Northeast	Northeast
	Princeton	Yes	Ivy	Ivy
	Rider	No	.	MAAC
	Rutgers	Yes	Big East	Big East
	Seton Hall	No	.	Big East
	St Peter's	Yes	.	MAAC
NM	New Mexico	Yes	Mountain West	Mountain West
	New Mexico State	Yes	Western Athletic	Western Athletic
NV	Nevada	Yes	Western Athletic	Western Athletic
	UNLV	Yes	Mountain West	Mountain West
NY	Albany (NY)	Yes	Northeast	America East
	Army	Yes	Independents	Patriot League
	Binghamton	No	.	America East

	Buffalo	Yes	MAC	MAC
	Canisius	No	.	MAAC
	Colgate	Yes	Patriot League	Patriot League
	Columbia	Yes	Ivy	Ivy
	Cornell	Yes	Ivy	Ivy
	Fordham	Yes	Patriot League	Atlantic 10
	Hofstra	Yes	Colonial	Colonial
	Iona	Yes	MAAC	MAAC
	Long Island	No	.	Northeast
	Manhattan	No	.	MAAC
	Marist	Yes	MAAC	MAAC
	Niagara	No	.	MAAC
	Quinnipiac	No	.	Northeast
	Siena	No	.	MAAC
	St Bonaventure	No	.	Atlantic 10
	St Francis (NY)	No	.	Northeast
	St John's (NY)	No	.	Big East
	Stony Brook	Yes	Independents	America East
	Syracuse	Yes	Big East	Big East
	Wagner	Yes	Northeast	Northeast
OH	Akron	Yes	MAC	MAC
	Bowling Green	Yes	MAC	MAC
	Cincinnati	Yes	Big East	Big East
	Cleveland State	No	.	Horizon
	Dayton	Yes	Pioneer	Atlantic 10
	Kent State	Yes	MAC	MAC
	Miami (Ohio)	Yes	MAC	MAC
	Ohio	Yes	MAC	MAC
	Ohio State	Yes	Big Ten	Big Ten
	Toledo	Yes	MAC	MAC
	Wright State	No	.	Horizon
	Xavier	No	.	Atlantic 10
	Youngstown State	Yes	Gateway	Horizon
OK	Oklahoma	Yes	Big XII	Big XII
	Oklahoma State	Yes	Big XII	Big XII
	Oral Roberts	No	.	Summit League
	Tulsa	Yes	Conference USA	Conference USA
OR	Oregon	Yes	Pacific Ten	Pacific Ten
	Oregon State	Yes	Pacific Ten	Pacific Ten
	Pacific	No	.	Big West
	Portland	No	.	West Coast
	Portland State	Yes	Big Sky	Big Sky
PA	Bucknell	Yes	Patriot League	Patriot League
	Drexel	No	.	Colonial
	Duquesne	Yes	MAAC	Atlantic 10
	La Salle	Yes	MAAC	Atlantic 10
	Lafayette	Yes	Patriot League	Patriot League
	Lehigh	Yes	Patriot League	Patriot League
	Penn	Yes	Ivy	Ivy
	Penn State	Yes	Big Ten	Big Ten

	Pittsburgh	Yes	Big East	Big East
	St Francis (Pa)	Yes	Northeast	Northeast
	St Joseph's	No	.	Atlantic 10
	Temple	Yes	MAC	Atlantic 10
	Villanova	Yes	Colonial	Big East
RI	Brown	Yes	Ivy	Ivy
	Providence	No	.	Big East
	Rhode Island	Yes	Colonial	Atlantic 10
SC	Charleston So	Yes	Big South	Big South
	Clemson	Yes	Atlantic Coast	Atlantic Coast
	Coastal Carolina	Yes	Big South	Big South
	Col of Charleston	No	.	Southern
	Furman	Yes	Southern	Southern
	South Carolina	Yes	Southeastern	Southeastern
	South Carolina State	Yes	MEAC	MEAC
	Winthrop	No	.	Big South
	Wofford	Yes	Southern	Southern
SD	South Dakota State	Yes	Great West	Summit League
TN	Austin Peay	Yes	Ohio Valley	Ohio Valley
	Chattanooga	Yes	Southern	Southern
	East Tennessee State	No	.	Atlantic Sun
	Lipscomb	No	.	Atlantic Sun
	Memphis	Yes	Conference USA	Conference USA
	Middle Tennessee State	Yes	Sunbelt	Sunbelt
	Tennessee-Martin	Yes	Ohio Valley	Ohio Valley
	Tennessee	Yes	Southeastern	Southeastern
	Tennessee State	Yes	Ohio Valley	Ohio Valley
	Tennessee Tech	Yes	Ohio Valley	Ohio Valley
	Vanderbilt	Yes	Southeastern	Southeastern
TX	Baylor	Yes	Big XII	Big XII
	Houston	Yes	Conference USA	Conference USA
	Lamar	No	.	Southland
	McNeese State	Yes	Southland	Southland
	Nicholls State	Yes	Southland	Southland
	North Texas	Yes	Sunbelt	Sunbelt
	Northwestern State	Yes	Southland	Southland
	Prairie View	Yes	SWAC	SWAC
	Rice	Yes	Conference USA	Conference USA
	Southern Methodist	Yes	Conference USA	Conference USA
	Sam Houston State	Yes	Southland	Southland
	Stephen F Austin	Yes	Southland	Southland
	Texas Christian	Yes	Mountain West	Mountain West
	Texas A&M-Corp Chris	No	.	Southland
	Texas-Pan American	No	.	Independents
	Texas	Yes	Big XII	Big XII
	Texas A&M	Yes	Big XII	Big XII
	Texas Southern	Yes	SWAC	SWAC
	Texas State	Yes	Southland	Southland
	Texas Tech	Yes	Big XII	Big XII
	Texas-Arlington	No	.	Southland

	Texas – El Paso	Yes	Conference USA	Conference USA
	Texas – San Antonio	No	.	Southland
UT	Brigham Young	Yes	Mountain West	Mountain West
	Southern Utah	Yes	Great West	Summit League
	Utah	Yes	Mountain West	Mountain West
UT	Utah State	Yes	Western Athletic	Western Athletic
	Utah Valley State	No	.	Independents
	Weber State	Yes	Big Sky	Big Sky
VA	George Mason	No	.	Colonial
	George Washington	No	.	Atlantic 10
	Hampton	Yes	MEAC	MEAC
	James Madison	Yes	Colonial	Colonial
	Liberty	Yes	Big South	Big South
	Longwood	No	.	Independents
	Norfolk St	Yes	MEAC	MEAC
	Old Dominion	No	.	Colonial
	Radford	No	.	Big South
	Richmond	Yes	Colonial	Atlantic 10
	Va Commonwealth	No	.	Colonial
	Virginia	Yes	Atlantic Coast	Atlantic Coast
	Virginia Tech	Yes	Atlantic Coast	Atlantic Coast
	William & Mary	Yes	Colonial	Colonial
VT	Vermont	No	.	America East
WA	Eastern Washington	Yes	Big Sky	Big Sky
	Gonzaga	No	.	West Coast
	Washington	Yes	Pacific Ten	Pacific Ten
	Washington State	Yes	Pacific Ten	Pacific Ten
WI	Marquette	No	.	Big East
	Wisconsin-Green Bay	No	.	Horizon
	Wisconsin-Milwaukee	No	.	Horizon
	Wisconsin	Yes	Big Ten	Big Ten
WV	Marshall	Yes	Conference USA	Conference USA
	West Virginia	Yes	Big East	Big East
WY	Wyoming	Yes	Mountain West	Mountain West