SI's Deeper Look: Return on Investment of College Football Programs

Is money really the key to success?

STEPHANIE FISSEL • DEC 16, 2022

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It's the most wonderful time of the year . . . it's the post season! The regular season is over and now it's time to get ready for the biggest bowl games and the College Football Playoffs within the next few weeks.

After watching this 2022 college football season and basically seeing the same teams land the top overall standings and playoff spots as in previous years, *Sports Illustrated* wanted to know if there are any hidden secrets to success for these top-ranked teams. How are teams like Alabama, Ohio State, Oklahoma, and Georgia, just to name a few, able to grow and maintain their standings over the years? *Sports Illustrated's* college football gurus took this question, did some investigating, and likely discovered the key to success.

Using this observed common trend as a starting point, the focus of the research is to take a deeper look at the return on investment of college football programs by analyzing the revenue and expense breakdowns of NCAA D1 Football Bowl Subdivision teams. In this context, return on investment represents the ranking advantage of teams. Further, the goal is to determine whether more revenue generated by a college football program gives them a greater incentive to spend a larger amount of money on their program, which could then result in a higher standing. That being said, top teams should expect to earn the highest revenue relative to all of the other teams and then put those funds back into their program year after year in order to maintain a higher standing.

Before diving into whether this hypothesis is correct or not, it's necessary to go over the data collected and then give a rundown of the process so you understand what went into the research and

know that the results weren't pulled out of thin air. Don't skip to the end because it's about to get interesting.

First, here's more information about the data. The analysis included both financial and standing data. The financial data is the most difficult to obtain because it's not something that's very widely accessible to the public. After a lot of research, Sportico.com ended up having the greatest amount of information to use in their College Athletic Departments Financial Database. There are some limitations with using this data, though, because the website only presents data on intercollegiate finances from the 2017-2018 season through the 2020-2021 season for public schools. Despite these limitations, this is probably the best resource out there because it specifies the breakdown of each available program into categories for both revenue and expenses within football. To look into this data, here are five programs with the highest total operating expenses located in Figure 1.

FIGURE 1
HIGHEST TOTAL OPERATING EXPENSES

1. ALABAMA — $62.7 MILLION
2. TENNESSEE — $53.3 MILLION
3. FLORIDA STATE — $52.3 MILLION
4. CLEMSON — $51.5 MILLION
5. OHIO STATE — $51.0 MILLION

There is also an interest in focusing on the Power Five Conferences: ACC, Big Ten, Big 12, Pac-12, and SEC. Teams not included in these five conferences are grouped into an "Other" conference.

For data on standings, there are no normal standing ranks. Instead, Sports Reference has a rating index for all college football teams called the Simple Rating System (SRS). If you're unfamiliar with the SRS, it is essentially a rating system that takes into account average point differentials and strength of schedule. More specifically, it does not contain a home-field advantage element, though it does cap the margin of victory at twenty-four points. For more details, you can check out their website. The SRS also has units that are very easy to interpret. Here's an example that is illustrated in Figure 2 below: if the Virginia Cavaliers had an SRS rating of 2.21 in the 2021-2022 season and the Virginia Tech Hokies had an SRS rating of -0.33, then the system thinks that the Cavaliers were about 2.5 points better than the Hokies overall in that particular season.

FIGURE 2

SRS: 2.21   +2.54 UVA   SRS: -0.33

Regarding the SRS data, Sports Reference has ratings for all teams over most seasons, but since there's limited financial data, SRS team data has to be matched to the available teams in the financial data.

Now that all of the data collection is complete, there has to be some way to combine it all in order to obtain results to the question at hand. The method used is running a regression. This isn't going to get too nitty-gritty, so don't worry, but if you're unfamiliar with how a regression works, basically there are different factors that explain a selected outcome variable. These different factors are called explanatory variables since they explain the variable in question. The variable in question is called the response variable because it is responsive to changes in the explanatory variables.

In this regression, the explanatory variables are specific components of a program's revenues and expenses. A program's status in each conference has a dummy variable in order to see whether being a member of a specific conference has any effect on standing. Going back to the components of revenues and expenses, more specifically, the revenue categories include ticket sales, media rights, and donations. These revenue sources all represent fan support. The expenses include coaching compensation, admin compensation, equipment, and athletic student aid. On the other side, the response variable is the SRS which, again, measures the standing of a program. As a note, the averages of each variable are over the four seasons for this regression.

Now that everyone is practically a statistician at this point, the basic regression equation is below.

SRS = REVENUES + EXPENSES + CONFERENCE

The regression ran and here are the findings that may explain why your team hasn't done as well as you'd hoped. First, being a team in the SEC or Big Ten Conference positively affects its SRS, meaning that being in one of those two conferences would more likely increase a team's standing. Next, media rights is a negative and significant factor in an SRS rating, which is surprising because it's positively correlated, but this could also be the result of the small sample of schools due to the limits in the data. Then, ticket sales is a positive and significant factor in the SRS rating, which one would anticipate because it's directly based on fan support and engagement. Last, coaching compensation is also a positive and significant factor in the SRS rating, which isn't surprising because coaching quality directly impacts player performance. All of that said, to have a better performing team, maybe programs with lower standings should take into account and analyze some or all of these factors to observe if improving them could actually contribute to their overall standing.

In order to demonstrate a simple visualization for this relationship of data, Figure 3 is a scatterplot of all of the D1 FBS programs with regards to their average expenses and average SRS values.

FIGURE 3
AVERAGE EXPENSES VS. AVERAGE SRS
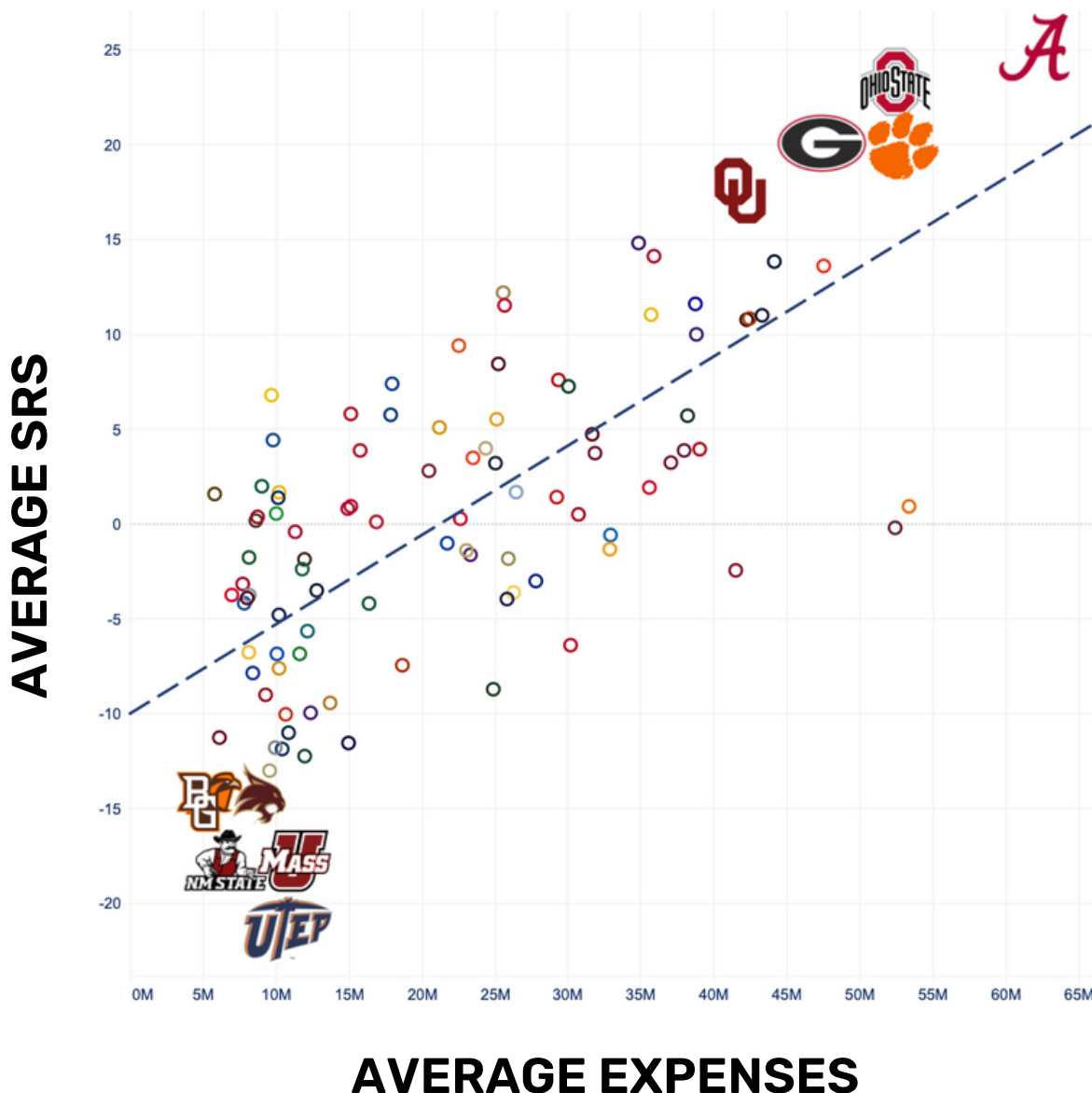
As you can see, the top five and bottom five SRS–ranked programs have their respective logos highlighted, demonstrating the contrast

between each team's average expense and SRS values. It also emphasizes the start and end of the trend line, along with the moderate clustering of points, which relays that there is a moderately strong positive linear relationship for increasing average expenses with a resulting increase in average SRS. This is interesting to see because the trend continues into this current season where schools like Georgia and Ohio State are facing each other in the College Football Playoffs. Once the financial data gets updated, it would be interesting to analyze this past regular season to see any other repetitive patterns, so stay tuned.

This last segment is for any college football fan who wants a more in-depth look at college football programs' finances and it can even be implemented by stakeholders in college football programs. *Sports Illustrated*'s gurus went above and beyond in developing these dashboards in order to further analyze financial data and SRS rankings. They are interactive, so click to access and explore here: *Sports Illustrated* CFB Dashboards.

Dashboard 1 is for the overall D1 Football Bowl Subdivision. There is an image of it below. It has filters for each school and conference so you're able to look into and compare specific schools or conferences with each other regarding their expenses and SRS ranks. The previous is also in this dashboard and as part of its interactivity, you can hover over the points to see broken-down data for each school. The last thing is a comparison by conference of the average
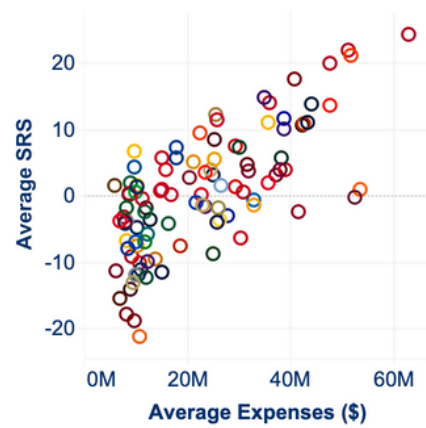
total operating expenses and revenues.
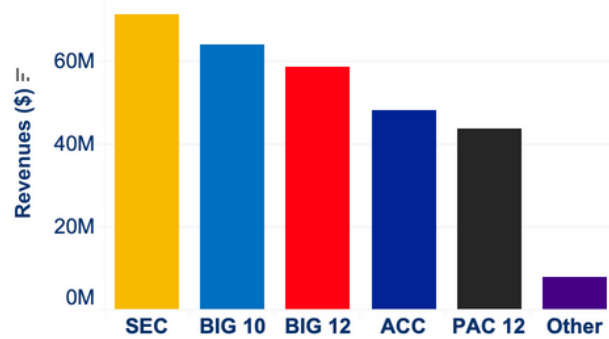
DASHBOARD 1

NCAA DIVISION I FOOTBALL BOWL SUBDIVISION
2017/18 - 2020/21

| School	Conference	Average Expenses ($)	Average SRS
Alabama	SEC	62,671,816	24.48
Ohio State	BIG 10	50,986,450	22.08
Clemson	ACC	51,497,610	21.23
Georgia	SEC	47,539,515	20.03
Oklahoma	BIG 12	40,559,746	17.63
LSU	SEC	34,776,815	14.85
Wisconsin	BIG 10	35,829,788	14.16
Penn State	BIG 10	44,074,356	13.88
Auburn	SEC	47,457,935	13.65
UCF	Other	25,505,097	12.24
Florida	SEC	38,667,013	11.64
Indiana	BIG 10	25,596,950	11.56
Iowa	BIG 10	35,637,517	11.07
Michigan	BIG 10	43,237,266	11.04
Texas	BIG 12	42,368,369	10.87

Average Expenses vs. Average SRS

Conference Average Total Operating Revenue

Conference Average Total Operating Expense
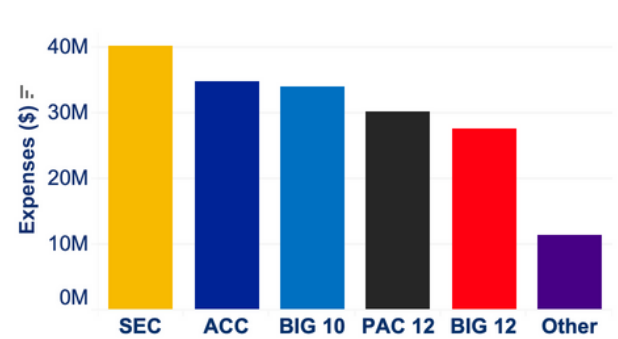
Dashboard 2, found below, is a prototype for a program-specific dashboard using the Virginia Cavaliers for this instance. In the future, this could be customized to any football program, so if you're interested in any particular team, leave a comment below so more can be published. Among many things, you can see where Virginia stands compared to other ACC teams, as well as what the proportional make-up of their operating revenues and expenses are. Go check it out!

DASHBOARD 2

VIRGINIA CAVALIERS FOOTBALL
2017/18 - 2020/21

AVG. SRS: 3.24   AVG. OPERATING REVENUE: $34,606,784.25   AVG. OPERATING EXPENSE: $24,974,508

School	Average Expenses ($)	Average SRS
Clemson	51,497,610	21.23
Virginia Tech	31,791,149	3.77
Virginia	24,974,509	3.24
North Carolina	26,386,499	1.71
Louisville	30,659,292	0.54
Florida State	52,349,223	-0.17
Georgia Tech	25,854,965	-1.80

Average Total Operating Expenses vs. Average SRS

UVA Football Revenues

UVA Football Expenses