5-2016

Net Present Value Model Application for identification of capital gains/loss in athletic investment

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An Undergraduate thesis submitted in partial fulfillment of Honors for the university Honors program

and the

Honors-in Discipline Program

East Tennessee State University

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April 19, 2016

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1) Executive summary

This study evaluates whether there is a capital gain yield in the athletic investment decision allocating university resources to any component of athletics (teams, facilities, equipment, etc.) at any institution. The data for testing is analyzed by using the ***NET PRESENT VALUE MODEL*** *which is composed of initial outlays, operating cash flows at time t, and cost of capital. This analysis will estimate if the investment decisions are correct or not. After the use of the capital investment model above, the results will determine whether the project was a good investment decision.*

2) Literature review

a) The Recent Business Perspective

The continuous need of knowing how to allocate resources in an athletic department has always been an important decision for universities. Some experts have adapted a unique approach to the investment analysis that the athletic department is responsible for the good of the university. Some interesting approaches are economic approaches like the one offered in the article *Effects of University Athletics on the University: A Review and Extension of Empirical Assessment* in which economic concepts are taken into account in allocating resources following economic theory, (Schneder, 2012). This article is key for my thesis analysis because it has a general view of what concepts should be considered for making investment decisions, especially for athletics. In this case, the basic economic knowledge can be an indirect factor that might produce an increase in the operating cash flows making them bigger if there is an expansionary phase. On the other hand, if there is a recession, the initial investment has the possibility of being reduced or either being dropped later when the recession stops. If the economic view presented by Dr. Schneder is considered by any athletic department, it can make a difference between a positive or negative NPV value.

Other experts approach a differ viewpoint that is more meaningful in terms of accountability where success depends on how the institution performs in athletic competitions. According to Mr. Sparvero in the article *The Price of Winning and the Impact on the NCAA Community,* the allocation of money is determined by putting resources in teams that are more likely to be champions in either their own conferences or NCAA tournaments (Sparvero, 2013). This will help identify which universities have bigger budgets and why. Recognized schools (such University of Tennessee, Georgia, UCLA, etc.) in sports like basketball and football are able to

spend more money in their overall athletic facilities due to the large cash inflows they attain. If the university evaluated is in the group of capital losses (if any) this athletic performance can be the reason why they do not generate as much operating cash flows as the bigger universities.

Experts like Dr. Fitzpatrick have been more deeply involved in the conference factor and have found evidence between the relationships of how good investments can be a cause of capital gains. In the article *In Investing, Yale Has Harvard's Number* he discusses these factors for Yale University. This article has a similar approach with the one made by Dr. Schneder. In this case, the Ivy leagues (conference) is an example. (Fitzpatrick, 2014). This observation by Dr. Fitzpatrick is a good base for the recommendation part later on in this research; this might be the key for non-big conferences to try to copy what the Ivy leagues do for being able to generate gains from athletics. The Ivy League schools are well known for their academic level around the U.S. but they are also known for having good athletic programs. They might not be the top in the NCAA national competitions, but good enough to make money from their athletic investments.

b) The Business Perspective

People in the past have been concerned with the environment the institution is in and how to capitalize on any possible advantage to gain extra revenue. According to the Washington Post news feed *Northwestern finds gold in California*, the situation Northwestern University faced in 1995 was a good example of how to take advantage of a successful football team and all the possible cash flows they had at that time (1995, December 31). Once again, the understanding of the timing invested is crucial for universities to have success in athletic investment. Probably the best way to narrow this idea is that when a big sport has their golden moment, an investment can

be easier to recover and is able to continue generating revenue over the life of the investment decision.

Since the sample that is used for this study is divided by school size (Best ranked football schools, medium size schools and Ivy League schools {small}) the analysis did by Dr. Toma in the book *The uses of intercollegiate athletics- Opportunities and challenges for the university* has a relationship with this divide category. Toma said that when making an investment decision, one of the two most important variables to take into consideration is size and management media performance. Toma also stated that if there is a lack of good budget management, it is possible that profits never appear (Toma, 2009). Apparently, a good combination of school size as well as administrative performance is the key to having a Net Present Value greater than zero, i.e. a profitable investment.

Other important factors that should be taken into consideration for the recommendation part of this research is how well the model is able to explain the capital gain yield that the different institutions have. According to Dr. Gronberg in the article *The impact of facilities on the cost of education,* the cost of education goes up when there is an investment in athletic facilities (Gronberg, 2011). In other words, tuition and other costs the student have to pay in order to receive educational services will increase if there is a relationship between investment and athletics. A good recommendation will come from universities that have the greater NPV (meaning more profitability), identifying which of the components of the equation as having differed from other universities that also had gains at the end of the year. This is also related to the results the NPV model will estimate for the different school categories.

Another important perspective comes from ETSU athletic financial members that are completely involved with the experience of having a big investment in not only the new football

team, but also in equipment, gym facilities, and with the future projection of constructing a new ETSU Stadium for this program. Dr. Anderson is convinced that an investment in athletic sports is extremely important for the university to generate newcomer's enrollment. This new process creates two different cash flows from the new student members. The first one is all the student tuition and fees associated with freshman registration, but also a second cash inflow (which was called from him a direct destination) close to $275 per student. (Anderson, 2015) According to Dr. Anderson, this new cash inflow is a good resource to repay the principle or initial investment outlay and also a good fund to pay for all the other athletic obligations such as scholarships and salaries for coaches. This interview has another important contribution for the future that will be related to how the creation of an entirely new team has the potential to be a main cash flow generator (in this case football) to raise operating cash flows in a way that make the university more valuable and profitable at the same time.

According to Dr. Chen in the article *To Name it or not Name it: Consumer Perspectives on Facility Naming Rights Sponsorship in Collegiate Athletics*, undergraduate students are interested in how athletics in their different institutions perform, meaning that there is a sense of pride when schools have a good performance in the differing sponsored sports. This leads the athletic departments of having a mission to satisfy the inside followers of the different teams by constructing nice facilities that make the students pleased and happy (Chen, 2012). This is another important viewpoint for students when making the decision to attend any institution. If a student is not happy with the athletics performance or just the view of the facilities, the image he or she will promote around his or her friends will not be good. This means that there is a possibility that people who are interesting in enrolling with the institution might go to another place. The decision

between attending or not to attend any university will affect the cash inflows such as tuition and fees of an institution.

The cash flows that the construction of a facility such as a football stadium brings to any institution seems to be extremely beneficial for a university. According to Dr. Maxcy in the article *Reversal of Fortune or Glaring Misallocation: Is a New Football Stadium Worth the Cost to a University?* the money injection that comes from such investments has a broad impact around campus life such as an increase in the campus community, increase in aid for students and also an increase in campus interactions (Maxcy, 2015). An increase in these variables suggests an increase in cash inflows and also an increase in the opportunity to increase the budget for the initial outlay needed for the investment.

The government information is also pointing out good benefits in profitability that institutions have had by capitalizing on opportunities. See the United States General Accounting Office on the article *Intercollegiate Athletics Four Year Colleges Experience Adding and Subtracting.* there is an increase in profits by using available resources in the construction of facilities for sports like soccer, track, football and softball (PDF Document, 2001). The generation of positive cash flows suggest that they are big enough to produce a gain in the university that has the ability to invest in good athletic facilities. This suggest that a capital gain yield can be reflected in institutions that decide to use resources in the construction of facilities that not only bring spectators in, but also sponsorship capital that make a difference in the NPV model result.

For this research the social impact is also important to understand investment decisions. According to Dr. Leeds in the article *Interscholastic Athletics and Investment in Human Capital,* the investment in athletics can either help or hurt people to become successful in the cultural experience depending on their origins (Leeds, 2007). Dr. Leeds shows the existing relationship

between athletic investment and the positive impact that this decision has in different cultures. The race factor is important for this decision by knowing what the demographics of the people enrolled in campus are. The reason behind this is to understand if the university decisions are providing successful experience for the students which are enrolled in the institution which might increase success in student's life according. Making investment decisions not only for profit purposes but for better quality life purposes can still generate gains for the university and for the students as well.

The main difference with this research is that sometimes the numbers themselves do not give the reasons why a university is successful or not in their investment decisions. The identification of the reasons why these decisions are good or bad will determine if we should take a closer look of one of the variables in the NPV model (OCF) which are the operating cash flows that contains a lot of useful info in which problems can be identified if there is a capital loss year or CLY (probably in small school). This research will be able to advise any new athletic proposal to open a new athletic program.

This thesis will also estimate a base for the numbers that are not found or hard to find. (Like the Virginia analysis later in the study). This advantage will benefit the universities that are not yet involved in any specific program-opener decision by letting them know the basic capital required to make it work. On the other hand, actual universities can see the test and see how well they have been doing during the time they have been involved in that decision.

The knowledge of how capital budgeting works will make this model conditioned for the athletic departments in any university and the understanding of the components might help them to avoid catastrophic mistakes or make them successful for any particular investment.

3) Introduction to the issue

a) Problem statement

How the capital allocation for an athletic investment decision can successfully produce a capital gain yield for the institution.

b) Research objective

The main goal for this study is to determine if there is a capital gain yield on the decisions universities make by investing in athletic programs. To have better accuracy in the decision making process that athletic departments make when running any athletic program, the best thing to do is pay close attention in the estimates and numbers that are coming from this research while analyzing the project and all the variables that the **NET PRESENT VALUE** model has. The identification of the operating cash flows components in the mathematical equation is the most difficult part. The reason is that components of cash inflows such as donations, tickets, sponsorship contribution, and conference money distribution and so on need precise and consistent estimates to make the model reliable. This same idea is applied to the cash outflows. Having a clear idea of how the cash flows are recorded in the institution might produce a strong sense to determine if the decision making was correct or not. This study will be beneficial for any athletic department in any school in the country. The use of **CAPITAL BUDGETING** in the evaluation of current and future projects having many sources of cash flows identified will produce a deeper understanding if the investment was done correctly. It will also be beneficial to find the optimal way to achieve the capital needed without putting at risk the entire department of athletics (cutting programs, etc.).

b.a) Explanation of the spreadsheet created to find estimates and all the variables in the NPV model.

The first part of this research was an evaluation of a well- recognized university that had good historical data for the creation of models. The formula which will be use for the purpose of this thesis is based on the NET PRESENT VALUE FORMULA. This formula has different variables that provide a numerical result that can be less than zero, zero or greater than 0. Depending on the final result after applying the model, any athletic department that is interested in either re-evaluating or considering starting a new sport in the university can see if all requirements to be profitable are present or not. This result depends on how precise the estimates are. For that reason, the analysis of an accredited and well known university was important. After extended research for reliable data, The University of Virginia was selected. The Net Present Value is composed of three variables that allows this model to evaluate projects and determine how profitable they are (especially in capital budgeting). The first variable is known as *the Initial Outlay* which basically is a variable that shows how much capital was initially used to cover the requirements that the project needs. In this research, the requirement is implied in the cost of the construction of facilities such as a football stadium. Operating cash flow for time t is also needed. This variable is extremely complex for a lot of reasons. The most important one is the number of sub-variables that are needed to find it. This sub-variables are better known in finance as revenues, expenses, depreciation, earnings before taxes, operating income (ATOINC) and finally the after tax cash flow. This complex variable number is also better known as the Operating cash flow (OCF).

The next component in the Net Present Value formula is the cost of capital written as K. K is written in the model as $(1+K)^t$ in which K will be represented by the bond yield for the state in which university is located. With all this being said, it is time to explain in detail the reason behind the complexity of the Operating cash flow variable. This component in the model is not reflected

in any detail way in the athletic financial statements. This means that universities have different ways to list revenues for their sports and sometimes it is not clear where all the amounts reported are coming from. This can include donations or other sources of capital which cannot be identified in the income statement. This also means that athletic financial statements are not made with the same denominations and categories. As mentioned before, this is a complex situation that this research was able to solve by the analysis of The University of Virginia athletic financial statements. This statements were the most complete ones we found and the interesting part is that it has listed all possible sources of capital that this institution had during a fiscal year. This information allowed us to create an excel spreadsheet to calculate general estimates for the performance of any football program in any institution. For that reason, the identification of the maximum amount of sources that contributed into the revenue for the football program was not enough. In fact, the expenses contribution was also crucial for this performance analysis. To see how all the variables were obtain, please refer to appendix B.

The original table without the revenue and expense adjustments which is explain in appendix B can be used for using the raw data coming from the database if the athletics committee will like to ignore the estimate results.

	Year	1	2	3	4	5
SALES	(REVENUE)	$ 1,000,000	$ 1,100,000	$ 1,200,000	$ 1,300,000	$ 1,400,000
COST	(EXPENSES)	$ (500,000)	$ (600,000)	$ (700,000)	$ (800,000)	$ (900,000)
DEPRECIATION		$ -	$ -	$ -	$ -	
EBT		$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
TAXES		$ -	$ -	$ -	$ -	$ -
ATOINC		$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
DEPRECIATION		$ -	$ -	$ -	$ -	$ -
ATCF	(OPC)	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000

The table values are just an example to see any potential number without the predicted corrections from this research.

4) Methodology

a) Hypothesis

1) Test if the NPV is a positive value.

Ho: NPV value is not a positive number.

Ha: NPV value has a positive number.

2) Test if the average gains (losses) for the different group classification after applying the NPV for the selected schools are equal.

Ho: all means are equal.

Ha: all means are not equal.

3) Test whether the NPV is related with the school size

Ho: There is no relationship between size of school and making money.

Ha: There is a relationship between size of school and making money.

b) Research Design

The main goal for this research was to identify all the possible pieces of information needed in the NPV model coming from the athletic financial statements of the institutions to tell us whether the investment decision was good or not. Since all the information was not available in the financial statements, the creation of a series of estimated inputs was done based on the most complete data source we could found. University of Virginia had the largest quantity of financial information required to produce accurate estimates for the research. After the estimates were found, the model was ready to be applied to 15 other universities.

The institutions were divided into three groups. The first one was top ranked football school in division 1, which represents big schools .The second group was middle school size (15000 to 29000 undergrad enrollment) and the last group takes small schools (less than 14999 enrolled) which are mainly Ivy Leagues (4). Each group has 5 universities which gives a grand total of 15 institutions to be analyzed for the NPV model. If the universities are losing money the result will be a negative value. If the university is breaking even, 0 will be the number we get and finally, if the university is making money with the football program, a positive number is expected to appear.

c) Data source

The data use for this study is primarily secondary data. The data will be taken from the database that was found during the research progress which is really close to the original public financial statements (Balance sheet, Income and cash flow statements) that are located in the annual reports universities have to do for auditory purposes. This number will need an adjustment in order to be more accurate. The database is http://ope.ed.gov/athletics/

d) Statistical test

Three different statistical test were used for this research. It is important to mention that for each of the statistical test an alpha level of 0.05 was used. The first test was the "One – sample T" which tested the 1st hypothesis in the methodology section. For this test, the hypothesis is to test if the NPV model has a positive, 0, or negative value. If the p- value is less than the alpha, the null hypothesis which states that the NPV's do not have a positive value will be rejected. If this is the case, the alternative hypothesis will be consider true. The second statistical test used in the research was a "One-Way ANOVA" which is used to compare averages of different groups (for this case sizes). If the p value is less than alpha, the null hypothesis which states that all the means are equal in terms of gains or losses for the different sizes groups will be rejected. If this is the

case, the alternative hypothesis will be consider true. The last statistical test used was a "Chi-Square Test for Association" which allowed us to compare the relationship between school size and money gains (losses) within the last 5 fiscal years. If p values is less than alpha, the null hypotheses which suggest that there is no relationship between size of school and the ability to produce money will be rejected. If this is the case, the alternative hypothesis will be consider true.

5) Results

The following table shows the results of the final Net Present Value.

Clemson	$ 115,849,715.05
Alabama	$ 354,359,345.06
Michigan St.	$ 190,611,351.86
University of oklahoma	$ 291,465,047.51
University of Iowa	$ 115,849,715.05
Auburn	$ 231,938,790.48
BYU- P	$ (685,701.44)
East Carolina University	$ (33,090,108.18)
Georgia State University	$ (43,082,994.03)
Florida State University	$ 132,782,118.88
Princeton	$ (46,995,640.25)
Yale	$ (46,424,720.21)
Stanford	$ 46,046,150.91
Columbia	$ (46,534,688.97)
Dartmouth	$ (46,776,635.63)
AVG 1	$ 260,014,793.00
AVG 2	$ 57,572,421.14
AVG 3	$ (28,137,106.83)

The first five listed institutions belong to the first group, in which each university had positive NPV. This is not surprising since all of the institutions in the first group have excellent football programs that have been extremely successful. In the next group which correspond to the mid-size schools, the only institutions with a positive NPV are Auburn University and Florida State University. These two universities are considered to be medium size schools because of their undergraduate enrolment. Since these two institutions are well- recognized in the USA for their

football programs, they were expected to have a positive NPV. The last five institutions are classified as small size schools. In this category the only university that was not losing money was Stanford University. The reason for this is similar to the one for Auburn University and Florida State University, with the difference that the undergraduate enrolment for Stanford in less by a considerable quantity.

The next table is the representation for the operating cash flows for each institution in the study. It shows the athletic operating income for the universities in the last 5 years.

School/Year	2011	2012	2013	2014	2015	Total
Clemson	$ 31,656,075	$ 36,786,037	$ 33,567,369	$ 29,320,844	$ 34,519,390	$ 165,849,715
Alabama	$ 78,162,221	$ 81,079,935	$ 87,093,203	$ 79,979,741	$ 78,044,244	$ 404,359,345
Michigan St	$ 49,258,701	$ 44,596,945	$ 45,023,149	$ 51,353,154	$ 50,379,404	$ 240,611,352
UON	$ 58,345,045	$ 69,787,721	$ 67,606,156	$ 73,616,607	$ 72,109,518	$ 341,465,048
Iowa	$ 48,671,461	$ 54,454,627	$ 48,484,138	$ 44,734,756	$ 43,741,817	$ 240,086,799
Princeton	$ 553,534	$ 584,761	$ 588,108	$ 650,291	$ 627,665	$ 3,004,360
Yale	$ 710,851	$ 684,061	$ 771,915	$ 709,597	$ 698,854	$ 3,575,280
Stanford	$ 12,234,568	$ 13,140,752	$ 22,704,732	$ 24,141,270	$ 23,824,828	$ 96,046,151
Columbia	$ 640,869	$ 673,010	$ 725,549	$ 720,956	$ 704,927	$ 3,465,311
Darthmouth	$ 468,680	$ 715,358	$ 458,840	$ 799,127	$ 781,360	$ 3,223,364
Auburn	$ 61,571,730	$ 54,737,136	$ 11,208,357	$ 61,912,958	$ 60,414,674	$ 249,844,855
BYU-P	$ 9,413,950	$ 9,307,151	$ 11,274,421	$ 7,865,084	$ 11,453,692	$ 49,314,299
ECU	$ 5,249,227	$ 2,389,117	$ 2,257,796	$ 3,524,583	$ 3,489,168	$ 16,909,892
FSU	$ 19,361,937	$ 27,743,048	$ 35,045,948	$ 50,587,954	$ 50,043,233	$ 182,782,119
GSU	$ 1,226,143	$ 1,417,239	$ 1,376,738	$ 1,464,101	$ 1,432,785	$ 6,917,006

Each university had a positive value for income from 2011 to 2015. This means that if the universities had a negative NPV, it is because the income estimated in the table was not enough to cover the initial outlay in a 5 year period. The institution with the most income was the University of Alabama with a total amount of $404,359,345 and the institution with the least amount of income was Princeton University with a total amount of $3,004,360.

To evaluate a project for 5 years is a good base to see if the football program at a particular university is doing well but it is not a complete picture to conclude if the initial outlay was recovered. For that reason, a 20 year forecast regression was done for the operating cash inflows

in each university. The following table shows the present value of each institution without taking out the initial outlay.

Clemson University	2015	1	$ 34,519,389.88
	2014	2	$ 29,320,843.63
	2013	3	$ 33,567,368.85
	2012	4	$ 36,786,037.40
	2011	5	$ 31,656,075.29
	2010	6	$ 33,691,512.39
	2009	7	$ 33,865,368.85
	2008	8	$ 34,039,225.31
	2007	9	$ 34,213,081.76
	2006	10	$ 34,386,938.22
	2005	11	$ 34,560,794.68
	2004	12	$ 34,734,651.14
	2003	13	$ 34,908,507.60
	2002	14	$ 35,082,364.06
	2001	15	$ 35,256,220.52
	2000	16	$ 35,430,076.98
	1999	17	$ 35,603,933.44
	1998	18	$ 35,777,789.90
	1997	19	$ 35,951,646.35
	1996	20	$ 36,125,502.81

University Of Alabama	2015	1	$ 78,044,244.18
	2014	2	$ 79,979,741.44
	2013	3	$ 87,093,203.23
	2012	4	$ 81,079,935.03
	2011	5	$ 78,162,221.19
	2010	6	$ 81,272,713.30
	2009	7	$ 81,406,328.06
	2008	8	$ 81,539,942.82
	2007	9	$ 81,673,557.58
	2006	10	$ 81,807,172.34
	2005	11	$ 81,940,787.11
	2004	12	$ 82,074,401.87
	2003	13	$ 82,208,016.63
	2002	14	$ 82,341,631.39
	2001	15	$ 82,475,246.15
	2000	16	$ 82,608,860.91
	1999	17	$ 82,742,475.68
	1998	18	$ 82,876,090.44
	1997	19	$ 83,009,705.20
	1996	20	$ 83,143,319.96

Michigan State University	2015	1	$ 50,379,403.89
	2014	2	$ 51,353,153.80
	2013	3	$ 45,023,148.82
	2012	4	$ 44,596,944.54
	2011	5	$ 49,258,700.80
	2010	6	$ 45,422,985.74
	2009	7	$ 44,523,224.20
	2008	8	$ 43,623,462.65
	2007	9	$ 42,723,701.11
	2006	10	$ 41,823,939.57
	2005	11	$ 40,924,178.03
	2004	12	$ 40,024,416.48
	2003	13	$ 39,124,654.94
	2002	14	$ 38,224,893.40
	2001	15	$ 37,325,131.85
	2000	16	$ 36,425,370.31
	1999	17	$ 35,525,608.77
	1998	18	$ 34,625,847.22
	1997	19	$ 33,726,085.68
	1996	20	$ 32,826,324.14

University of Oklahoma	2015	1	$ 72,109,517.87
	2014	2	$ 73,616,606.79
	2013	3	$ 67,606,156.15
	2012	4	$ 69,787,721.35
	2011	5	$ 58,345,045.35
	2010	6	$ 58,885,660.36
	2009	7	$ 55,749,877.31
	2008	8	$ 52,614,094.26
	2007	9	$ 49,478,311.21
	2006	10	$ 46,342,528.17
	2005	11	$ 43,206,745.12
	2004	12	$ 40,070,962.07
	2003	13	$ 36,935,179.02
	2002	14	$ 33,799,395.97
	2001	15	$ 30,663,612.92
	2000	16	$ 27,527,829.88
	1999	17	$ 24,392,046.83
	1998	18	$ 21,256,263.78
	1997	19	$ 18,120,480.73
	1996	20	$ 14,984,697.68

Iowa	2015	1	$ 43,741,816.61
	2014	2	$ 44,734,755.85
	2013	3	$ 48,484,138.31
	2012	4	$ 54,454,626.82
	2011	5	$ 48,671,461.31
	2010	6	$ 53,891,107.89
	2009	7	$ 55,849,023.93
	2008	8	$ 57,806,939.97
	2007	9	$ 59,764,856.00
	2006	10	$ 61,722,772.04
	2005	11	$ 63,680,688.08
	2004	12	$ 65,638,604.12
	2003	13	$ 67,596,520.15
	2002	14	$ 69,554,436.19
	2001	15	$ 71,512,352.23
	2000	16	$ 73,470,268.27
	1999	17	$ 75,428,184.30
	1998	18	$ 77,386,100.34
	1997	19	$ 79,344,016.38
	1996	20	$ 81,301,932.42

Princeton	2015	1	$ 627,665
	2014	2	$ 650,291
	2013	3	$ 588,108
	2012	4	$ 584,761
	2011	5	$ 553,534
	2010	6	$ 536,735
	2009	7	$ 515,356
	2008	8	$ 493,977
	2007	9	$ 472,598
	2006	10	$ 451,219
	2005	11	$ 429,840
	2004	12	$ 408,461
	2003	13	$ 387,082
	2002	14	$ 365,703
	2001	15	$ 344,324
	2000	16	$ 322,945
	1999	17	$ 301,565
	1998	18	$ 280,186
	1997	19	$ 258,807
	1996	20	$ 237,428

Yale University	2015	1	$ 698,854.36
	2014	2	$ 709,597.50
	2013	3	$ 771,915.43
	2012	4	$ 684,061.17
	2011	5	$ 710,851.33
	2010	6	$ 714,593.24
	2009	7	$ 714,439.00
	2008	8	$ 714,284.77
	2007	9	$ 714,130.53
	2006	10	$ 713,976.29
	2005	11	$ 713,822.05
	2004	12	$ 713,667.81
	2003	13	$ 713,513.57
	2002	14	$ 713,359.34
	2001	15	$ 713,205.10
	2000	16	$ 713,050.86
	1999	17	$ 712,896.62
	1998	18	$ 712,742.38
	1997	19	$ 712,588.15
	1996	20	$ 712,433.91

Stanford University	2015	1	$ 23,824,828.48
	2014	2	$ 24,141,269.85
	2013	3	$ 22,704,732.34
	2012	4	$ 13,140,752.21
	2011	5	$ 12,234,568.05
	2010	6	$ 8,954,918.63
	2009	7	$ 5,536,814.78
	2008	8	$ 2,118,710.93
	2007	9	$ (1,299,392.91)
	2006	10	$ (4,717,496.76)
	2005	11	$ (8,135,600.61)
	2004	12	$ (11,553,704.46)
	2003	13	$ (14,971,808.31)
	2002	14	$ (18,389,912.16)
	2001	15	$ (21,808,016.01)
	2000	16	$ (25,226,119.86)
	1999	17	$ (28,644,223.71)
	1998	18	$ (32,062,327.56)
	1997	19	$ (35,480,431.41)
	1996	20	$ (38,898,535.26)

Columbia University	2015	1	$ 704,927.38
	2014	2	$ 720,956.02
	2013	3	$ 725,548.54
	2012	4	$ 673,009.81
	2011	5	$ 640,869.28
	2010	6	$ 640,243.48
	2009	7	$ 622,637.24
	2008	8	$ 605,031.00
	2007	9	$ 587,424.76
	2006	10	$ 569,818.52
	2005	11	$ 552,212.27
	2004	12	$ 534,606.03
	2003	13	$ 516,999.79
	2002	14	$ 499,393.55
	2001	15	$ 481,787.31
	2000	16	$ 464,181.07
	1999	17	$ 446,574.83
	1998	18	$ 428,968.59
	1997	19	$ 411,362.34
	1996	20	$ 393,756.10

Dartmouth College	2015	1	$ 781,360.31
	2014	2	$ 799,126.88
	2013	3	$ 458,839.99
	2012	4	$ 715,357.60
	2011	5	$ 468,679.59
	2010	6	$ 431,933.66
	2009	7	$ 361,020.59
	2008	8	$ 290,107.51
	2007	9	$ 219,194.44
	2006	10	$ 148,281.37
	2005	11	$ 77,368.30
	2004	12	$ 6,455.22
	2003	13	$ (64,457.85)
	2002	14	$ (135,370.92)
	2001	15	$ (206,283.99)
	2000	16	$ (277,197.06)
	1999	17	$ (348,110.14)
	1998	18	$ (419,023.21)
	1997	19	$ (489,936.28)
	1996	20	$ (560,849.35)

Auburn University	2015	1	$ 60,414,674.12
	2014	2	$ 61,912,958.04
	2013	3	$ 43,302,292.72
	2012	4	$ 54,737,135.60
	2011	5	$ 61,571,730.00
	2010	6	$ 54,929,244.89
	2009	7	$ 54,443,073.83
	2008	8	$ 53,956,902.76
	2007	9	$ 53,470,731.69
	2006	10	$ 52,984,560.62
	2005	11	$ 52,498,389.56
	2004	12	$ 52,012,218.49
	2003	13	$ 51,526,047.42
	2002	14	$ 51,039,876.36
	2001	15	$ 50,553,705.29
	2000	16	$ 50,067,534.22
	1999	17	$ 49,581,363.15
	1998	18	$ 49,095,192.09
	1997	19	$ 48,609,021.02
	1996	20	$ 48,122,849.95

BYU-P	2015	1	$ 11,453,691.92
	2014	2	$ 7,865,084.03
	2013	3	$ 11,274,421.43
	2012	4	$ 9,307,150.81
	2011	5	$ 9,413,950.37
	2010	6	$ 9,071,634.82
	2009	7	$ 8,807,893.19
	2008	8	$ 8,544,151.55
	2007	9	$ 8,280,409.92
	2006	10	$ 8,016,668.29
	2005	11	$ 7,752,926.66
	2004	12	$ 7,489,185.03
	2003	13	$ 7,225,443.40
	2002	14	$ 6,961,701.77
	2001	15	$ 6,697,960.13
	2000	16	$ 6,434,218.50
	1999	17	$ 6,170,476.87
	1998	18	$ 5,906,735.24
	1997	19	$ 5,642,993.61
	1996	20	$ 5,379,251.98

ECU	2015	1	$ 3,489,168.27
	2014	2	$ 3,524,583.33
	2013	3	$ 2,257,795.88
	2012	4	$ 2,389,117.38
	2011	5	$ 5,249,226.96
	2010	6	$ 4,097,373.79
	2009	7	$ 4,335,838.94
	2008	8	$ 4,574,304.08
	2007	9	$ 4,812,769.22
	2006	10	$ 5,051,234.36
	2005	11	$ 5,289,699.51
	2004	12	$ 5,528,164.65
	2003	13	$ 5,766,629.79
	2002	14	$ 6,005,094.94
	2001	15	$ 6,243,560.08
	2000	16	$ 6,482,025.22
	1999	17	$ 6,720,490.36
	1998	18	$ 6,958,955.51
	1997	19	$ 7,197,420.65
	1996	20	$ 7,435,885.79

FSU	2015	1	$ 50,043,232.98
	2014	2	$ 50,587,953.57
	2013	3	$ 35,045,947.97
	2012	4	$ 27,743,047.82
	2011	5	$ 19,361,936.54
	2010	6	$ 11,294,174.18
	2009	7	$ 2,873,424.32
	2008	8	$ (5,547,325.54)
	2007	9	$ (13,968,075.41)
	2006	10	$ (22,388,825.27)
	2005	11	$ (30,809,575.14)
	2004	12	$ (39,230,325.00)
	2003	13	$ (47,651,074.86)
	2002	14	$ (56,071,824.73)
	2001	15	$ (64,492,574.59)
	2000	16	$ (72,913,324.46)
	1999	17	$ (81,334,074.32)
	1998	18	$ (89,754,824.18)
	1997	19	$ (98,175,574.05)
	1996	20	$ (106,596,323.91)

Georgia State University	2015	1	$ 1,432,784.94
	2014	2	$ 1,464,100.84
	2013	3	$ 1,376,738.25
	2012	4	$ 1,417,238.77
	2011	5	$ 1,226,143.17
	2010	6	$ 1,245,357.51
	2009	7	$ 1,199,342.95
	2008	8	$ 1,153,328.39
	2007	9	$ 1,107,313.82
	2006	10	$ 1,061,299.26
	2005	11	$ 1,015,284.70
	2004	12	$ 969,270.14
	2003	13	$ 923,255.58
	2002	14	$ 877,241.01
	2001	15	$ 831,226.45
	2000	16	$ 785,211.89
	1999	17	$ 739,197.33
	1998	18	$ 693,182.77
	1997	19	$ 647,168.21
	1996	20	$ 601,153.64

This tables indicates the present values for each university. The sum of all the present values estimates is shown in the following table:

	Present Value
Clemson	$ 689,477,329.07
Alabama	$ 1,637,479,594.49
Michigan St	$ 827,481,175.93
UON	$ 823,383,214.95
Iowa	$ 1,254,034,601.20
Princeton	$ 8,810,583.89
Yale	$ 14,277,983.41
Stanford	$ (128,530,973.79)
Columbia	$ 11,220,307.91
Darthmouth	$ 2,256,496.65
Auburn	$ 1,054,829,501.81
BYU-P	$ 157,695,949.52
ECU	$ 103,409,338.70
FSU	$ (531,984,004.07)
GSU	$ 20,765,839.62

The results shows that all of the universities except for two (FSU and Stanford) had a positive present value amounts, meaning that the institutions have recovered the initial outlay by now. Florida State and Stanford had a negative present value since the slope in the equation was negative. For this reason, we perform a similar forecast regression which allow us to more realistically project the real cash flows for these two institutions during the next 20 years. Using a separate for these two institutions, the following table shows the results.

FSU	2011	1	$ 19,361,936.54	Discuonted back
	2012	2	$ 27,743,047.82	
	2013	3	$ 35,045,947.97	
	2014	4	$ 50,587,953.57	
	2015	5	$ 50,043,232.98	
	2016	6	$ 61,818,673.37	$ 61,152,720.24
	2017	7	$ 70,239,423.23	$ 68,734,240.14
	2018	8	$ 78,660,173.09	$ 76,145,316.56
	2019	9	$ 87,080,922.96	$ 83,388,741.94
	2020	10	$ 95,501,672.82	$ 90,467,268.30
	2021	11	$ 103,922,422.69	$ 97,383,607.86
	2022	12	$ 112,343,172.55	$ 104,140,433.53
	2023	13	$ 120,763,922.41	$ 110,740,379.44
	2024	14	$ 129,184,672.28	$ 117,186,041.49
	2025	15	$ 137,605,422.14	$ 123,479,977.85
	2026	16	$ 146,026,172.01	$ 129,624,709.50
	2027	17	$ 154,446,921.87	$ 135,622,720.68
	2028	18	$ 162,867,671.73	$ 141,476,459.44
	2029	19	$ 171,288,421.60	$ 147,188,338.10
	2030	20	$ 179,709,171.46	$ 152,760,733.78

Stanford Universit	2011	1	$ 12,234,568.05	Discounted Back
	2012	2	$ 13,140,752.21	
	2013	3	$ 22,704,732.34	
	2014	4	$ 24,141,269.85	
	2015	5	$ 23,824,828.48	
	2016	6	$ 29,463,541.73	$ 29,077,393.94
	2017	7	$ 32,881,645.58	$ 32,025,402.93
	2018	8	$ 36,299,749.43	$ 34,891,144.48
	2019	9	$ 39,717,853.28	$ 37,676,268.60
	2020	10	$ 43,135,957.13	$ 40,382,396.21
	2021	11	$ 46,554,060.98	$ 43,011,119.54
	2022	12	$ 49,972,164.83	$ 45,564,002.71
	2023	13	$ 53,390,268.68	$ 48,042,582.09
	2024	14	$ 56,808,372.53	$ 50,448,366.84
	2025	15	$ 60,226,476.38	$ 52,782,839.30
	2026	16	$ 63,644,580.23	$ 55,047,455.48
	2027	17	$ 67,062,684.08	$ 57,243,645.45
	2028	18	$ 70,480,787.93	$ 59,372,813.82
	2029	19	$ 73,898,891.78	$ 61,436,340.11
	2030	20	$ 77,316,995.63	$ 63,435,579.22

The left hand table shows the comparison between the present values for the last 20 years and the actual Net Present Value for the universities without the FSU and Stanford modification. The right hand table includes the variation for the 2 previous mentioned institutions which made their negative present values to become positive as we expected.

	Present Value	Net Present Value
Clemson	$ 689,477,329.07	$ 639,477,329.07
Alabama	$ 1,637,479,594.49	$1,587,479,594.49
Michigan St	$ 827,481,175.93	$ 777,481,175.93
UON	$ 823,383,214.95	$ 773,383,214.95
Iowa	$ 1,254,034,601.20	$1,204,034,601.20
Princeton	$ 8,810,583.89	$ (41,189,416.11)
Yale	$ 14,277,983.41	$ (35,722,016.59)
Stanford	$ (128,530,973.79)	$ (178,530,973.79)
Columbia	$ 11,220,307.91	$ (38,779,692.09)
Darthmouth	$ 2,256,496.65	$ (47,743,503.35)
Auburn	$ 1,054,829,501.81	$1,004,829,501.81
BYU-P	$ 157,695,949.52	$ 107,695,949.52
ECU	$ 103,409,338.70	$ 53,409,338.70
FSU	$ (531,984,004.07)	$ (581,984,004.07)
GSU	$ 20,765,839.62	$ (29,234,160.38)

	Present Value	Net Present Value
Clemson	$ 689,477,329.07	$ 639,477,329.07
Alabama	$ 1,637,479,594.49	$ 1,587,479,594.49
Michigan St	$ 827,481,175.93	$ 777,481,175.93
UON	$ 823,383,214.95	$ 773,383,214.95
Iowa	$ 1,254,034,601.20	$ 1,204,034,601.20
Princeton	$ 8,810,583.89	$ (41,189,416.11)
Yale	$ 14,277,983.41	$ (35,722,016.59)
Stanford	$ 710,437,350.73	$ 660,437,350.73
Columbia	$ 11,220,307.91	$ (38,779,692.09)
Darthmouth	$ 2,256,496.65	$ (47,743,503.35)
Auburn	$ 1,054,829,501.81	$ 1,004,829,501.81
BYU-P	$ 157,695,949.52	$ 107,695,949.52
ECU	$ 103,409,338.70	$ 53,409,338.70
FSU	$ 1,639,491,688.85	$ 1,589,491,688.85
GSU	$ 20,765,839.62	$ (29,234,160.38)

With this change, the Net Present Value for Stanford and FSU had a transformation from a considerable negative amount to a more accurate and logical positive value. This results are justified since FSU and Stanford are schools that have an historical tradition in football and also ranked in the top 10 NCAA schools in the country.

The main reason why the initial outlay was a flat $50 million is because all the universities that were evaluated already had a stadium facility. A lot of these institutions had built the facilities a long time ago (1925 as an example) and the cost of these stadiums could not be estimated to any degree of accuracy. During the lifetime of the facilities, remodeling was performed, which most of the time had a greater cost than the stadium itself. The older stadiums cost around $3 million in actual money, which is unrealistic for the research purposes in this study. The remodeling cost fluctuated more since not all the universities performed this re-construction process at the same

time. The remodeling cost was around 35M for a good portion of the universities and depending of the success of the football program for big universities this cost was higher. For that reason a flat $50 Million was chosen for initial outlay. It is important to clarify that time value money is the most important factor that influence the decision of having the same initial outlay for everybody. The cost of small stadiums compared with medium and big size schools is not the same, but since the universities had different time frame of construction and remodeling, $50 million is a solid base number to perform the net present value evaluation.

The estimates created with the UVA analysis are not extremely close to the actual data founded in the database, but they are good approximations that allowed us to create an estimate correction of 22% extra for the revenues and also a negative 21% for the expenses. For more information about how these estimates were found please refer to appendix A.

	UVA Revenues	
	Actual Data	Research Data
2011	$ 24,074,798.00	$ 31,352,009.00
2012	$ 21,521,178.00	$ 32,178,493.00
2013	$ 28,225,141.00	$ 32,431,234.00
2014	$ 24,551,003.00	$ 44,497,709.00

	UVA Expenses	
	Reseach data	Actual Data
2011	$ 17,319,042.00	$ 22,899,872.00
2012	$ 21,455,217.00	$ 22,023,654.00
2013	$ 20,193,977.00	$ 22,162,106.00
2014	$ 18,083,383.00	$ 18,744,356.00

Last but not least, the statistical analysis was performed in order to reject or accept the different null hypothesis described in the methodology part. For all three cases, we rejected the null hypothesis, meaning for the first one that NPV has a positive number overall, which means that most of the universities have positive NPV for the last 5 years. For the second one, the average gains for the different group classification after applying the NPV for the school are not equal meaning that as a whole group, universities have not had similar gains. This means that there is a significant difference for the average gains in the 3 different groups. For the last hypothesis, we

also concluded that the NPV is related with the school size meaning that depending of the school size, the institution has more or less probability to produce income at any given time.

Another important result is that big schools such as Clemson, Alabama, Michigan St, UON and Iowa are producing great amounts of operating income which allow them to recover the initial outlay in a short period of time and without financial difficulties. The mid- size schools such as Auburn, BYU, FSU, ECU and GSU are more likely to have positive NPV values over time. The only university that has not recovered the initial outlay is Georgia State University. The reason for that could be explained by the fact that the GSU program has not been successful compared with the other four universities in this division. This indicates that GSU will need close to 20 years or less depending on the income increase per year to recover the initial investment. The small-size schools such as the Ivy Leagues are still struggling to recover their initial investment. In fact, these institutions will need at least a couple of decades to begin to be somewhere close to break even with the assumption that their annual income will increase considerably. Stanford, the outlier for this group is able to make money because of the successful program they have develop over the years. This means that small schools have small probability to become profitable in athletics unless the program becomes extremely successful and well known over the years. It is important to mention that GSU is in a better position than small schools with similar results in the NPV since their annual income are bigger by almost a factor of two. This means that even if mid-size schools with not success at all can recover the athletic investment faster that well recognized academic schools with negative NPV's

Using Minitab, all three null hypothesis were rejected. For the first one, the NPV values for the universities with a football program is positive. For this hypothesis we used a One Sample

T: Overall test with an alpha level of 0.05 and a confidence interval of 95%. The P value for this test is 0.019 which is less than alpha and gives evidence that the alternative hypothesis is true.

One-Sample T: Overall

```
Test of μ = 0 vs > 0

Variable   N      Mean      StDev   SE Mean  95% Lower Bound     T      P
Overall   15  81020783  136394333  35216865         18992961  2.30  0.019
```

For the second hypothesis the result suggest that the three groups in which the universities are classified, do not have the same average gains (losses).For this hypothesis, we used a One way ANOVA for the small, medium and big groups in which the universities were classified. In this case the P value is 0.006 which is less that alpha level of 0.05. This result gives evidence that the alternative hypothesis is true for second time.

One-way ANOVA: Small, Big, Medium

```
Method

Null hypothesis         All means are equal
Alternative hypothesis  At least one mean is different
Significance level      α = 0.05

Equal variances were assumed for the analysis.


Factor Information

Factor  Levels  Values
Factor       3  Small, Big, Medium


Analysis of Variance

Source  DF       Adj SS       Adj MS  F-Value  P-Value
Factor   2  1.50248E+17  7.51242E+16     8.18    0.006
Error   12  1.10199E+17  9.18328E+15
Total   14  2.60448E+17


Model Summary

       S    R-sq  R-sq(adj)  R-sq(pred)
95829429  57.69%     50.64%      33.89%
```

```
Means

Factor  N       Mean      StDev           95% CI
Small   5  -28137107   41470290  (-121512797,  65238583)
Big     5  213627035  106671071  ( 120251345, 307002725)
Medium  5   57572421  120213711  ( -35803269, 150948111)
```

For the last hypothesis, the results shows that there is a relationship between the sizes of the school with the amount of NPV the institutions have. The following Chi-Square test for association between school size and money earned confirms it since the p value of 0.011 is less than the alpha level of 0.05.

Chi-Square Test for Association: School, Money

```
Rows: School   Columns: Money

          earn  lose  All

big          5     0    5
medium       2     3    5
small        1     4    5
All          8     7   15

Cell Contents:      Count


Pearson Chi-Square = 6.964, DF = 2, P-Value = 0.031
Likelihood Ratio Chi-Square = 8.994, DF = 2, P-Value = 0.011

* NOTE * 6 cells with expected counts less than 5
```

6) Limitations

The accuracy of this model can be subject to different judgments do to private objectives the institution might have. It is known that profitability does not have the same definition for a public university compared with a private one. This could affect the WACC of the NPV model because of the way universities are willing to generate debt with the objective of satisfying the investment project in any institution. One of the greatest limitations that the research has is that the database only gives us information for the last 5 fiscal years, meaning that further analysis will

be not possible by secondary data analysis. This analysis will require a forecast regression to see if the institutions meet the goals in a time period of x years.

7) Conclusions

The NPV estimates allowed us to have a better understanding of how universities record all the possible cash inflows and cash outflows for any given time. These estimates are extremely important for an accurate NPV results which are able to represent a better picture of how the universities are doing in investment decisions. It was also important to identify that having a football program generally means that universities will have capital gains over time. The size of the school is related with the amount of money the program is able to produce over time. Another important conclusion is that small schools that are not nationally successful in division I are more likely to be pushed to the negative side of the NPV model. This might not mean that this institutions are losing money but it will be a powerful indicator that the amount of time to recover the initial outlay will be greater than the big and medium size schools.

8) Bibliography

Chen, K. K., & Zhang, J. J. (2012). To Name it or not Name it: Consumer Perspectives on Facility Naming Rights Sponsorship in Collegiate Athletics. *Journal Of Issues In Intercollegiate Athletics, 5*119-148.

Goff, B. (2000). Effects of University Athletics on the University: A Review and Extension of Empirical Assessment. *Journal Of Sport Management, 14*(2), 85.

Gronberg, T. J., Jansen, D. W., & Taylor, L. L. (2011). The impact of facilities on the cost of education. *National Tax Journal, 64*(1), 193-218.

Leeds, M. A., Miller, C., & Stull, J. (2007). Interscholastic Athletics and Investment in Human Capital. *Social Science Quarterly*, (3). 729.

Fitzpatrick, D. (2014, November 4). In Investing, Yale Has Harvard's Number. *Wall Street Journal - Eastern Edition*. p. R5.

Maxcy, J. G., & Larson, D. J. (2015). Reversal of Fortune or Glaring Misallocation: Is a New Football Stadium Worth the Cost to a University?. *International Journal Of Sport Finance, 10*(1), 62-87.

(1995, December 31). Northwestern finds gold in California. *Washington Post News Feed*. p. D11.

P. Anderson (personal communication, March 05, 2015)

Shulman, J. L., & Bowen, W. G. (2001). *The game of life : college sports and educational values*. Princeton, N.J. : Princeton University Press, c2001. P.227-257.

Sparvero, E. S., & Warner, S. (2013). The Price of Winning and the Impact on the NCAA Community. *Journal Of Intercollegiate Sport, 6*(1), 120-142.

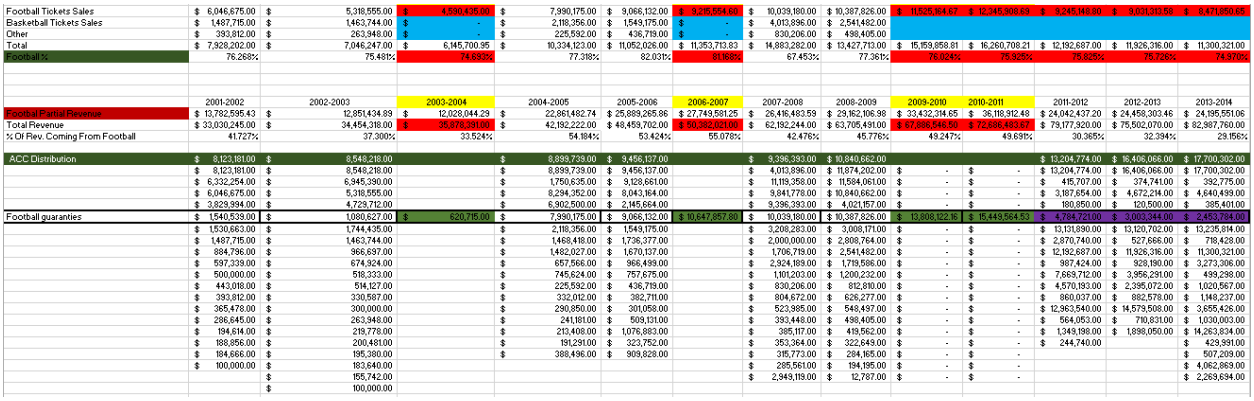
Toma, J. D., & Kramer, D. A. (2009). *The uses of intercollegiate athletics : opportunities and challenges for the university*. San Francisco : Jossey-Bass, c2009.

United States General Accounting Office. *Intercollegiate Athletics Four Year Colleges Experience Adding and Subtracting* [PDF document]. Retrieved from Lecture Notes Online Web site: http://www.gpo.gov/fdsys/pkg/GAOREPORTS-GAO-01-297/pdf/GAOREPORTS-GAO-01-297.pdf, 2001.

9) Appendix A

UVA athletic financial statements (link) http://www.virginiasports.com/ot/annual-report.html

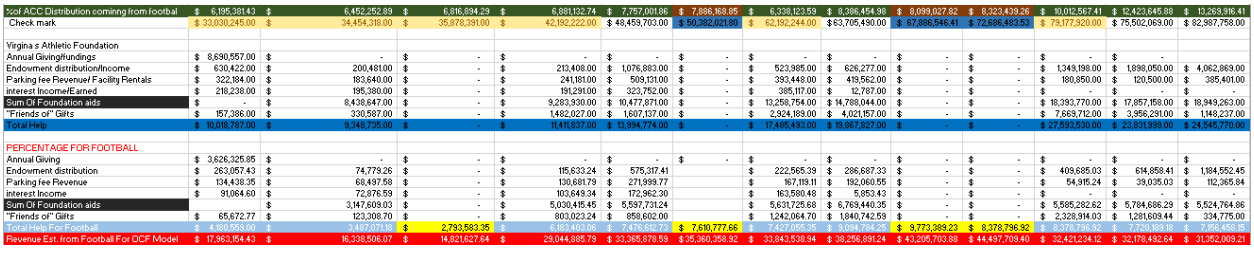
Revenues



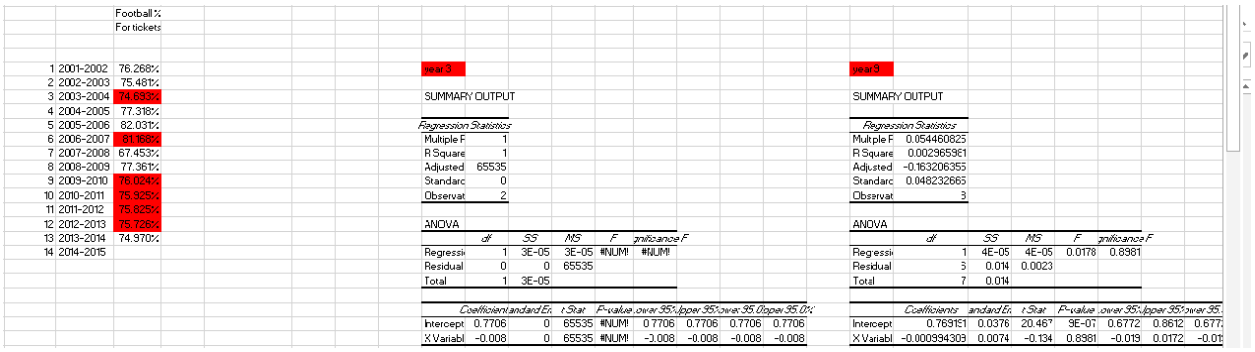
Football Tickets Sales	$ 6,046,675.00	$ 5,318,555.00	$ 4,590,435.00	$ 7,990,175.00	$ 9,066,132.00	$ 9,215,554.60	$ 10,039,180.00	$ 10,387,826.00	$ 11,525,164.67	$ 12,345,909.63	$ 9,245,143.80	$ 9,031,313.53	$ 8,471,850.65
Basketball Tickets Sales	$ 1,487,715.00	$ 1,463,744.00	$ -	$ 2,118,356.00	$ 1,549,175.00	$ -	$ 4,013,896.00	$ 2,541,482.00					
Other	$ 393,812.00	$ 263,948.00	$ -	$ 225,592.00	$ 436,719.00	$ -	$ 830,206.00	$ 498,405.00					
Total	$ 7,928,202.00	$ 7,046,247.00	$ 6,145,700.95	$ 10,334,123.00	$ 11,052,026.00	$ 11,353,713.83	$ 14,883,282.00	$ 13,427,713.00	$ 15,159,858.81	$ 16,260,708.21	$ 12,192,687.00	$ 11,926,316.00	$ 11,300,321.00
Football %	76.268%	75.481%	74.633%	77.318%	82.031%	81.588%	67.453%	77.361%	76.024%	75.925%	75.825%	75.726%	74.976%

	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Football Partial Revenue	$ 13,782,595.43	$ 12,851,434.89	$ 12,028,044.29	$ 22,861,482.74	$ 25,889,265.86	$ 27,749,581.25	$ 26,416,483.59	$ 29,162,106.98	$ 33,432,314.65	$ 36,118,912.48	$ 24,042,437.20	$ 24,458,303.46	$ 24,195,551.06
Total Revenue	$ 33,030,245.00	$ 34,454,318.00	$ 35,878,391.00	$ 42,192,222.00	$ 48,459,702.00	$ 50,382,021.00	$ 62,192,244.00	$ 63,705,491.00	$ 67,886,546.50	$ 72,686,483.67	$ 79,177,920.00	$ 75,502,070.00	$ 82,987,760.00
% Of Rev. Coming From Football	41.727%	37.300%	33.524%	54.184%	53.424%	55.078%	42.476%	45.776%	49.247%	49.691%	30.365%	32.394%	29.156%

ACC Distribution													
	$ 8,123,181.00	$ 8,548,218.00		$ 8,899,739.00	$ 9,456,137.00		$ 9,396,393.00	$ 10,840,662.00			$ 13,204,774.00	$ 16,406,066.00	$ 17,700,302.00
	$ 8,123,181.00	$ 8,548,218.00		$ 8,899,739.00	$ 9,456,137.00		$ 4,013,896.00	$ 11,674,202.00	$ -	$ -	$ 13,204,774.00	$ 16,406,066.00	$ 17,700,302.00
	$ 6,332,254.00	$ 6,945,390.00		$ 1,750,635.00	$ 9,128,661.00		$ 11,119,358.00	$ 11,584,061.00	$ -	$ -	$ 415,707.00	$ 374,741.00	$ 392,775.00
	$ 6,046,675.00	$ 5,318,555.00		$ 8,294,352.00	$ 8,043,164.00		$ 9,841,778.00	$ 10,840,662.00	$ -	$ -	$ 3,187,654.00	$ 4,672,214.00	$ 4,640,499.00
	$ 3,823,994.00	$ 4,729,712.00		$ 6,902,500.00	$ 2,145,664.00		$ 9,396,393.00	$ 4,021,157.00	$ -	$ -	$ 180,850.00	$ 120,500.00	$ 385,401.00
Football guaranties	$ 1,540,539.00	$ 1,080,627.00	$ 620,715.00	$ 7,990,175.00	$ 9,066,132.00	$ 10,647,857.80	$ 10,039,180.00	$ 10,387,826.00	$ 13,808,122.81	$ 15,449,564.53	$ 4,784,742.00	$ 3,008,344.00	$ 2,435,274.00
	$ 1,530,663.00	$ 1,744,435.00		$ 2,118,356.00	$ 1,549,175.00		$ 3,208,283.00	$ 3,088,171.00	$ -	$ -	$ 13,131,890.00	$ 13,120,702.00	$ 13,235,814.00
	$ 1,487,715.00	$ 1,463,744.00		$ 1,468,418.00	$ 1,736,377.00		$ 2,000,000.00	$ 2,888,764.00	$ -	$ -	$ 2,870,740.00	$ 527,666.00	$ 718,428.00
	$ 884,796.00	$ 966,697.00		$ 1,482,027.00	$ 1,670,137.00		$ 1,706,719.00	$ 2,541,482.00	$ -	$ -	$ 12,192,687.00	$ 11,926,316.00	$ 11,300,321.00
	$ 597,339.00	$ 674,924.00		$ 657,566.00	$ 966,499.00		$ 2,924,189.00	$ 1,719,586.00	$ -	$ -	$ 987,424.00	$ 928,190.00	$ 3,273,306.00
	$ 500,000.00	$ 518,333.00		$ 745,624.00	$ 757,675.00		$ 1,101,203.00	$ 1,200,232.00	$ -	$ -	$ 7,669,712.00	$ 3,956,291.00	$ 499,298.00
	$ 443,018.00	$ 514,127.00		$ 225,592.00	$ 436,719.00		$ 830,206.00	$ 812,810.00	$ -	$ -	$ 4,570,193.00	$ 2,395,072.00	$ 1,020,567.00
	$ 393,812.00	$ 330,587.00		$ 332,012.00	$ 382,711.00		$ 804,672.00	$ 626,277.00	$ -	$ -	$ 860,037.00	$ 882,578.00	$ 1,148,237.00
	$ 365,478.00	$ 300,000.00		$ 290,850.00	$ 301,058.00		$ 523,985.00	$ 549,497.00	$ -	$ -	$ 12,963,540.00	$ 14,579,508.00	$ 3,655,426.00
	$ 286,645.00	$ 263,948.00		$ 241,181.00	$ 509,131.00		$ 393,448.00	$ 498,405.00	$ -	$ -	$ 564,053.00	$ 710,831.00	$ 1,030,003.00
	$ 194,614.00	$ 219,778.00		$ 213,408.00	$ 1,076,883.00		$ 385,117.00	$ 419,562.00	$ -	$ -	$ 1,349,198.00	$ 1,898,050.00	$ 14,263,834.00
	$ 188,856.00	$ 200,481.00		$ 191,291.00	$ 323,752.00		$ 353,364.00	$ 322,649.00	$ -	$ -	$ 244,740.00		$ 429,991.00
	$ 184,666.00	$ 195,380.00		$ 388,496.00	$ 909,828.00		$ 315,773.00	$ 294,105.00	$ -	$ -			$ 597,209.00
	$ 100,000.00	$ 183,840.00					$ 285,561.00	$ 194,195.00	$ -	$ -			$ 4,062,869.00
		$ 155,742.00					$ 2,949,119.00	$ 12,787.00	$ -	$ -			$ 2,269,694.00
		$ 100,000.00											



%of ACC Distribution comming from footbal	$ 6,195,381.43	$ 6,452,252.89	$ 6,816,894.29	$ 6,881,132.74	$ 7,757,001.86	$ 7,886,169.85	$ 5,338,123.59	$ 8,386,454.98	$ 8,099,027.82	$ 8,323,439.26	$ 10,012,567.41	$ 12,423,645.88	$ 13,269,916.41
Check mark	$ 33,030,245.00	$ 34,454,318.00	$ 35,878,391.00	$ 42,192,222.00	$ 48,459,703.00	$ 50,382,021.00	$ 62,192,244.00	$63,705,490.00	$ 67,886,546.41	$ 72,686,483.53	$ 79,177,920.00	$ 75,502,069.00	$ 82,987,758.00
Virgina s Athletic Foundation													
Annual Giving/Fundings	$ 8,690,557.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Endowment distribution/Income	$ 630,422.00	$ 200,481.00	$ -	$ 213,408.00	$ 1,076,883.00	$ -	$ 523,985.00	$ 626,277.00	$ -	$ -	$ 1,349,198.00	$ 1,898,050.00	$ 4,062,869.00
Parking fee Revenue/ Facility Rentals	$ 322,184.00	$ 193,840.00	$ -	$ 241,181.00	$ 509,131.00	$ -	$ 393,448.00	$ 419,562.00	$ -	$ -	$ 180,850.00	$ 120,500.00	$ 385,401.00
interest Income/Earned	$ 218,238.00	$ 195,380.00	$ -	$ 191,291.00	$ 323,752.00	$ -	$ 385,117.00	$ 12,787.00	$ -	$ -	$ -	$ -	$ -
Sum Of Foundation aids	$ -	$ 8,438,647.00	$ -	$ 9,283,930.00	$ 10,477,871.00	$ -	$ 13,258,754.00	$ 14,788,044.00	$ -	$ -	$ 18,393,770.00	$ 17,857,158.00	$ 18,949,263.00
"Friends of" Gifts	$ 157,386.00	$ 330,587.00	$ -	$ 1,482,027.00	$ 1,607,137.00	$ -	$ 2,924,189.00	$ 4,021,157.00	$ -	$ -	$ 7,669,712.00	$ 3,956,291.00	$ 1,148,237.00
Total Help	$ 10,018,787.00	$ 9,348,735.00	$ -	$ 11,411,837.00	$ 13,994,774.00	$ -	$ 17,485,493.00	$ 19,667,827.00	$ -	$ -	$ 27,593,530.00	$ 23,831,999.00	$ 24,545,770.00
PERCENTAGE FOR FOOTBALL													
Annual Giving	$ 3,626,325.85	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Endowment distribution	$ 263,057.43	$ 74,779.26	$ -	$ 115,633.24	$ 575,317.41		$ 222,565.39	$ 286,687.33	$ -	$ -	$ 409,685.03	$ 614,858.41	$ 1,184,552.45
Parking fee Revenue	$ 134,438.35	$ 68,497.58	$ -	$ 130,681.79	$ 271,999.77		$ 167,119.11	$ 192,060.55	$ -	$ -	$ 54,915.24	$ 39,035.03	$ 112,365.84
interest Income	$ 91,064.60	$ 72,876.59	$ -	$ 103,649.34	$ 172,962.30		$ 163,580.48	$ 5,853.43	$ -	$ -	$ -	$ -	$ -
Sum Of Foundation aids		$ 3,147,609.03	$ -	$ 5,030,415.45	$ 5,597,731.24		$ 5,631,725.68	$ 6,769,440.35	$ -	$ -	$ 5,585,282.62	$ 5,784,686.29	$ 5,524,764.86
"Friends of" Gifts	$ 65,672.77	$ 123,308.70	$ -	$ 803,023.24	$ 858,602.00		$ 1,242,064.70	$ 1,940,742.59	$ -	$ -	$ 2,328,914.03	$ 1,281,609.44	$ 334,775.00
Total Help For Football	$ 4,180,559.00	$ 3,497,071.18	$ 2,793,583.35	$ 6,183,403.06	$ 7,476,612.72	$ 7,610,777.66	$ 7,427,055.35	$ 9,094,784.25	$ 9,773,389.23	$ 8,378,796.92	$ 8,273,796.92	$ 7,720,189.18	$ 7,356,458.15
Revenue Est. from Football For OCF Model	$ 17,963,154.43	$ 16,338,506.07	$ 14,921,627.64	$ 29,044,885.79	$ 33,365,878.59	$ 35,360,358.92	$ 33,843,538.94	$ 39,256,891.24	$ 43,205,703.88	$ 44,497,709.40	$ 32,421,234.12	$ 32,178,492.64	$ 31,352,009.21



		Football T
		For tickets
1	2001-2002	76.268%
2	2002-2003	75.481%
3	2003-2004	74.693%
4	2004-2005	77.318%
5	2005-2006	82.031%
6	2006-2007	81.168%
7	2007-2008	67.453%
8	2008-2009	77.361%
9	2009-2010	76.024%
10	2010-2011	75.325%
11	2011-2012	75.825%
12	2012-2013	75.726%
13	2013-2014	74.970%
14	2014-2015	

year 3

SUMMARY OUTPUT

Regression Statistics	
Multiple F	1
R Square	1
Adjusted	65535
Standarc	0
Observat	2

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	3E-05	3E-05	#NUM!	#NUM!
Residual	0	0	65535		
Total	1	3E-05			

	Coefficient	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	0.7706	0	65535	#NUM!	0.7706	0.7706	0.7706	0.7706
X Variabl	-0.008	0	65535	#NUM!	-0.008	-0.008	-0.008	-0.008

year 3

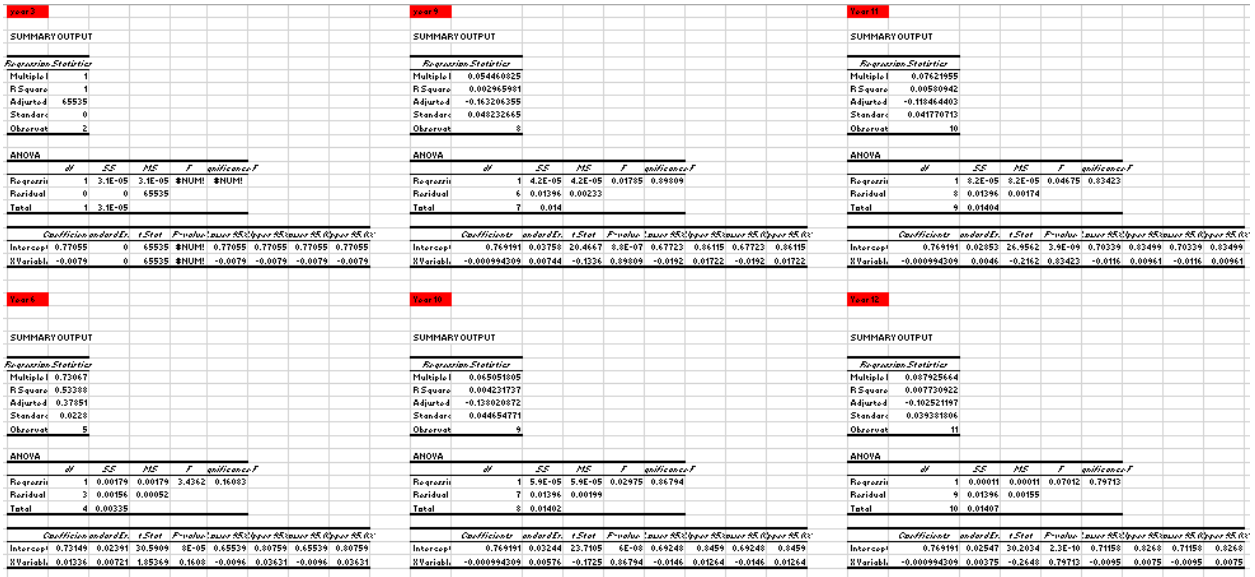
SUMMARY OUTPUT

Regression Statistics	
Multiple F	0.054460825
R Square	0.002965961
Adjusted	-0.163206355
Standarc	0.048232665
Observat	3

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	4E-05	4E-05	0.0178	0.8981
Residual	3	0.014	0.0023		
Total	7	0.014			

	Coefficients	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.
Intercept	0.769151	0.0376	20.467	9E-07	0.6772	0.8612	0.677
X Variabl	-0.000994309	0.0074	-0.134	0.8981	-0.019	0.0172	-0.01



year 2

SUMMARY OUTPUT

Regression Statistics	
Multiple I	1
R Square	1
Adjusted	65535
Standarc	0
Observat	2

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	3.1E-05	3.1E-05	#NUM!	#NUM!
Residual	0	0	65535		
Total	1	3.1E-05			

	Coefficien	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	0.77055	0	65535	#NUM!	0.77055	0.77055	0.77055	0.77055
X Variabl	-0.0079	0	65535	#NUM!	-0.0079	-0.0079	-0.0079	-0.0079

year 9

SUMMARY OUTPUT

Regression Statistics	
Multiple I	0.054460825
R Square	0.002965961
Adjusted	-0.163206355
Standarc	0.048232665
Observat	8

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	4.2E-05	4.2E-05	0.01795	0.89809
Residual	6	0.01396	0.00233		
Total	7	0.014			

	Coefficients	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	0.769191	0.03758	20.4667	8.8E-07	0.67723	0.86115	0.67723	0.86115
X Variabl	-0.000994309	0.00744	-0.1336	0.89809	-0.0192	0.01722	-0.0192	0.01722

Year 11

SUMMARY OUTPUT

Regression Statistics	
Multiple I	0.07621955
R Square	0.00580942
Adjusted	-0.119464402
Standarc	0.041770713
Observat	10

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	8.2E-05	8.2E-05	0.04675	0.83423
Residual	8	0.01396	0.00174		
Total	9	0.01404			

	Coefficients	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	0.769191	0.02853	26.9562	3.9E-09	0.70339	0.83499	0.70339	0.83499
X Variabl	-0.000994309	0.0046	-0.2162	0.83423	-0.0116	0.00961	-0.0116	0.00961

Year 6

SUMMARY OUTPUT

Regression Statistics	
Multiple I	0.73067
R Square	0.53388
Adjusted	0.37851
Standarc	0.0228
Observat	5

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	0.00179	0.00179	3.4362	0.16083
Residual	3	0.00156	0.00052		
Total	4	0.00335			

	Coefficien	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	0.73349	0.02391	30.5909	8E-05	0.65539	0.80759	0.65539	0.80759
X Variabl	0.01326	0.00721	1.85369	0.1608	-0.0096	0.03631	-0.0096	0.03631

Year 10

SUMMARY OUTPUT

Regression Statistics	
Multiple I	0.065051805
R Square	0.004231737
Adjusted	-0.133020872
Standarc	0.044654771
Observat	9

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	5.9E-05	5.9E-05	0.02975	0.86794
Residual	7	0.01396	0.00199		
Total	8	0.01402			

	Coefficients	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	0.769191	0.03244	23.7105	6E-08	0.69248	0.8459	0.69248	0.8459
X Variabl	-0.000994309	0.00576	-0.1725	0.86794	-0.0146	0.01264	-0.0146	0.01264

Year 12

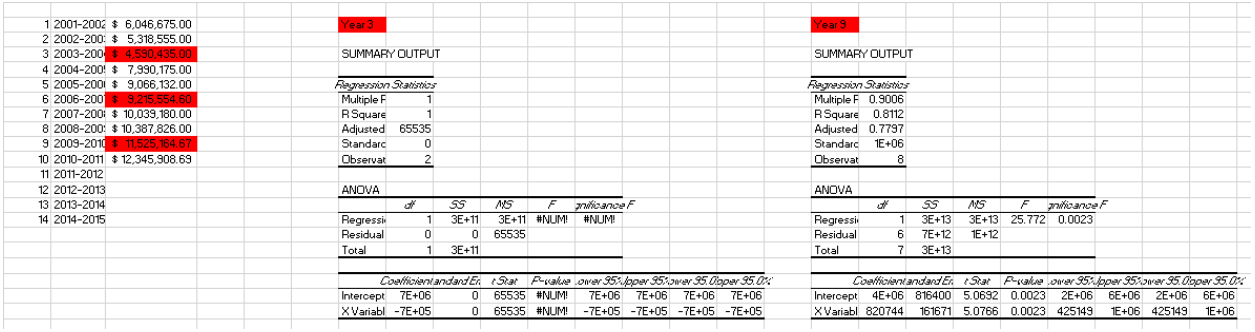
SUMMARY OUTPUT

Regression Statistics	
Multiple I	0.087925664
R Square	0.007730922
Adjusted	-0.102521197
Standarc	0.039381806
Observat	11

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	0.00011	0.00011	0.07012	0.79713
Residual	9	0.01396	0.00155		
Total	10	0.01407			

	Coefficients	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	0.769191	0.02547	30.2034	2.3E-10	0.71158	0.8268	0.71158	0.8268
X Variabl	-0.000994309	0.00375	-0.2648	0.79713	-0.0095	0.0075	-0.0095	0.0075



1	2001-2002	$ 6,046,675.00
2	2002-2003	$ 5,318,555.00
3	2003-2004	$ 4,530,435.00
4	2004-2005	$ 7,990,175.00
5	2005-2006	$ 9,066,132.00
6	2006-2007	$ 9,215,554.60
7	2007-2008	$ 10,039,180.00
8	2008-2009	$ 10,387,826.00
9	2009-2010	$ 11,525,164.67
10	2010-2011	$ 12,345,908.69
11	2011-2012	
12	2012-2013	
13	2013-2014	
14	2014-2015	

Year 3

SUMMARY OUTPUT

Regression Statistics	
Multiple F	1
R Square	1
Adjusted	65535
Standarc	0
Observat	2

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	3E+11	3E+11	#NUM!	#NUM!
Residual	0	0	65535		
Total	1	3E+11			

	Coefficient	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	7E+06	0	65535	#NUM!	7E+06	7E+06	7E+06	7E+06
X Variabl	-7E+05	0	65535	#NUM!	-7E+05	-7E+05	-7E+05	-7E+05

Year 9

SUMMARY OUTPUT

Regression Statistics	
Multiple F	0.9006
R Square	0.8112
Adjusted	0.7737
Standarc	1E+06
Observat	8

ANOVA

	df	SS	MS	F	gnificance F
Regressi	1	3E+13	3E+13	25.772	0.0023
Residual	6	7E+12	1E+12		
Total	7	3E+13			

	Coefficient	andard Er	t Stat	P-value	ower 95%	pper 95%	ower 95.0%	pper 95.0%
Intercept	4E+06	816400	5.0692	0.0023	2E+06	6E+06	2E+06	6E+06
X Variabl	820744	161671	5.0766	0.0023	425149	1E+06	425149	1E+06

1	$	4,180,559.00
2	$	3,487,071.18
3	$	2,793,583.35
4	$	6,183,403.06
5	$	7,476,612.73
6	$	7,610,777.66
7	$	7,427,055.35
8	$	9,094,784.25
9	$	9,773,389.23
10	$	10,604,868.88
11	$	8,378,796.92
12	$	7,720,189.18
13	$	7,156,458.15

3rd

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1
R Square	1
Adjusted R Square	65535
Standard Error	0
Observations	2

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2.40463E+11	2.40463E+11	#NUM!	#NUM!
Residual	0	0	65535		
Total	1	2.40463E+11			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4874046.821	0	65535	#NUM!	4874046.821	4874046.821	4874046.821	4874046.821
X Variable 1	-693487.8228	0	65535	#NUM!	-693487.8228	-693487.8228	-693487.8228	-693487.8228

6th

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.753185872
R Square	0.567288958
Adjusted R Square	0.423051944
Standard Error	1481081.461
Observations	5

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	8.62751E+12	8.62751E+12	3.93303315	0.141617921
Residual	3	6.58081E+12	2.1936E+12		
Total	4	1.52083E+13			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2037714.06	1553371.341	1.311800988	0.280941168	-2905806.825	6981234.945	-2905806.825	6981234.945
X Variable 1	928843.9341	468359.0816	1.983187624	0.141617921	-561683.6948	2419371.563	-561683.6948	2419371.563

9th

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.894122807
R Square	0.799455594
Adjusted R Square	0.766031526
Standard Error	1101815.167
Observations	8

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2.90371E+13	2.90371E+13	23.91856073	0.002736573
Residual	6	7.28398E+12	1.214E+12		
Total	7	3.6321E+13			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2290072.415	858527.4615	2.66744224	0.03715314	189331.3949	4390813.435	189331.3949	4390813.435
X Variable 1	831479.6463	170013.7713	4.890660562	0.002736573	415470.9344	1247488.358	415470.9344	1247488.358

10th

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.922297386
R Square	0.850632469
Adjusted R Square	0.82929425
Standard Error	1020082.628
Observations	9

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4.14815E+13	4.14815E+13	39.86426788	0.000398831
Residual	7	7.28398E+12	1.04057E+12		
Total	8	4.87655E+13			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2290072.415	741072.8482	3.090212279	0.017561761	537713.5859	4042431.244	537713.5859	4042431.244
X Variable 1	831479.6463	131692.101	6.313815636	0.000398831	520077.3106	1142881.982	520077.3106	1142881.982

1	$	1,540,539.00
2	$	1,080,627.00
3	$	620,715.00
4	$	7,990,175.00
5	$	9,066,132.00
6	$	10,647,857.80
7	$	10,039,180.00
8	$	10,387,826.00
9	$	13,868,122.16
10	$	15,449,564.53
11	$	4,784,721.00
12	$	3,003,344.00
13	$	2,453,784.00

3rd

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1
R Square	1
Adjusted R Square	65535
Standard Error	0
Observations	2

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.0576E+11	1.0576E+11	#NUM!	#NUM!
Residual	0	0	65535		
Total	1	1.0576E+11			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2000451	0	65535	#NUM!	2000451	2000451	2000451	2000451
X Variable 1	-459912	0	65535	#NUM!	-459912	-459912	-459912	-459912

6th

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.844889488
R Square	0.713838247
Adjusted R Square	0.618450995
Standard Error	2538587.351
Observations	5

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4.82274E+13	4.82274E+13	7.483581277	0.071601803
Residual	3	1.93333E+13	6.44443E+12		
Total	4	6.75607E+13			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-2528582.6	2662492.875	-0.949704926	0.412326266	-11001823.21	5944658.013	-11001823.21	5944658.013
X Variable 1	2196073.4	802771.8067	2.73561351	0.071601803	-358704.7702	4750851.57	-358704.7702	4750851.57

9th

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.892280027
R Square	0.796163647
Adjusted R Square	0.762190922
Standard Error	2197426.253
Observations	8

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.13162E+14	1.13162E+14	23.43537752	0.002877829
Residual	6	2.89721E+13	4.82868E+12		
Total	7	1.42134E+14			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-964859.2071	1712220.742	-0.563513327	0.593504466	-5154512.432	3224794.017	-5154512.432	3224794.017
X Variable 1	1641442.374	339070.2321	4.841009969	0.002877829	811767.4046	2471117.343	811767.4046	2471117.343

10th

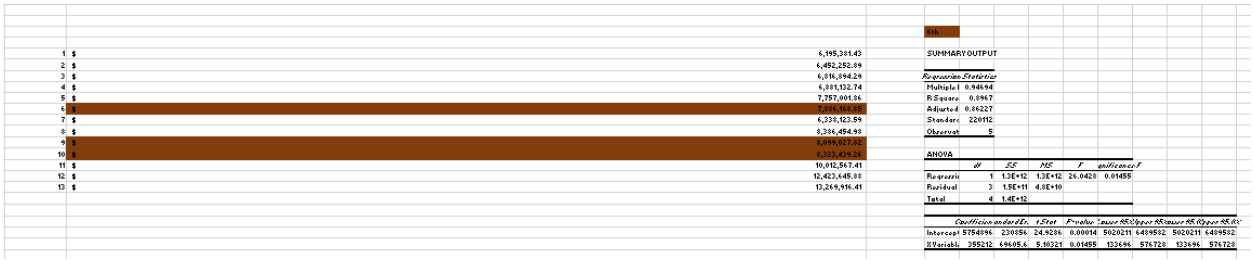
SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.920880499
R Square	0.848020893
Adjusted R Square	0.826309592
Standard Error	2034421.392
Observations	9

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.6166E+14	1.6166E+14	39.05896254	0.000424268
Residual	7	2.89721E+13	4.13887E+12		
Total	8	1.90632E+14			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-964859.2071	1477972.876	-0.652826058	0.53471291	-4459709.714	2529991.3	-4459709.714	2529991.3
X Variable 1	1641442.374	262642.6724	6.249716997	0.000424268	1020391.141	2262493.606	1020391.141	2262493.606



9th

SUMMARY OUTPUT

Regression Statistics	
Multiple	0.6744
R Squar	0.4549
Adjustec	0.364
Standarc	650003
Observa	8

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regress	1	2E+12	2E+12	5.0062	0.0666
Residua	6	3E+12	4E+11		
Total	7	5E+12			

	Coefficien	*andard Er*	*t Stat*	*P-value*	*ower 95%*	*pper 95%*	*ower 95.0*	*pper 95.0%*
Intercep	6E+06	506478	12.003	2E-05	5E+06	7E+06	5E+06	7E+06
X Variab	224411	100298	2.2375	0.0666	-21008	469831	-21008	469831

SUMMARY OUTPUT

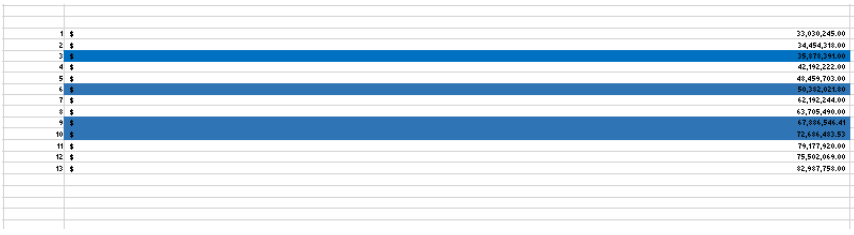
10th

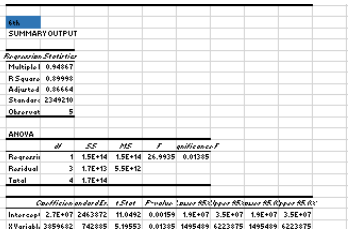
Regression Statistics	
Multiple	0.7374
R Squar	0.5438
Adjustec	0.4786
Standarc	601785
Observa	9

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regress	1	3E+12	3E+12	8.3437	0.0234
Residua	7	3E+12	4E+11		
Total	8	6E+12			

	Coefficien	*andard Er*	*t Stat*	*P-value*	*ower 95%*	*pper 95%*	*ower 95.0*	*pper 95.0%*
Intercep	6E+06	437187	13.906	2E-06	5E+06	7E+06	5E+06	7E+06
X Variab	224411	77690	2.8885	0.0234	40703	408119	40703	408119





9th

SUMMARY OUTPUT

Regression Statistics	
Multiple	0.9746
R Squar	0.9499
Adjustec	0.9415
Standarc	3E+06
Observa	8

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regress	1	1E+15	1E+15	113.67	4E-05
Residua	6	5E+13	9E+12		
Total	7	1E+15			

	Coefficien	*ndard Er*	*t Stat*	*P-value*	*ower 95%*	*pper 95%*	*ower 95.0*	*pper 95.0%*
Intercep	2E+07	2E+06	10.859	4E-05	2E+07	3E+07	2E+07	3E+07
X Variab	5E+06	450203	10.662	4E-05	4E+06	6E+06	4E+06	6E+06

SUMMARY OUTPUT 10th

Regression Statistics	
Multiple	0.982
R Squar	0.9644
Adjustec	0.9593
Standarc	3E+06
Observa	9

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regress	1	1E+15	1E+15	189.45	3E-06
Residua	7	5E+13	7E+12		
Total	8	1E+15			

	Coefficien	*ndard Er*	*t Stat*	*P-value*	*ower 95%*	*pper 95%*	*ower 95.0*	*pper 95.0%*
Intercep	2E+07	2E+06	12.58	5E-06	2E+07	3E+07	2E+07	3E+07
X Variab	5E+06	348726	13.764	3E-06	4E+06	6E+06	4E+06	6E+06

Expenses

	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Salaries	$ 9,594,963.00	$ 9,729,593.00	$ -	$ 13,664,474.00	$ 17,558,577.00		$ 9,777,809.00	$ 11,881,665.00	$ -	$ -	$ 12,800,494.00	$ 13,311,913.00	$ 14,444,793.00
Scholarships	$ 6,332,254.00	$ 6,945,390.00	$ -	$ 7,926,552.00	$ 8,728,136.00		$ 9,362,086.00	$ 9,007,930.00	$ -	$ -			
Contraactual Services	$ 4,373,108.00	$ 4,236,514.00	$ -	$ 5,291,066.00	$ 6,331,688.00		$ 6,448,655.00	$ 5,125,382.00	$ -	$ -	$ 6,579,260.00	$ 5,957,377.00	$ 6,361,193.00
travel	$ 2,820,434.00	$ 3,379,220.00	$ -	$ 4,549,178.00	$ 4,944,903.00		$ 4,246,275.00	$ 4,650,170.00	$ -	$ -	$ 5,327,887.00	$ 6,103,557.00	$ 5,942,182.00
Supplies and Equipement	$ 2,485,648.00	$ 2,636,352.00	$ -	$ 2,587,606.00	$ 3,115,570.00		$ 3,585,597.00	$ 2,741,656.00	$ -	$ -	$ 4,102,867.00	$ 4,001,945.00	$ 3,971,103.00
Fringe Benefits	$ 2,317,832.00	$ 2,210,627.00	$ -	$ 3,390,801.00	$ 3,807,154.00		$ 4,246,275.00	$ 4,650,170.00	$ -	$ -	$ 5,327,887.00	$ 6,103,557.00	$ 5,942,182.00
Tranfers	$ 1,874,000.00	$ 1,379,000.00	$ -	$ 500,000.00	$ 500,000.00		$ -	$ 322,540.00	$ -	$ -	$ 5,332,380.00	$ 2,969,981.00	$ 3,653,931.00
Wages	$ 1,277,642.00	$ 1,545,489.00	$ -	$ -	$ -		$ -	$ -	$ -	$ -			
University Overhead/ and contibutions	$ 1,146,396.00	$ 1,364,100.00	$ -	$ 1,721,900.00	$ 1,881,567.00		$ 2,968,980.00	$ 2,416,644.00	$ -	$ -	$ 1,712,300.00	$ 1,927,780.00	$ 2,520,380.00
Continuos Charges	$ 268,622.00	$ 917,817.00	$ -	$ 1,731,060.00	$ 1,650,782.00		$ 2,772,791.00	$ 2,473,717.00	$ -	$ -	$ 1,995,904.00	$ 1,584,408.00	$ 2,542,340.00
Debt Services				$ 706,800.00	$ 690,000.00		$ 4,459,006.00	$ 4,108,358.00	$ -	$ -	$ 6,467,013.00	$ 3,627,298.00	$ 4,505,557.00
Salaries and Wages							$ 17,815,417.00	$ 20,003,498.00	$ -	$ -	$ 25,267,357.00	$ 25,083,367.00	$ 27,042,979.00
Services									$ -	$ -	$ 9,572,458.00	$ 9,971,084.00	$ 10,303,203.00
FOOTBALL AND BASKEBALL GUARANTEE													$ 1,700,000.00
Subtotal	$ 32,490,899.00	$ 34,344,102.00	$ -	$ 42,069,437.00	$ 49,208,377.00		$ 61,436,616.00	$ 62,731,552.00			$ 79,177,920.00	$ 74,538,710.00	$ 82,987,761.00
Total Expense	$ 30,616,899.00	$ 32,965,102.00	$ 35,313,305.00	$ 41,569,437.00	$ 48,708,377.00	$ 51,270,811.30	$ 61,436,616.00	$ 62,409,012.00	$ 68,031,578.12	$ 73,030,552.17	$ 79,177,920.00	$ 74,538,710.00	$ 82,987,761.00
Estimate percentage coming from rev	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%	20.000%
Total Expenses Coming From Football	$ 6,123,379.80	$ 6,593,020.40	$ 7,062,661.00	$ 8,313,887.40	$ 9,741,675.40	$ 10,254,162.26	$ 12,287,323.20	$ 12,481,802.40	$ 13,606,315.62	$ 14,606,110.43	$ 15,835,584.00	$ 14,907,742.00	$ 16,597,552.20
VSAF													
Scholarships	$ 6,197,570.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,688,414.00	$ 13,437,612.00	$ 14,371,819.00
Personnel	$ 659,707.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,949,321.00	$ 1,989,100.00	$ 2,086,581.00
General and administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 402,248.00	$ 365,063.00	$ 329,625.00
Academic Advising Support/Academic Affairs Support	$ 500,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,074,145.00	$ 1,044,150.00	$ 1,128,949.00
Administrative	$ 245,094.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -
Parking Expenses	$ 195,816.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 250,712.00	$ 228,238.00	$ 236,260.00
Publications/Publications and stewardships	$ 127,983.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 299,480.00	$ 247,864.00	$ 310,708.00
McCue Center Renovation	$ 100,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Conversion Of Perry Foundation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sponsored Events	$ 90,113.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 322,537.00	$ 352,681.00	$ 819,683.00
"Friends Of" Distribution/"Friends of" Operational transfer	$ 85,835.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,125,846.00	$ 1,133,743.00	$ 1,139,934.00
Travel Expenses/Development and travel	$ 53,174.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 192,515.00	$ 186,225.00	$ 201,666.00
Website and Database Maintenance		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,239.00	$ 86,094.00
Athletic Operational Support		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,517,178.00	$ 2,883,666.00	$ 882,368.00

Depreciation	$ 4,664.32	$ 5,066.01	$ 5,387.27	$ 6,388.30	$ 7,485.40	$ 7,821.69	$ 9,441.45	$ 9,590.89	$ 10,378.65	$ 11,691.03	$ 11,863.00	$ 12,031.00	$ 12,494.00
Total	$ 8,255,092.00	$ 8,966,014.69	$ 9,534,592.35	$ 11,306,265.11	$ 13,247,950.01	$ 13,843,119.05	$ 16,709,840.65	$ 16,974,317.81	$18,368,526.09	$ 20,691,230.00	$ 20,834,860.00	$ 21,966,612.00	$ 21,616,181.00
Total Expense From football	$ 1,651,018.40	$ 1,793,202.94	$ 1,906,918.47	$ 2,261,253.02	$ 2,649,590.00	$ 2,768,623.81	$ 3,341,968.13	$ 3,394,863.56	$ 3,673,705.22	$ 4,138,246.00	$ 6,326,521.50	$ 7,115,911.69	$ 6,302,319.90
Expenses Est. from Football For OCF Model	$ 7,774,398.20	$ 8,386,223.34	$ 8,969,579.47	$ 10,575,140.42	$ 12,391,265.40	$ 13,022,786.07	$ 15,629,291.33	$ 15,876,665.96	$17,280,020.84	$ 18,744,356.43	$ 22,162,105.50	$ 22,023,653.69	$ 22,899,872.10

	Total expenses
1	$ 30,616,899.00
2	$ 32,965,102.00
3	$ 35,313,305.00
4	$ 41,569,437.00
5	$ 48,708,377.00
6	$ 51,270,811.30
7	$ 61,436,616.00
8	$ 62,409,012.00
9	$ 68,031,578.12
10	$ 73,030,552.17
11	$ 79,177,920.00
12	$ 74,538,710.00
13	$ 82,987,761.00

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1
R Square	1
Adjusted R Square	65535
Standard Error	0
Observations	2

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	3E+12	3E+12	#NUM!	#NUM!
Residual	0	0	65535		
Total	1	3E+12			

	Coefficients	*tandard Er*	*t Stat*	*P-value*	*ower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	28268696	0	65535	#NUM!	3E+07	3E+07	3E+07	3E+07
X Variable 1	2348203	0	65535	#NUM!	2E+06	2E+06	2E+06	2E+06

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.989575883
R Square	0.979260428
Adjusted R Squa	0.976297632
Standard Error	2129895.432
Observations	9

ANOVA

	df	*SS*	*MS*	*F*	*gnificance F*
Regression	1	1.49938E+15	1.49938E+15	330.5190152	4E-07
Residual	7	3.17552E+13	4.53645E+12		
Total	8	1.53114E+15			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*ower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	23040811.7	1547333.158	14.89065983	1.47696E-06	2E+07	26699673	19381950.19	26699673.21
X Variable 1	4998974.046	274968.3179	18.18018193	3.76934E-07	4E+06	5649171	4348777.293	5649170.799

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.96736605							
R Square	0.935797074							
Adjusted R Square	0.914396099							
Standard Error	2141808.98							
Observations	5							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regression	1	2E+14	2E+14	43.727	0.007			
Residual	3	1E+13	5E+12					
Total	4	2E+14						
	Coefficients	*ndard Er*	*t Stat*	*P-value*	*ower 95%*	*pper 95%*	*ower 95.0*	*pper 95.0%*
Intercept	24398436.7	2E+06	10.861	0.0017	2E+07	3E+07	2E+07	3E+07
X Variable 1	4478729.1	677299	6.6126	0.007	2E+06	7E+06	2E+06	7E+06

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.985207117							
R Square	0.970633064							
Adjusted R Square	0.965738575							
Standard Error	2300550.002							
Observations	8							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regression	1	1E+15	1E+15	198.31	8E-06			
Residual	6	3E+13	5E+12					
Total	7	1E+15						
	Coefficients	*ndard Er*	*t Stat*	*P-value*	*ower 95%*	*pper 95%*	*ower 95.0*	*pper 95.0%*
Intercept	23040811.7	2E+06	12.853	1E-05	2E+07	3E+07	2E+07	3E+07
X Variable 1	4998974.046	354983	14.082	8E-06	4E+06	6E+06	4E+06	6E+06

Depreciation

Orinal Dep	$4,664.32	$ 5,066.01	$5,387.27	$6,388.30	$7,485.40	$7,821.69	$9,441.45	$9,590.89	$10,378.65	$11,691.03	$11,863.00
	41.727%	37.300%	33.524%	54.184%	53.424%	55.078%	42.476%	45.776%	49.247%	49.691%	30.365%
aprox dep.	$1,946.29	$ 2,113.90	$2,247.96	$2,665.66	$3,123.45	$3,263.77	$3,939.65	$4,002.01	$ 4,330.72	$ 4,878.34	$ 4,950.10

		$4,664.32	$ 30,616,899.00		$1,946.29	$4,664.32
	Estimate	0.015%	100%		42%	100%
	of					
	total dep	$5,066.01	$ 32,965,102.00		$2,113.90	$5,066.01
		0.015%	100%		42%	100%

Original spreadsheet for without percentage changes

	Year	1
SALES	(REVENUE)	$ 60,000
COST	(EXPENSES)	$ (25,000)
DEPRECIATION		$ -
EBT		$ 35,000
TAXES		$ -
ATOINC		$ 35,000
DEPRECIATION		$ -
ATCF	(OPC)	$ 35,000

Example of the Operating Cash Flows Analysis

Clemson University

			2015	2014	2013	2012	2011
SALES	(REVENUE)		$43,959,747	$ 39,207,780.00	$ 42,427,250.00	$ 41,273,517.00	$ 39,207,780.00
COST	(EXPENSES)		$ (24,191,774)	$ (24,191,774.00)	$ (24,748,157.00)	$ (19,969,497.00)	$ (23,652,472.00)
DEPRECIATION			$ -	$ -	$ -	$ -	$ -
EBT			$ 19,767,973	$ 15,016,006.00	$ 17,679,093.00	$ 21,304,020.00	$ 15,555,308.00
TAXES			$ -	$ -	$ -	$ -	$ -
ATOINC			$ 19,767,973	$ 15,016,006.00	$ 17,679,093.00	$ 21,304,020.00	$ 15,555,308.00
DEPRECIATION			$ -	$ -	$ -	$ -	$ -
ATCF	(OPC)		$ 19,767,973	$ 15,016,006.00	$ 17,679,093.00	$ 21,304,020.00	$ 15,555,308.00

Modification percentages	REVENUES	22% More
	EXPENSES	21% Less

	2015	2014	2013	2012	2011
Revenues	$53,630,891.34	$47,833,491.60	$51,761,245.00	$50,353,690.74	$47,833,491.60
Expenses	$ (19,111,501.46)	$ (19,111,501.46)	$ (19,551,044.03)	$ (15,775,902.63)	$ (18,685,452.88)
OPC Estimate	$34,519,389.88	$28,721,990.14	$32,210,200.97	$34,577,788.11	$29,148,038.72

	Multipliers	4 2011	3 2012	2 2013	1 2014	2015
1		$ 31,656,075.29	$ 36,786,037.40	$ 33,567,368.85	$ 29,320,843.63	$ 34,519,389.88
K	0.02085					
1+K	1.02085					
(1+k)n	1.08604478					
	1.063863231					
	1.042134723					
	1.02085					
	1					

Stanford University

			2015	2014	2013	2012	2011
SALES	REVENUE		$ 37,519,312	$ 37,519,312	$ 36,745,030	$ 24,839,939	$ 25,564,646
COST	EXPENSE		$ (19,312,411)	$ (19,312,411)	$ (20,864,327)	$ (16,694,502)	$ (18,738,731)
DEPRECIATION			$ -	$ -	$ -	$ -	$ -
EBT			$ 17,606,901	$ 17,606,901	$ 15,880,703	$ 8,145,437	$ 6,825,915
TAXES			$ -	$ -	$ -	$ -	$ -
ATOINC			$ 17,606,901	$ 17,606,901	$ 15,880,703	$ 8,145,437	$ 6,825,915
DEPRECIATION			$ -	$ -	$ -	$ -	$ -
ATCF	(OPC)		$ 17,606,901	$ 17,606,901	$ 15,880,703	$ 8,145,437	$ 6,825,915

Modification percentages	REVENUES	22% More
	EXPENSES	21% Less

	2015	2014	2013	2012	2011
Revenues	$41,646,436.32	$41,646,436.32	$40,786,983.30	$27,572,332.29	$28,376,757.06
Expenses	$ (17,821,607.85)	$ (17,821,607.85)	$ (18,673,572.67)	$ (14,941,579.29)	$ (16,771,164.25)
OPC Estimate	$23,824,828.48	$23,824,828.48	$22,113,410.64	$12,630,753.00	$11,605,592.82

	Multipliers	4 2011	3 2012	2 2013	1 2014	0 2015
1		$ 12,234,568.05	$ 13,140,752.21	$ 22,704,732.34	$ 24,141,269.85	$ 23,824,828.48
K	0.0133					
1+K	1.0133					
(1+k)n	1.0542					
	1.0404					
	1.0267					
	1.0133					
	1					

Auburn University			2015	2014	2013	2012	2011
							18627
	SALES	(REVENUE)	$ 86,742,256	$ 86,742,256	$ 77,170,242	$ 75,092,576	$ 77,170,242
	COST	(EXPENSES)	$ (40,077,352)	$ (40,077,352)	$ (43,639,256)	$ (36,306,282)	$ (33,334,595)
	DEPRECIATION		$ -	$ -	$ -	$ -	$ -
	EBT		$ 46,664,904	$ 46,664,904	$ 27,530,986	$ 38,786,294	$ 43,835,647
	TAXES		$ -	$ -	$ -	$ -	$ -
	ATOINC		$ 46,664,904	$ 46,664,904	$ 27,530,986	$ 38,786,294	$ 43,835,647
	DEPRECIATION		$ -	$ -	$ -	$ -	$ -
	ATCF	(OPC)	$ 46,664,904	$ 46,664,904	$ 27,530,986	$ 38,786,294	$ 43,835,647

		Multiplier:	4	3	2	1	0
			2011	2012	2013	2014	2015
1			$ 61,571,730.00	$ 54,737,135.60	$ 43,302,292.72	$ 61,912,958.04	$ 60,414,674.12
K	0.0248						
1+K	1.0248						
(1+k)n	1.103						
	1.0763						
	1.0502						
	1.0248						
	1						

Modification percentage		
	REVENUES	22% More
	EXPENSES	21% Less

	2015	2014	2013	2012	2011
Revenues	$96,283,904.16	$96,283,904.16	$85,658,968.62	$83,352,759.36	$85,658,968.62
Expenses	$ (35,869,230.04)	$ (35,869,230.04)	$ (44,427,134.12)	$ (32,494,122.39)	$ (29,834,462.53)
OPC Estimate	$60,414,674.12	$60,414,674.12	$41,231,834.50	$50,858,636.97	$55,824,506.10

10) Appendix B

The first step in the spreadsheet was to connect some of the items in the athletic financial statement such as “Football tickets” to its contribution to the total revenue of the institution during a fiscal year. By calculating the contribution (in percentage) of the total football tickets sales of the total tickets sales, we were able to identify the percentage estimate of total tickets sales coming from the football program as shown in table 1.

	2001-2002	2002-2003
Football Tickets Sales	$ 6,046,675.00	$ 5,318,555.00
Basketball Tickets Sales	$ 1,487,715.00	$ 1,463,744.00
Other	$ 393,812.00	$ 263,948.00
Total	$ 7,928,202.00	$ 7,046,247.00
Football %	76.268%	75.481%

(Table 1)

For increasing the accuracy of the estimates, this analysis was done from the year 2001 to 2014. Most of the data was easily found and was consistent through all the fiscal years.

The next step was to create a “formula (1)” which provides a closer look into the data and allows us to find a good estimate of how much revenue is really coming from the football program. This variable is represented in the spreadsheet as “Revenue estimate from football for OCF model”. In order to find this estimate, we had to create the mentioned formula which we named “formula (1)”. The formula (1) is also composed of two sub-variables. The first sub variable is referred in the spreadsheet as “Football Partial revenue”. This sub-variable has components that

add value to the final revenue reported by UVA. There are three components. The first one is the "ACC Distribution percentage for football" category. It tells us how much money is given by the conferences to be distributed to all athletic programs within the ACC conference. To create this component, we took the total amount of money received by the institution each year and multiplied it by the percentage of contribution of football tickets calculated before. The multiplication of these two numbers gave the percentage that football gains from this inflow which was coming from the ACC (for 2001 this value was $6,195,381.43 as shown in the graph below (lower left corner number).

ACC Distribution	$ 8,123,181.00	$ 8,548,218.00
	$ 8,123,181.00	$ 8,548,218.00
	$ 6,332,254.00	$ 6,945,390.00
	$ 6,046,675.00	$ 5,318,555.00
	$ 3,829,994.00	$ 4,729,712.00
Football guaranties	$ 1,540,539.00	$ 1,080,627.00
	$ 1,530,663.00	$ 1,744,435.00
	$ 1,487,715.00	$ 1,463,744.00
	$ 884,796.00	$ 966,697.00
	$ 597,339.00	$ 674,924.00
	$ 500,000.00	$ 518,333.00
	$ 443,018.00	$ 514,127.00
	$ 393,812.00	$ 330,587.00
	$ 365,478.00	$ 300,000.00
	$ 286,645.00	$ 263,948.00
	$ 194,614.00	$ 219,778.00
	$ 188,856.00	$ 200,481.00
	$ 184,666.00	$ 195,380.00
	$ 100,000.00	$ 183,640.00
		$ 155,742.00
		$ 100,000.00
%of ACC Distribution cominng from footbal	$ 6,195,381.43	$ 6,452,252.89

(Table 2)

The second component is one called "Football Guaranties" which is the guarantee money that football received coming from its operations (like contracts). This component can be visualized also in the graphic above in the bold cell.

The third component for the "Football Partial Revenue" is the total "Football ticket sales" which was reported in the athletic financial statements of UVA as shown below.

Football Tickets Sales	$ 6,046,675.00	$ 5,318,555.00
Basketball Tickets Sales	$ 1,487,715.00	$ 1,463,744.00
Other	$ 393,812.00	$ 263,948.00
Total	$ 7,928,202.00	$ 7,046,247.00
Football %	76.268%	75.481%

(Table 3)

Now that all the components are ready, the final step was to add them together as the following image shows.

Footbal Partial Revenue	$ 13,782,595.43	$ 12,851,434.89

(Table 4)

By finding this variable, another piece of useful information was found. In the excel spreadsheet this variable can be identified as "% of Revenue coming from football" shown in table 5.

	2001-2002	2002-2003
Footbal Partial Revenue	$ 13,782,595.43	$ 12,851,434.89
Total Revenue	$ 33,030,245.00	$ 34,454,318.00
% Of Rev. Coming From Football	41.727%	37.300%

(Table 5)

The ability of this category is that it shows what was the contribution of the football program in the total revenue amount of the athletic department. The way to calculate it was by dividing the "football partial revenue" over the "Total revenue" category. The "Total Revenue" category also made by other sub variables that are shown in the spreadsheet. These sub variables make sure that the value given by the UVA athletic financial statement was correct and accurate. It is extremely important to explain that the information that we could not find within the spreadsheet categories was filled out by two different methods. The most common method used was a forecasting regression. This method was applied in the "Total Revenue" as described in the image below (blue cells).

	8th								
33,030,245.00	SUMMARY OUTPUT								
34,454,318.00									
35,878,391.00	*Regression Statistics*								
42,192,222.00	Multiple	0.9487							
48,459,703.00	R Squar	0.9							
50,382,021.80	Adjustec	0.8666							
62,192,244.00	Standarc	2E+06							
63,705,490.00	Observa	5							
67,886,546.41									
72,686,483.53	ANOVA								
79,177,920.00		*df*	*SS*	*MS*	*F*	*gnificance F*			
75,502,069.00	Regress	1	1E+14	1E+14	26.994	0.0139			
82,987,758.00	Residua	3	2E+13	6E+12					
	Total	4	2E+14						
		Coefficien	*andard Er*	*t Stat*	*P-value*	*ower 95%*	*pper 95%*	*ower 95.0*	*pper 95.0%*
	Intercept	3E+07	2E+06	11.049	0.0016	2E+07	4E+07	2E+07	4E+07
	X Variab	4E+06	742885	5.1955	0.0139	1E+06	6E+06	1E+06	6E+06

(Table 6)

In this way, we were able to estimate the total revenue value for each year in which the information was missing. The second component of "formula (1)" is one that comes from external capital sources. This information is hard to find in any athletic statements. These external cash inflows come from a lot of different sources. In UVA these sources were Annual giving's, Annual funding, Endowment distribution, Income distribution, Parking fee revenue, Facility Rentals and "Friends of" gifts as shown on table 6.

Virgina s Athletic Foundation		
Annual Giving/fundings	$ 8,690,557.00	$ -
Endowment distribution/Income	$ 630,422.00	$ 200,481.00
Parking fee Revenue/ Facility Rentals	$ 322,184.00	$ 183,640.00
interest Income/Earned	$ 218,238.00	$ 195,380.00
Sum Of Foundation aids	$ -	$ 8,438,647.00
"Friends of" Gifts	$ 157,386.00	$ 330,587.00
Total Help	$ 10,018,787.00	$ 9,348,735.00

(Table 7)

In the UVA spreadsheet, this external source of inflow is recorded as "Virginia Athletic Foundation". The Virginia Athletic foundation assumes that the total amount of money generated by them is given to all sports programs within the institution. This means that the amount of capital given in the statement has to be weighted in order to attribute them to a specific program. That is one of the reasons why "% of Revenue coming from football" category was vital for this research since it allowed us to increase the accuracy of the final estimate.

The way to find the missing variable in the "formula (1)" is by multiplying the "total help for Football" category (table 9) by the "% of Revenue coming from football" (table 5).

Virgina s Athletic Foundation	
Annual Giving/fundings	$ 8,690,557.00
Endowment distribution/Income	$ 630,422.00
Parking fee Revenue/ Facility Rentals	$ 322,184.00
interest Income/Earned	$ 218,238.00
Sum Of Foundation aids	$ -
"Friends of" Gifts	$ 157,386.00
Total Help	$ 10,018,787.00

(Table 8)

PERCENTAGE FOR FOOTBALL		
Annual Giving	$ 3,626,325.85	$ -
Endowment distribution	$ 263,057.43	$ 74,779.26
Parking fee Revenue	$ 134,438.35	$ 68,497.58
interest Income	$ 91,064.60	$ 72,876.59
Sum Of Foundation aids		$ 3,147,609.03
"Friends of" Gifts	$ 65,672.77	$ 123,308.70
Total Help For Football	$ 4,180,559.00	$ 3,487,071.18

(Table 9)

In this way, we came out with the two components in "formula (1)". The next step was to add them together to produce the "Revenue estimate from football for OCF model" shown in the table 9.

Revenue Est. from Football For OCF Model	$ 17,963,154.43	$ 16,338,506.07

(Table 9)

This variable was one of the key variables for the NPV model. It is important to explain that all the information for the "Total help from football" was not available. For that reason a forecast regression was used to calculation the missing data to create table 10.

1	$	4,180,559.00
2	$	3,487,071.18
3	$	2,793,583.35
4	$	6,183,403.06
5	$	7,476,612.73
6	$	7,610,777.66
7	$	7,427,055.35
8	$	9,094,784.25
9	$	9,773,389.23
10	$	10,604,868.88
11	$	8,378,796.92
12	$	7,720,189.18
13	$	7,156,458.15

3rd

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1
R Square	1
Adjusted R Square	65535
Standard Error	0
Observations	2

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2.40463E+11	2.40463E+11	#NUM!	#NUM!
Residual	0	0	65535		
Total	1	2.40463E+11			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4874046.821	0	65535	#NUM!	4874046.821	4874046.821	4874046.821	4874046.821
X Variable 1	-693487.8228	0	65535	#NUM!	-693487.8228	-693487.8228	-693487.8228	-693487.8228

(Table 10)

Now that we have the revenue estimates, the next estimate to create came from the UVA expenses. For this estimate, the process is basically the same as the revenue section in which a "formula (1)" had to be created to find the real expenses for the football program at UVA. These two components were "Total Expenses coming from Football" and "Total Expenses From Football" (VSFA). To find the first component we had to do an analysis of what the percentage contribution of football to the total expenses of selected universities was. This number was close to 20% in most of the cases. For that reason the decision criteria was to use a flat 20% of the "Total Expense" cell. This means that from the total expenses of all athletic programs during a fiscal year, 20 percent was coming from football as shown in (table 11).

	2001-2002	2002-2003
Salaries	$ 9,594,963.00	$ 9,729,593.00
Scholarships	$ 6,332,254.00	$ 6,945,390.00
Contraactual Services	$ 4,373,108.00	$ 4,236,514.00
travel	$ 2,820,434.00	$ 3,379,220.00
Supplies and Equipement	$ 2,485,648.00	$ 2,636,352.00
Fringe Benefits	$ 2,317,832.00	$ 2,210,627.00
Tranfers	$ 1,874,000.00	$ 1,379,000.00
Wages	$ 1,277,642.00	$ 1,545,489.00
University Overhead/ and contibutions	$ 1,146,396.00	$ 1,364,100.00
Continuos Charges	$ 268,622.00	$ 917,817.00
Debt Services		
Salaries and Wages		
Services		
FOOTBALL AND BASKEBALL GUARANTEE		
Subtotal	$ 32,490,899.00	$ 34,344,102.00
Total Expense	$ 30,616,899.00	$ 32,965,102.00
Estimate percentage coming from rev	20.000%	20.000%
Total Expenses coming from football	$ 6,123,379.80	$ 6,593,020.40

(Table 11)

For the second component, the analysis of external outflows was required. This part was similar to the way the external inflow worked for the revenue section. The external outflow also came from the Virginia Athletic Foundation activities that were not originally recorded in the athletic financial statement. Table 12 explains this in more detail.

VSAF	
Scholarships	$ 6,197,570.00
Personnel	$ 659,707.00
General and administrative	$ -
Academic Advising Support/Academic Affairs Support	$ 500,000.00
Administrative	$ 245,094.00
Parking Expenses	$ 195,816.00
Publications/Publications and stewardships	$ 127,983.00
McCue Center Renovation	$ 100,000.00
Conversion Of Perry Foundation	$ -
Sponsored Events	$ 90,113.00
"Friends Of" Distribution/"Friends of" Operational transfer	$ 85,635.00
Travel Expenses/Development and travel	$ 53,174.00
Website and Database Maintenance	
Athletic Operational Support	
Depreciation	$ 4,664.32
Total	$ 8,255,092.00
Total Expense From football	$ 1,651,018.40

(Table 12)

The flat percentage that was chosen to be used in the first part of the analysis is now going to be used again to weight the external expenses that football contributed for the VSAF. Each category was multiplied by the football contribution (20%). The excel spreadsheet had vast information in the VSAF section which also required the use of data analysis to fill out the information that was not available. The first approach we took was to use the forecasting regression as we did in the previous scenarios. We detected that the regression was not accurate for this case since important information was missing, which made the regression results biased. For this reason we created the following table to come out with the approximation.

$ 30,616,899.00	100%
$ 8,255,092.00	27%
$ 82,987,761.00	100%
$ 21,616,181.00	26%
$ 74,538,710.00	100%
$ 21,966,612.00	29%
$ 79,177,920.00	100%
$ 20,834,860.00	26%

(Table 13)

The first part for the rule to work was to see what was the percentage of the total from the VSAF section and see it correspondent percentage which was attributed to this cell. After this, we compared it to the total expense for the athletics department. The next step was to average the data available and see what was the percentage associated with it. In each case, the number was

close to 27 %. Thus, we decided to use 27% as a base for the creation of the following table. Here are a couple examples of this process (table 14).

CACLULATION BASE	Equal x21	100%
	Result	27%
Calculation of I43	$ 62,409,012.00	100%
	$ 16,974,317.81	27%
Calculation of H43	$ 61,436,616.00	100%
	$ 16,709,840.65	27%

(Table 14)

The last step for the expenses section was to simply add the "Total Expenses Coming From Football" with "Total Expenses from football" (VSFA). This sum gave us the "Expenses Estimate from Football for the OCF Model" that goes into the OCF section of the Net Present Value Model and is shown in table 15.

Expenses Est. from Football For OCF Model	$ 7,774,398.20	$ 8,386,223.34	$ 8,969,579.47

(Table 15)

After all these calculations, the next step was to find the depreciation variable. For this purpose, we ignore depreciation after the creation of spreadsheets that strongly suggested that depreciation should not be taking into account since it is so small that it will not have any effect in this study. The following table shows that depreciation was around 0.015%.

	$4,664.32	$ 30,616,899.00
Estimate	0.015%	100%
of		
total dep	$5,066.01	$ 32,965,102.00
	0.015%	100%

(Table 16)

With the exclusion of the depreciation, the next important variable that requires an examination is the taxes. This component is necessary to calculate ATONIC (operating income) for the football program. The "Taxes" variable is the easiest one to work with since universities do not have to pay taxes according with the Association of American Universities website.

(http://www.aau.edu/workarea/downloadasset.aspx?id=14246). This means the taxes will be $0, making an equality between EBT and ATOINC.

In table 17, there is an example illustration about how we attained the partial OCF for a year.

SALES	(REVENUE)	$	60,000
minus COST	(EXPENSES)	$	(25,000)
minus DEPRECIATION		$	(24,750)
equal EBT		$	10,250
minus TAXES		$	-
equal ATOINC		$	10,250
plus DEPRECIATION		$	24,750
equal ATCF	(OPC)	$	35,000

(Table 17)

Applied example

SALES	(REVENUE)	$	59,227,831
COST	EXPENSES	$	(27,694,367)
DEPRECIATION		$	-
EBT		$	31,533,464
TAXES		$	-
ATOINC		$	31,533,464
DEPRECIATION		$	-
ATCF	(OPC)	$	31,533,464

Now for the analysis of the 15 schools, we used a database which is called “The Equity in Athletics Data Analysis Cutting Tool” (CITATION) which provided a solid data source for data interpretation for athletic programs in any university in the U.S. The numbers that appear in the database are not as specific as the ones founded in the UVA athletic statements, but they are close to the ones we found by analyzing UVA. This is the main reason why we decided to use them for the NPV model. Since this numbers are not totally precise, a percentage modification had to be done before we could apply them to the OCF formula. The modification compared the UVA

numbers in the database with the ones we estimated. After this examination, we found that there was a percentage deviation in them. This difference was around 21% less for expenses and a total of 22% extra for the revenues. This is better illustrated in table 18.

	Calculated Web	Calculated
SALES	$ 24,551,003	$ 31,552,009
COST	$ (18,083,383)	$ (22,899,872)
DEPRECIATION	$ -	$ -
EBT	$ 6,467,620	$ 8,652,137
TAXES	$ -	$ -
ATOINC	$ 6,467,620	$ 8,652,137
DEPRECIATION	$ -	$ -
ATCF	$ 6,467,620	$ 8,652,137

(Table 18)

To summarize this approach, each number in the data base will be multiplied for the percentage corrections that we just explained. In the revenue category an extra 22% should be added and for the expenses category there is a reduction of 21% of the original number. Table 19 shows an example of this modification.

			2015	2014	2013	2012	2011
**							
	SALES	(REVENUE)	$ 59,227,831	$ 59,227,831	$ 52,793,124	$ 47,869,615	$ 49,754,373
	COST	(EXPENSES)	$ (27,694,367)	$ (27,694,367)	$ (26,678,123)	$ (20,624,183)	$ (19,079,552)
	DEPRECIATION		$ -	$ -	$ -	$ -	$ -
	EBT		$ 31,533,464	$ 31,533,464	$ 26,115,001	$ 27,245,432	$ 30,674,821
	TAXES		$ -	$ -	$ -	$ -	$ -
	ATOINC		$ 31,533,464	$ 31,533,464	$ 26,115,001	$ 27,245,432	$ 30,674,821
	DEPRECIATION		$ -	$ -	$ -	$ -	$ -
	ATCF	(OPC)	$ 31,533,464	$ 31,533,464	$ 26,115,001	$ 27,245,432	$ 30,674,821
Modification	REVENUES	22% More					
percentages	EXPENSES	21% Less					
			2015	2014	2013	2012	2011
		Revenues	$72,257,953.82	$72,257,953.82	$64,407,611.28	$58,400,930.30	$60,700,335.06
		Expenses	$ (21,878,549.93)	$ (21,878,549.93)	$ (21,075,717.17)	$ (16,293,104.57)	$ (15,072,846.08)
		OPC Estimate	$50,379,403.89	$50,379,403.89	$43,331,894.11	$42,107,825.73	$45,627,488.98

(Table 19)

The positive result about this modification is that with the increase in the revenue projection we are showing that the number revealed by the database is under calculated. This is excellent for the institution since the university will have an "extra income" that might not be shown directly in the athletic statements. Even better, the university will have a margin of error in case the revenues expected for the fiscal year does not reach the number that the percentage adjustment is showing. On the expense side, it can be an advantage if the athletic personnel understands why this number should be less. As we said before, the number predicted in the model is less than the one recorded in the database. This suggest that the presence of external resources can be used as capital for other needs. The reason why the estimates coming from this research in the expenses category are less than the ones recorded can be explained by the weight distribution of external sources itself. As we explained during the external inflows section under the revenue section, not all the universities list all the detail information in the athletic financial statements. This means that the database is probably assuming that bigger sports like football have more expenses than the rest of the programs or maybe they did not record expenses that organizations like the VSFA did in the UVA athletic statements. So if people who use this model in the future might do not feel comfortable subtracting a total of 21 percent for the expenses number, we recommend to use the original number coming from the data base for the expense section.

All of the previous work was based on finding the OCF for each year. Now the objective is to explain how the first key component in the NPV which is the initial outlay or Io

Since the investment outlay for big sports such as football is mainly based on the construction of stadiums that will be the main stream for inflows (tickets, advertisement, sponsorship, events, etc.) we decide to analyze 10 of the stadiums with the most expensive cost in college football (division 1).The information was taken from the "College Football and the most expensive stadiums" article

in the *The Richest website* **(http://www.therichest.com/luxury/most-expensive/college-footballs-most-expensive-stadiums/?view=all).**

School name	Cost (In Millions)
penn State	105
Texas Tech	115
Tennessee	137
Rutgers	166
Louisville	193
Ohio State	212
michigan Stadium	238
washington	287
UT San Antonio	301
Minnesota	330
Total sum	2084
Average	208.4

Table 20

With this information, table 20 was created. This table shows what will be the cost for any football stadium with similar characteristics than the ones listed in the table. The conclusion is that if any athletics football program want to copy the standards of any of these 10 universities, the university will have to invest at least $105M. This information will be important for the evaluation of a project that requires the construction of a football stadium but for the analysis of the 15 schools the predetermine investment outlay was a flat $50 Million. Although the cost of a football stadium can be lower than $50M, the remodeling that these stadiums had since they were created was also a good reason to choose this investment outlay. The investment outlay for future programs can be calculated with the creation of the following table.

School name	Cost (In Millions)	Capacity	Ratio per capacity
penn State	$ 105	106572	$ 985.25
Texas Tech	$ 115	60454	$ 1,902.27
Tennessee	$ 137	102455	$ 1,337.17
Rutgers	$ 166	52454	$ 3,164.68
Louisville	$ 193	55000	$ 3,509.09
Ohio State	$ 212	104944	$ 2,020.13
michigan Stadium	$ 238	109901	$ 2,165.59
washington	$ 287	70083	$ 4,095.14
UT San Antonio	$ 301	72000	$ 4,180.56
Minnesota	$ 330	50805	$ 6,495.42
Total sum	$ 2,084	784668	Approx cost
Average	$ 208	$2,985.53	per one unit
			Of capacity
			Of the higher
			Standard

Table 21

Table 21 describe how much money is needed to invest in order to create a stadium with the higher standards. This table also has the advantage that it provides the stadium capacity information which can give a better idea to the athletic department of how much capital will be required for the project.

The last variable to explain is $(1+K)^t$ where K is associated with the cost of capital required for the project. For the NPV model the state bond's interest rate is applied. The reason why we chose state bonds is because of the nature of the universities. This means that depending where the university is located, there are different living cost and interest within the state. The webpage that contains the most accurate information about state bonds was the municipal bonds (http://www.municipalbonds.com/). After a close look into the data for each state, all the data was recollected into a excel spreadsheet which allowed us to came out with the different cost of capital for each state.

State	K
Alabama	2.480
California	1.328
Connecticut	1.537
Florida	1.089
Georgia	2.186
Iowa	2.270
Michiga	1.933
New Hampshire	2.274
New York	2.274
North Carolina	1.015
Oklahoma	2.090
South Carolina	2.085
New Jersey	3.605
Utah	1.148

Table 22

Table 22 is simply the average of all the information obtained in the search for state bonds with maturity date 10 years from now (note: each state had different trade amount since not all states offers the same state bonds).

Now the next important issue to talk about before applying all the models is the selection of the 15 universities for this research. As we mentioned in the literature review (The business perspective) we decide to examine the top ranked universities. According to the NCAA January 12 of 2016 rankings (http://www.ncaa.com/rankings/football/fbs) the top 5 football programs in the nation where the ones provided by table 23 below.

RANK	SCHOOL	RECORD	PREVIOUS
1	Clemson	13-0	1
2	Alabama	12-1	2
3	Michigan State	12-1	5
4	Oklahoma	11-1	3
5	Iowa	12-1	4

(Table 23)

As this table shows, the top ranked teams are well-known football programs. For the medium schools the next 4 schools are quite interesting to evaluate, since they are extremely well known in academics, but also according to Dr. Fitzpatrick, are schools that should have academic excellence, but also an athletic orientation. For the small schools we decide to provide an opinion about Dr. Fitzpatrick viewpoint. Inspired with his contribution in the literature review, we decided to use the NPV model with the following Ivy League schools. Princeton University, Yale University, Columbia University and Dartmouth College. For the fifth university, Stanford was the one we chose. The reason behind this is that they are a small school which is ranked in the top 10 NCAA division I programs. For the medium schools (greater that 15,000 undergraduates but not grater that 30,000) we decide to take Auburn University, BYU, East Carolina University, Florida State University and finally Georgia State University.

Another important piece of information was to explain how many years will be used to evaluate the existing programs in any of the schools mentioned. After analyzing how much money institutions like Clemson University, University of Alabama and Michigan State were generating as revenue, we decide that a 5 year cash flow analysis was a good barometer that will show a real picture of how the programs in each of this universities were doing. Other reason to choose the 5 year timeframe was the database itself. The database has all the information for the past 5 fiscal years.

With all this finished, the NPV model shown in image 1 was ready to give the value result we seek. This result could be a negative number (meaning the university was losing money), number zero itself (meaning breakeven), or positive value (meaning the university is winning money.

$$NPV = -Io + \frac{OCF1}{(1+K)1} + \frac{OCF2}{(1+K)2} + \frac{OCF3}{(1+K)3} \ldots + \frac{OCFn}{(1+K)n}$$