

## **The Politics of American College Football**

**Kayla M. Freeman**  
**Indiana University**

**Ryan M. Brewer**  
**Indiana University-Purdue University Columbus**

*Even as revenues and valuations for American college football programs rise rapidly, football faces increased scrutiny about safety concerns which potentially threaten its continued popularity. Recent media suggests a political divide in how football safety issues affect fan identification, with survey evidence asserting football enthusiasm is negatively correlated with Democratic Party affiliation. To more rigorously examine this assertion, we empirically examine how education, income, ethnicity, political affiliation, and school enrollment are associated with college football program values. Results indicate that Democratic affiliation is negatively associated with program values, while college education rates and income are positively associated with program values.*

### **INTRODUCTION**

A 2012 Gallup poll showed that 54% of Americans identify themselves as college football fans (Gallup, 2014). The *USA Today* reported in January 2014 that college football is the third-most popular spectator sport in the United States, only behind professional football and professional baseball (Schwartz & McGarry, 2014). From an investments perspective, the tremendous popularity of NCAA football programs translates to a booming sports business with considerable sustainable growth potential, offering justification for further investment. NCAA Division I football programs are frequently valued at well above \$100 million with marquee programs commonly above \$250 million and in a handful of cases, near or above \$1 billion, with revenues in some cases exceeding \$100 million (Brewer & Pedersen, 2013b; Smith, 2013). The valuations of NCAA Division I football programs have grown by nearly 20% over the year leading up to December 31, 2014, and have doubled in value since 2008 (Brewer, 2015; Brewer, 2014).

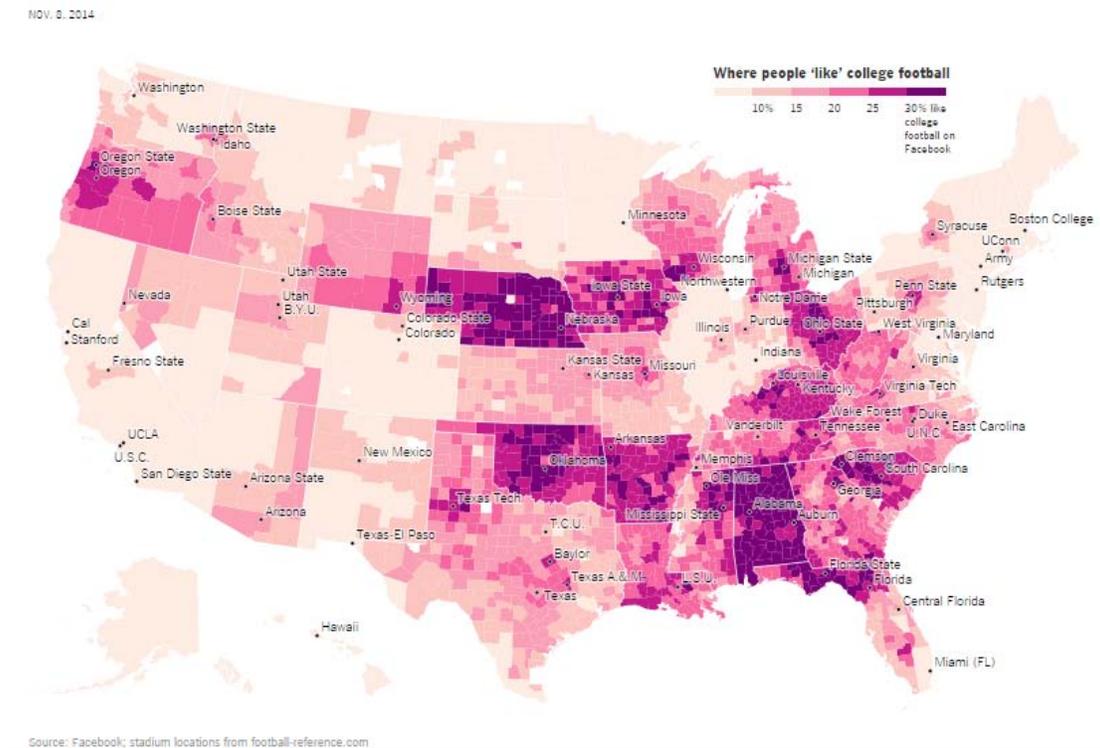
In the face of commercial numbers pointing to overwhelming popularity and financial success of American style football, questions about the sport's safety are continuing to mount (e.g., Jones, 2015). Such questions point toward another issue in American politics –whether or not America's two political parties differ in their adoption rates of new scientific discovery, or whether differences exist as to the types of science each prefers to adopt at all (Lupkin, 2012). With concussions, broken bones, and joint separations being common outcomes for participants in this American pastime every autumn, can we look someplace as fractionated as American politics to find answers about the future of America's most popular sport?

The motivation for this study is thus tied to the dichotomy between the commercial success of American style college football and the risks borne to our children and young adults for playing the sport. More specifically, our study addresses the political make-up of states that host the most financially successful programs, having the most supportive fans. Do red states host better football programs than blue states? If so, do blue states care more for our children’s safety and wellbeing? In this study, the first to analyze the dynamics of politics and football program success, we believe a discussion is warranted to assist further investigation into a sport underwritten by America’s largest universities – institutions promising to advance opportunity for our children through education, much less to injure and harm children through commercial exploitation.

In an ever-changing higher education market facing threats of reduced student matriculation ranging from online choices to certification programs, universities are constantly seeking means of attracting new and better students, attracting and retaining high quality faculty, and attracting and securing donations and increases to endowment levels. Since growth in intercollegiate sports – particularly American style football – has been consistently productive in driving organizational identity and university brand recognition with the promise of significant media attention and other intangible benefits that inure to host universities operating football programs, it is clear that university administrators are confronted with a choice to invest in capital projects in athletics at risk of nonalignment with the university core mission, or to risk missing the financial opportunity resulting from divestiture of a proven cash cow. Yet – what is the opportunity cost of not investing in college football? In this paper, we submit that it depends upon where a given university is located.

While on a national level, football is a favorite sport (Schwartz & McGarry, 2014), opinions on the game vary significantly in different parts of the country. The college football fan base is clearly not evenly distributed throughout the country. Consider the following figure:

**FIGURE 1**  
**WHERE PEOPLE “LIKE” COLLEGE FOOTBALL**  
**(IRWIN & QUEALY, 2014)**



The map, a result of a combined effort between the *New York Times* and Facebook, shows the percentage of Facebook users across the country who have “liked” a college football team (Irwin & Quealy, 2014). Generally, the Midwest and the Southeast are college football powerhouses, but regional characteristics alone seem inadequate to describe the amount of variation. For example, Illinois and Indiana, in the heart of the Midwest, have low concentrations of Facebook college football fans, while surrounding states have much higher percentages; meanwhile Oregon on the West Coast, surrounded by states relatively indifferent to college football, has a relatively high concentration of Facebook fans. In general, two latitudinal bands of football fan identification appear across the country – the upper Midwest to West Coast and the Southeast, which are connected across the Appalachian mountain ranges.

Simple regional generalizations about a state’s preferences for college football are inadequate to describe all variation in popularity levels. While in some instances proximity to a professional football team likely detracts from the NCAA football popularity (Price & Sen, 2003), we suggest other explanations may exist for the locations of college football fans. Perhaps underlying characteristics of the fan base driving some of the variance in enthusiasm for college football are cultural in nature and perhaps reflected by demographic data, including political affiliation.

In reference to American football in general, political lines seem to be correlated to enthusiasm for the sport. Recently, a *New York Times* article discussed national views on youth football, what it termed “the newest partisan divide” (Leonhardt, 2014). Increasingly, parents are concerned about letting their sons play the sport. In a recent poll reported by Leonhardt (2014), people were asked about their attitudes about children’s participation in youth American football. Interestingly, while American football – combining college and professional - is the most valuable commercial sport in the U.S., the national survey results showed that only 55% of parents were comfortable with their sons playing football, a sharp contrast to the above-90% figures for baseball, soccer, and track (Leonhardt, 2014). Given the physical risks to participants, this result lacks surprise.

Even more intriguing, however, was the variance of responses across the respondents’ socioeconomic characteristics. Specifically, unlike responses for baseball, soccer, track, and hockey, the pattern of respondents’ answers were clearly different when it comes to political party affiliation. Only 32% of parents who self-reported as being Democratic Party voters with a bachelor’s degree were comfortable with their sons playing football. In contrast, all Republican voters and Democratic voters without a college degree had similar response rates – between 58% and 65% for each category (Leonhardt, 2014). Thus, Leonhardt’s (2014) survey suggests uneducated democrats and all republicans together are about twice as likely to support their own sons’ participation in youth American style football, versus educated democrats. Moreover, the overarching trend in youth football seems to be fading, as information about the risks of the sport continue to mount. Yet, when considering the overall trend and controlling for political party, the trends show something different.

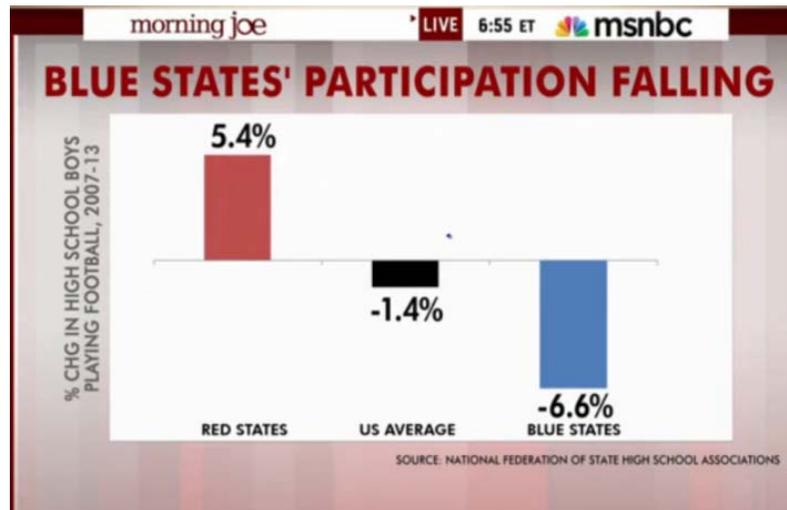
While nationwide and overall, high school football participation declined by 1.4% between 2007 and 2013, participation has *increased* by 5.4% in “red states” (states which voted for Republican presidential candidate Mitt Romney in 2012), with a 6.6% *decrease* among “blue states” (states which voted for President Obama in 2012), as shown in Figure 2 (National Federation of State High School Associations - “Even Football is Red and Blue,” 2014).

After looking at the demographic or socioeconomic composition of people living in “red” and “blue” states, we see that anecdotal evidence would suggest potential demographic and ideological characteristics associated with college football popularity. If so, implications exist for college football program values: if socioeconomic characteristics drive popularity of college football, then these characteristics likely also impact the magnitude of a program’s revenue growth prospects, and consequently, the program’s valuation, merely as a function of where within the country a program is located.

In this study, we addressed the following question: On a state-by-state level, what fan base characteristics are associated with a strong college football program? Because political parties are often split in terms of their demographics, we looked at the relationships that education level, ethnicity, income, and political affiliation - each measured state-by-state — have with NCAA college football program

values, with these characteristics cited as differences in the political science literature (Pew Research Center, 2012).

**FIGURE 2**  
**HIGH SCHOOL FOOTBALL PARTICIPATION**  
**(“EVEN FOOTBALL IS RED AND BLUE,” 2014)**



## LITERATURE REVIEW

As an exploratory study, unsurprisingly, no writings exist within the peer-reviewed sport management, economics, or political science literature streams investigating the relationships among political affiliations and American college football valuation. However, given the attention to concussions and other physical risks associated with participation in America’s most popular spectator sport, we feel this investigation warrants inclusion in the academic discussion.

While the literature lacks studies investigating the relationships among socioeconomic variables and college football program values, we build on works which have discussed relationships among various program-level variables. Brewer and Pedersen (2013a) found that college football program values were significantly associated with both short and long term team success, stadium size, endowment size, student population, stadium age, and head coach’s salary. Looking at team values in professional baseball, basketball, hockey, and football, Alexander and Kern (2004) explored the impact regional and local population and local income levels have on valuations, in addition to other team-specific characteristics. McEvoy, Morse, and Shapiro (2013) found that Bowl Championship Series (BCS) conference membership and school enrollment were significantly correlated to college football program revenues, while finding no significant relationship with population and per capita income at the county level.

While the current literature has explored the effect of certain socioeconomic variables on football program financial data (Alexander & Kern, 2004; McEvoy et al., 2013), we looked at additional factors not considered by these authors. Additionally, we used state-level variables, rather than local-level or regional-level variables used in previous studies. We found no study which included political party characterization of the host state as a predictor of college football program valuation.

## DATA COLLECTION

To analyze how changes in socioeconomic and political status are associated with changes in program value, we used a balanced panel dataset of variables across three presidential election years: 2004, 2008, and 2012. With 100 observations in each year and three years of data, the panel includes 300 observations. Following is a description of the variables used in our analysis:

*Revenues:* Program revenue is not reported directly and thus must be approximated. The estimate was made using the method described in Brewer and Pedersen (2013b), by summing the pro rata percentage of non-allocated revenues with those revenues directly attributed to football, as reported in the EADA cutting tool (U.S. Department of Education, 2013). The pro rata percentage of non-allocated revenues was established by assessing the fraction of total allocated revenues within each athletic department that comprised football operations, and multiplying this fraction by the non-allocated revenues. This product was estimated to reflect revenues arising from football. No adjustments were made for intangible value attributions such as goodwill to the university, the “Flutie Effect,” differential state appropriations, or other indirect revenues arising from sport presence.

*Program Value:* our second dependent variable represents football program valuations for programs at the 100 public universities in NCAA Division I football (Brewer & Pedersen, 2013b). Program values represent consideration of two distinct valuation methods: revenue multipliers and discounted cash flow analysis. In professional football, teams are valued primarily by their ability to generate revenue, which prospective buyers of teams prefer to consider as expense levels can vary quite significantly among franchises, rendering cash flow analysis less useful than in other industries. Thus, the first valuation method uses NFL-based revenue multipliers for college football program value indication. The general value equation is given below:

$$\text{Value Indication} = \text{Multiplier} \times \text{Revenue} \quad (1)$$

Football teams are valued on revenue, however, *given* their ability to cash flow. While financial losses are rare in the NFL, expenses sometimes exceed revenue in NCAA Division I football programs having less brand development. Therefore, valuing college football programs solely on revenues would fail to reflect the risks associated with running expense-intensive football program lacking a market sufficient to produce positive earnings. The second valuation method implements a constant growth model, using the cash flow in the year following the valuation year projected forward at a constant rate, a discount rate in the form of a weighted average cost of capital, and a growth rate. The general valuation model is given below:

$$\text{Value Indication} = \frac{CF_1}{k-g} \quad (2)$$

where  $CF_1$  is the program’s cash flow in the valuation year,  $k$  is the program’s estimated weighted average cost of capital, and  $g$  is the projected growth rate.

The value (dependent) variable used in this report represents the average of these two valuation methods, both of which are invested capital indications that do not consider debt level or capital structure, and is denominated in millions of dollars. Note that if the resulting value indication was negative, the program was assigned a valuation of zero (0).

Table 1, below, shows the top ten programs, ranked by valuation as of 2012 (Everson, 2013). Revenues and coach’s salary are included for reference.

*Income:* The income variable is the average per capita income in the program’s state, denominated in thousands of dollars. Data was retrieved for each state and year from Stats Indiana (Stats Indiana, 2014).

*Dmargin:* For states denoted “Democrat,” this political variable represents the magnitude of a state’s Democratic tendency. This variable is an interaction term, using a “Democrat” dummy variable which is not used independently in the model. A state is considered “Democrat” in a particular election year if the

Democratic candidate won the presidential popular vote in that state. For those states, this variable represents the difference between the percentage of Democratic votes and the percentage of Republican votes. Election data were retrieved from the Federal Election Commission (FEC, 2014).

*Rmargin*: This political variable is identical to the prior variable, except it measures the magnitude of a state’s Republican tendency. This variable is an interaction term, using a “Republican” dummy variable which is not used individually in the model. For states voting for a Republican presidential candidate, this variable was calculated as the difference between the percentage of Republican votes and the percentage of Democratic votes. Election data were retrieved from the Federal Election Commission (FEC, 2014).

*College*: This education variable represents the percentage of adults in the state over age 25 having a bachelor’s degree. Data was retrieved from the United States Census Bureau (Census Bureau, 2014).

**TABLE 1**  
**TOP 10 HIGHEST-VALUED PROGRAMS, 2012**

<i>Institution</i>	<i>2012 Valuation</i>	<i>2012 Revenues</i>	<i>2012 Coach's Salary</i>
Texas	761.70	123.30	5.29
Michigan	731.90	109.23	3.05
Florida	599.70	98.00	4.25
Ohio State	586.60	91.30	2.47
Auburn	508.10	85.80	4.55
Georgia	481.80	76.16	2.81
Alabama	476.00	92.15	3.50
LSU	471.70	100.27	5.32
Oklahoma	454.70	88.17	3.75
Iowa	384.40	63.41	2.88

*Minority*: This ethnic variable represents the minority composition of the state, measured as the non-white percentage of the population. Data was retrieved from the United States Census Bureau (Census Bureau, 2014).

*Enroll*: This variable is the natural logarithm of the number of undergraduates at the program’s school. While not a socioeconomic characteristic, this variable was used as a program-specific variable to capture differences in the values of programs residing in the same state (as all other variables were state-level characteristics, without a program-specific variable, predictions would be identical for programs located in the same state). Prior studies have found enrollment to be a positive and significant predictor of program valuation and revenues (Brewer & Pedersen, 2013a; McEvoy et al., 2013). Data was retrieved from the Equity in Athletics Data Analysis (EADA) database (US Department of Education, 2014).

Summary statistics of the eight variables are given in Table 2 below. Minority, College, and Income were included as control variables (Pew Research Center, 2012), with no formal hypothesis stated concerning the magnitude or sign of their coefficients. Exploration on these three variables is justified because of the disparity between Democratic and Republican response rates to their family permissions to participate in football, and we are attempting to tease out additional potential factors that may underlie political affiliation differences. The following hypotheses are made for Dmargin, Rmargin, and enroll, respectively:

*H<sub>1</sub>*: The coefficient of Dmargin will be negative, indicating that higher Democratic tendency in the state has a negative relationship with college football program values;

*H<sub>2</sub>: The coefficient of Rmargin will be positive, indicating that higher Republican tendency in the state has a positive relationship with college football program values;*

*H<sub>3</sub>: Drawing from previous literature, the coefficient on enrollment will be positive, indicating that higher enrollment is associated with a higher college football program value.*

**TABLE 2**  
**SUMMARY STATISTICS**

Variable	Obs	Mean	stdev	min	max
value	300	100.22	139.78	0.00	889.00
revenue	300	23.22	22.38	0.78	123.30
minority	300	21.28	10.08	3.92	59.56
college	300	25.72	4.21	16.90	37.50
income	300	37.12	6.00	25.27	60.22
enroll	300	19.33	7.85	4.61	50.39
Republican Vote (Presidential)	300	0.56	0.50		
Democrat Vote (Presidential)	300	0.44	0.50		

## RESULTS

To determine whether a random effects model or a fixed effects model was more appropriate for the dataset, we used the Hausman test:

$$H = (b_{FE} - \beta_{RE})' [V_{FE} - V_{RE}]^{-1} (b_{FE} - \beta_{RE}) \quad (3)$$

where H is the test statistic, following a chi-squared distribution;  $b_{FE}$  and  $\beta_{RE}$  are the coefficient vectors for the fixed effects and random effects models, respectively; and  $V_{FE}$  and  $V_{RE}$  are the covariance matrices for the fixed effects and random effects models, respectively (Hausman, 1978; Greene, 2008, p. 209). The test statistic led to rejection of the null that  $\beta_{RE}$  is efficient, indicating that a fixed effects model was more suitable to this dataset. Using within-groups fixed effects, we estimated the following model, paneled by program across three election years:

$$y_{it} = \sum_{j=1}^6 \beta_j X_{jit} + \gamma_i + \varepsilon_{it} \quad (4)$$

where  $y_{it}$  represents either program revenues or program value,  $X_{jit}$  represents one of six independent variables,  $\gamma_i$  are program fixed effects.

To test for potential heteroskedasticity across cross sections in the fixed effects model, I utilized Greene's modified Wald statistic for groupwise heteroskedasticity, given by:

$$W = \sum_{i=1}^{N_g} \frac{(\hat{\sigma}_i^2 - \hat{\sigma}^2)}{v_i} \quad (5)$$

where  $V_i$  is the estimated variance of  $\hat{\sigma}_i^2$  (Baum, 2001). The null hypothesis is given by  $H_0: \sigma_i^2 = \sigma^2$  for all  $i$ .

The test showed that groupwise heteroskedasticity was present in the model, so robust standard errors were used.

Table 3 shows our econometric results, using program revenues as the dependent variable. Across both models (model A without year fixed effects and model B including year fixed effects) Dmargin and enrollment are significant at the 1% level. For programs located in Democratic States, a 1 percentage point increase in the victory margin is associated with revenues that are \$370,000-460,000 lower. A one thousand increase in student enrollment is associated with a \$480,000-530,000 revenue increase. The college and income variable is significant in model A, suggesting that programs located in states with a more highly educated and richer populace experience higher revenues. However, college and income lose significance when year fixed effects are included.

We repeated the above analysis using program valuation instead of program revenues. Our results are shown in Table 4, below. The results are qualitatively similar to the revenue regression. Dmargin and enrollment are highly significant across both models C and D. In Democratic States, a one percentage point increase in the victory margin is associated with a \$2,200,000-2,900,000 lower valuation. A one thousand increase in student enrollment is associated with a \$2,300,000-2,700,000 higher valuation.

As a check on the independent variables, we considered potential correlation between the variables. Certainly, we would expect college and income to be correlated. High multicollinearity would pose a significant threat to proper interpretation of the model coefficients. The correlation matrix of the six variables, shown in Table 5, did reveal significant relationships between a few of the variables: Income and College, Dmargin and College, and Dmargin and Income all had correlations above 0.5.

**TABLE 3**  
**COLLEGE FOOTBALL PROGRAM REVENUES**

Variable	A	B
Dmargin	-0.46*** (0.14)	-0.37*** (0.13)
Rmargin	0.10 (0.16)	-0.08 (0.19)
minority	0.31 (0.65)	0.13 (0.72)
college	6.18*** (1.13)	-0.40 (2.03)
income	0.99*** (0.28)	0.22 (0.55)
enroll	0.48*** (0.14)	0.53*** (0.14)
_cons	-186.23*** (21.26)	6.80 (53.67)
Program FE?	Yes	Yes
Year FE?	No	Yes

**TABLE 4**  
**COLLEGE FOOTBALL PROGRAM VALUES**

Variable	C	D
Dmargin	-2.90*** (0.89)	-2.21*** (0.76)
Rmargin	0.07 (0.99)	-1.12 (1.19)
minority	-0.09 (3.81)	-0.54 (4.23)
college	19.86*** (7.02)	-13.05 (12.89)
income	4.83*** (1.73)	2.39 (3.49)
enroll	2.31*** (0.74)	2.67*** (0.74)
_cons	-620.34*** (123.05)	294.67 (348.63)
Program FE?	Yes	Yes
Year FE?	No	Yes

**TABLE 5**  
**CORRELATION MATRIX**

Variable	minority	college	income	Enroll	Dmargin	Rmargin
minority	1					
college	0.0965	1				
Income	0.0748	<b>0.6945</b>	1			
enroll	0.0099	0.0375	0.1883	1		
Dmargin	0.2958	<b>0.5259</b>	<b>0.5595</b>	0.1705	1	
Rmargin	-0.1511	-0.3861	-0.3679	-0.0659	-0.4947	1

To test for significant multicollinearity among these variables, variance inflation factors (VIFs) were calculated. As shown in Table 5, none of the variables had a VIF above 2.5:

**TABLE 6**  
**VARIANCE INFLATION FACTORS**

<i>Variable</i>	<i>VIF</i>	$\sqrt{VIF}$	<i>Tolerance</i>	<i>R Squared</i>
minority	1.11	1.05	0.8991	0.1009
college	2.12	1.46	0.4718	0.5282
income	2.24	1.5	0.4464	0.5536
enroll	1.07	1.03	0.9341	0.0659
Dmargin	1.92	1.39	0.5212	0.4788
Rmargin	1.37	1.17	0.7318	0.2682

As 5, 10, or even 20 are often suggested as maximum thresholds of acceptance for VIFs (Snee, 1977, Greene, 2008), multicollinearity does not seem to pose a threat in this model.

## CONCLUSIONS

The fixed effects model suggests that certain state-level socioeconomic variables are significantly associated with college football program values. Model results suggest the following:

- The significance of the College variable ( $p < 0.01$ ) indicates that as a state's population becomes more educated, college football program revenues and valuations in that state increase as well.
- The significance of the Income variable ( $p < 0.01$ ) indicates that as state income rises, college football program revenues and valuations rise as well.
- The significance of the Dmargin variable ( $p < 0.01$ ) suggests that within Democratic-leaning states during presidential election years, the higher the Democratic proportion of the vote, the lower college football program revenues and values.
- Confirming results in prior studies (Brewer & Pedersen, 2010; McEvoy, Morse, & Shapiro, 2013), the significance of the enrollment variable shows that schools with a large student body experience college football revenues and values.

In contrast to Dmargin, Rmargin was found to be insignificant. The implication seems to be that, if a state leans Republican, the magnitude of the political tendency has no bearing on program revenues and values. Some explanation for this may lie within closer examination of the geographic locations of the most valuable programs outside of the Southeast. Alongside raw population, cultural preferences drive fan identity in specific geographic regions, apart from population density or number, with the American Southeast and Midwest having American college football as an engrained pastime each fall. For instance, the Ohio State University and the University of Michigan host two of college football's most valuable franchises. Yet, they reside in states that generally are relatively split between Republicans and Democrats, with considerable blue collar Democrats residing in these industrial states. However, they each have around 10 million people in population, which implies they are home to approximately 5 million Republicans, each. In contrast with this, the states of Alabama and Louisiana are home to significantly less population, but a higher proportion of Republicans, and the football programs at Louisiana State University and the University of Alabama are also very valuable. Therefore, while additional research would be necessary to tease out differences arising from raw population versus proportion of Republicans per state, it may simply be the case that having a state wherein enough Republicans or lesser educated Democrats live generally yields more highly valued football programs. Any such investigations would provide possibilities for continuing this discussion.

Conversely, if a state leans Democratic, then a greater magnitude of the tendency is associated with greater declines in college football program value. Explanations for this may be associated with population density, educational attainment levels, Democratic party affiliation, and preferences for entertainment, or presence of an NFL franchise nearby. Again, more research would be necessary to explore these possibilities.

The Minority variable was not significant in the model. This could indicate that ethnic backgrounds do not relate to American college football program value. Clearly, the results of our study suggest precisely that; we found no evidence between ethnicity of states and football program value levels in those states. However, since Minority is measured simply as the non-white percentage of the population, it would not reveal information about preferences among various specific minority ethnic groups. Therefore, it could be that ethnic diversity of the state population does not relate to program values, or perhaps relationships do exist between particular ethnic groups and program values, but their population levels are insufficient to affect program values. In any event, results here reveal no evidence to suggest ethnicity is related to American college football program value.

Even in the midst of a trial against American style football, where more information about the physical risks to participants is presented to the public on a frequent basis (e.g., Breslow, 2013), and even as commercial athletics seems to be fully inconsistent with the mission of any nonprofit institution of higher education, the number of NCAA Division I football programs continues its rise – up from 117 programs in 2011 to 127 programs in 2014. As a commercial effort to market universities and raise awareness of brand, to attract and retain better students and faculty, more and more universities continue to make capital investment of millions of dollars in football-related resources to fund a start-up football ventures (Equity in Athletics Data Analysis Cutting Tool, 2014), as opposed to investing directly in academic facilities. More thorough understanding of financial and nonfinancial college football program valuation drivers is needed. This study provides new direction about those value drivers heretofore left unmentioned or unanalyzed.

## REFERENCES

- Alexander, D. L. & Kern, W. (2004). The economic determinants of professional sports franchise values. *Journal of Sports Economics*, 5, (1), 51-66.
- Baum, C. (2001). Residual diagnostics for cross-section time series regression models. *The Stata Journal*, 1, (1), 101-104.
- Breslow, J. (2013, October 31). High school football players face bigger concussion risk. *Frontline, PBS*. Retrieved from <http://www.pbs.org/wgbh/frontline/article/high-school-football-players-face-bigger-concussion-risk/>
- Brewer, R. (2015). What's your college team worth? *Wall Street Journal*. [Data file]. (2015, January 12). Retrieved from <http://www.wsj.com/articles/whats-your-college-team-worth-1421081367>
- Brewer, R. M. & Pedersen, P. M. (2013a). Predicting the value of NCAA Football Bowl Subdivision programs. *International Journal of Sport Management*, 14, 271-295.
- Brewer, R. M. & Pedersen, P. M. (2013b). A method for the financial valuation of National Collegiate Athletic Association Football Bowl Subdivision Programs. *Journal of Contemporary Athletics*, 7, (3), 176-196.
- Brown, M., Nagel, M., McEvoy, C., & Rascher, D. (2004). Revenue and wealth maximization in the National Football League: The impact of stadia. *Sport Marketing Quarterly*, 13, 227-235.
- Equity in Athletics Data Analysis Cutting Tool (2014). United States Department of Education. [Data file]. Retrieved from <http://ope.ed.gov/athletics/>
- Even football is red and blue in the US [Video file]. (2014, November 13). Retrieved from <http://www.msnbc.com/morning-joe/watch/even-football-is-red-and-blue-in-the-us--charts-357380163755>
- Everson, D. (2013, January 7). What is your team worth? *The Wall Street Journal*. Retrieved from <http://www.wsj.com/articles/SB10001424127887324391104578225802183417888>

- Federal Exchange Commission (2014). Retrieved from <http://www.fec.gov/pubrec/electionresults.shtml>
- Gaines, C. (2014). The NFL still destroys the other sports in the battle for TV ratings. *Business Insider*. Retrieved from <http://www.businessinsider.com/nfl-tv-ratings-2014-1>
- Gallup. (2014). *Football [Chart]*. Retrieved from <http://www.gallup.com/poll/1705/football.aspx>
- Greene, W. H. (2008). *Econometric analysis* (6<sup>th</sup> ed.). New Jersey: Pearson Prentice Hall.
- Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46(6), 1251-1271.
- Irwin, N. & Quealy, K. (2014, November 8). The places in America where college football means the most. *New York Times*. Retrieved from [http://www.nytimes.com/2014/11/08/upshot/the-places-in-america-where-college-football-means-the-most.html?\\_r=2&abt=0002&abg=1](http://www.nytimes.com/2014/11/08/upshot/the-places-in-america-where-college-football-means-the-most.html?_r=2&abt=0002&abg=1)
- Jones, R. (2015, March 20). Should you let your kids play football? *CNN.com*. Retrieved from <http://www.cnn.com/2015/03/20/opinions/jones-football-kids-concussions/>
- Lupkin, S. (2012, September 3). Conservatives and liberals have different brains, studies show. *ABC News*. Retrieved from <http://abcnews.go.com/blogs/health/2012/09/03/conservatives-and-liberals-have-different-brains-studies-show/>
- McEvoy, C. D., Morse, A. L., & Shapiro, S. L. (2013). Factors influencing collegiate athletic department revenues. *Journal of Issues in Intercollegiate Athletics*, 6, 249-267.
- Leonhardt, D. (2014, November 4). The newest partisan divide: Views on youth football. *New York Times*. Retrieved from <http://www.nytimes.com/2014/11/04/upshot/football-the-newest-partisan-divide.html>
- Pew Research Center (2012, August 23). A closer look at the parties in 2012 – GOP makes big gains among white working-class voters. *Pew Research Center: US Politics & Policy* Retrieved from <http://www.people-press.org/2012/08/23/a-closer-look-at-the-parties-in-2012/>
- Price, D. & Sen, K. (2003). The demand for game day attendance in college football: An analysis of the 1997 Division I-A season. *Managerial and Decision Economics*, 24, (1), 35-46.
- Schwartz, N. & McGarry, T. (2014, January 26). The NFL is the most popular sport in America for the 30<sup>th</sup> year running. *USA Today*. Retrieved from <http://ftw.usatoday.com/2014/01/nfl-most-popular-sport-poll>
- Smith, C. (2013, December 18). College football's most valuable teams 2013: Texas Longhorns can't be stopped. *Forbes*. Retrieved from <http://www.forbes.com/sites/chris-smith/2013/12/18/college-footballs-most-valuable-teams-2013-texas-longhorns-cant-be-stopped/>
- Snee, R. D. (1977). Validation of regression models: Methods and examples. *Technometrics*, 19, (4), 415-428.
- STATSIndiana. (2014.) *Indiana University Kelley School of Business*. Retrieved from <http://www.stats.indiana.edu/>
- Terry, N., Pjesky, R., & Patterson, R. (2010). Determinants of Women's College Basketball Profit. *The Journal of Global Business Management*, 6, (2).
- U.S. Department of Education. (2013). The equity in athletics data analysis cutting tool. Retrieved from <http://ope.ed.gov/athletics/>
- American FactFinder (2014). *U.S. Census Bureau*. Retrieved from <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (5<sup>th</sup> ed.). MIT Press.