THE INFLUENCE OF LOCAL PROFESSIONAL SPORTS TEAMS ON BUREAUCRATIC PRODUCTIVITY

by

William Readhead

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Approved by:

_____
Dr. Craig Depken

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Dr. Paul Gaggl

_____
Dr. Louis H. Amato

ABSTRACT

WILLIAM READHEAD. The Influence of Local Professional Sports Teams on Bureaucratic Productivity (Under of the direction of Dr. CRAIG DEPKEN)

The correlation between state government output and the performance of local sports teams is used to assess the degree and direction of the relationship. The goal is to identify a nationally preferred sport using granular data (state level vs national level) and to determine whether different sports have different effects on state government productivity, e.g. football increases productivity. The methodology for identifying the strength and direction of the relationship analyzes data collectively, using various subsamples, lags, and measures of sports. The findings suggest no clear national trends prevail.

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1. INTRODUCTION

Sports influences society in a myriad of ways. In the United States, major sporting events are the most watched events each year, athletes are some of the most prominent celebrities and the sports industry generates billions of dollars a year. Of interest in this study is the emotional response that sports outcomes elicit from fans. Sentiment analysis studies how human emotions subjectively alter markets and actions. Sports outcomes can lead to stock market movements, changes in tipping behavior, and even gambling. Understanding how specific events affect sentiment and the consequences of those emotional reactions is the first step in anticipating these emotional reactions.

This study is an extension of Coffey, McLaughlin and Tollison (2011), who analyzed the relationship between the Washington Redskins winning percentage and the number of pages in the Federal Register, the daily production of new regulations and regulatory updates. Their goal was to understand how success of the local NFL team influences regulatory output and found a nonspurious and robust positive relationship implying that Washington Redskins success lowers transaction costs for regulators leading to the production of more regulations. The goal of this study is to expand upon their research using state level data to understand if the relationship extends to more homogenous populations of regulators within states. The results suggest that very few statistically significant results exist. This study contributes to the literature on sentiment analysis, regulator behavior, and sports.

Section 2 is the Literature Review which includes a comprehensive description of the Coffey, McLaughlin, and Tollison (2011), an overview of how sports results alter emotions which lead to deviations in normal behavior, and how regulations are made at the federal and state levels and how these processes are susceptible to external influence. Section 3 is a description and analysis of the data utilized. Section 4 provides a short explanation of the panel data methodology utilized and discussion of the empirical results. Section 5 is a summary of the results. The bibliography and appendix follow Section 5, most of the output and images are presented in the appendix.

2. LITERATURE REVIEW

There are three contributing fields of research that comprise the literature review. The first section of the literature review is an extensive summary of the "Regulators and Redskins*"* article by Coffey, McLaughlin and Tollison (2011), which is a primary influence on the current paper. The second section of the literature review is related to sentiment and sports. The final section of the literature review is about how public policy is formed to provide context for how sports might impact regulatory output.

2.1. Regulators and Redskins

This study is an extension of Coffey, McLaughlin, and Tollison (2011). The authors study the relationship between the winning percentages of the Washington Redskins' from 1945 to 2010 and regulatory productivity using the number of pages in the Federal Register. There are two competing hypotheses in this study. The first hypothesis is that the more the Redskins win, the more regulations will be written because of lower transaction costs between regulators. The intuition is that regulators seek more power to improve their own utility which can only be accomplished by working together ("logrolling"). A commonly enjoyed winning team might serve as a lubricant to negotiations that lowers the transaction costs of gaining more power and ultimately improving individual utility. An alternate hypothesis posits that if a robust and nonspurious negative correlation exists, regulators substitute utility from the Redskins for the utility obtained from regulatory power.

Their finding is a nonspurious and robust positive relationship between the number of Federal Register pages and the Redskins winning percentage. Their findings are robust to various tests (Augmented Dickey Fuller and data holdout testing) and a multitude of models using different specifications. The model variations include:

1 Some models use 65 observations of yearly data while other models use 253 observations of quarterly data.

2 The authors use variations of the dependent variable. First, they use the Federal Register pages and second, the Federal Register pages divided by Real GDP (FR Pages/RGDP). The purpose of this was to ensure the results were not spurious by making the dependent variable stationary.

3 To eliminate the potentially confounding factor of politics or the political atmosphere, the authors include one or more of the following variables: cabinet turnover rate, percent of Congress that is Democrat, and whether there is a Democrat president.

4 To evaluate the robustness of results for the Redskins, the authors test the other three professional sports teams in Washington DC: the Capitals (NHL), the Wizards (NBA), and the Nationals (MLB). The results reveal that the Redskins receive consistent results and the Washington Wizards receive a consistently positive correlation with FR Pages/RGDP. The Nationals were formed in 2002 and the results appear positive and statistically significant but ultimately there are not enough observations to make a clear conclusion. Finally, the Capitals have a negative correlation with regulatory output.

The conclusion of the paper is that that the federal government activity, measured by the number of pages in the Federal Register, is positively correlated with the Washington Redskins performance measured by winning percentage. The interpretation of this result is that the transaction costs of creating new regulation is lowered by the Redskins winning.

The results of the "Regulators and Redskins" study inspired the extension studied here: does the result hold for state government regulatory output? The intuition is that the Redskins is a shared amenity that decreases transaction costs when it performs well. However, Washington DC is a city primarily composed of people not native to Washington DC as seen in Table 1[1]. Meaning that federal employees might have a more preferred football team, yet, were still influenced by the performance of the local team.

[1] The information for the tables was generated using the New York Times "Where People in Each State Are Born" article, which uses the University of Minnesota Population Center data. The purpose of the table is to show that despite people living in Washington DC are not from there, the Redskins are still a commonly enjoyed amenity. Since people in other states are more likely to live in their native state the expectation is that the relationship will be stronger and more thoroughly enjoyed.

Thus, the productivity of state government employees will be studied to determine whether the influence of a local professional sports team will be enhanced by the likely fact that the local team is the preferred team for a majority of these regulators.

TABLE 1: Native Rates[2]

1950	
State	**Percentage Native**
Nevada	25%
Washington DC	33%
California*	37%
Wyoming	37%
Arizona*	38%

1960	
State	**Percentage Native**
Nevada	27%
Alaska	32%
Arizona*	36%
Florida*	38%
Washington DC	39%

1970	
State	**Percentage Native**
Nevada	25%
Alaska	33%
Arizona*	37%
Florida*	37%
Wyoming	45%

1980	
State	**Percentage Native**
Nevada	21%
Florida*	31%
Alaska	33%
Arizona*	33%
Washington DC	39%

1990	
State	**Percentage Native**
Nevada	22%
Florida*	30%
Arizona*	34%
Alaska	35%
Washington DC	40%

2000	
State	**Percentage Native**
Nevada	21%
Florida*	33%
Arizona*	34%
Alaska	38%
Washington DC	39%

2012	
State	**Percentage Native**
Nevada	25%
Florida*	36%
Washington DC	37%
Arizona*	38%
Wyoming	40%

[2] The states with asterisks indicate they are included in the study.

The extension of the research conducted by Coffey, McLaughlin and Tollison (2011) is related to their findings from testing the three other professional sports teams in Washington DC. When using state level data and panel data methodology, do individual states have a preferred sport or sports team that will most significantly impact their government productivity? Various professional teams will be included to see if there is a preferred team or sport in each state. Additionally, using the state level data and random effects, there will be an attempt to determine whether there is a nationally preferred sport.

2.2. Sentiment and Sports

Sports is a well-documented subject in social sciences (specifically economics and psychology) because of its prevalence and how sport results alter mood and the ramifications of those mood changes. Sports fans are susceptible to the success or failure of their preferred team because of their emotional attachment to the team. Furthermore, the population in general can also have a reaction to a sports outcome as many people watch major sports events for social reasons. TABLE 2[3] reports the viewership of recent major sporting events. Based on the number of viewers for each sporting event, it is plausible that a sports outcome might sway the general sentiment of the nation or stock market. Ge (2017) finds that unexpected close wins increase tipping behavior more than unconditional wins or wins with larger margins using New York Knicks and Taxi and Limousine Commission of New York City data. Ge also finds that the similar effects do not occur after unexpected losses. Otto, Fleming and Glimcher (2016) describe how unexpected positive outcomes lead to more risk seeking behavior. Specifically, if a team losses a series of games then wins a game or if there is a sunny day after consecutive rainy days, people in New York City are more likely to buy lottery tickets. These unexpected but incidental positive outcomes are called "positive prediction error". Coates and Humphreys (2002) study sports outcomes and whether they impact real per capita income. They find that cities with professional sports teams that participate in the post season from 1969 to 1997 have no association with a change in real per capita income, but that

[3] Five different sources were used to generate the metrics for this table. Those specific sources provide ratings information for the events above. Specific URLs can be seen in the References section, Table 21. The sources include: Variety.com, Sportsmediawatch.com, npr.org, usatoday.com and fortune.com

the home of the Super Bowl Champion experiences an increase in real per capita personal income by approximately $140, attributed to a productivity increase.

TABLE 2: Television Viewership

Year	Event	Viewership	Us Population by Year	Viewership Percentage of US Population
2017	Super Bowl	111.3 Million	324.5 Million	34.30%
2018	Super Bowl	103.4 Million	326.8 Million	31.64%
2018	NFL AFC Division Championship	44.1 Million	326.8 Million	13.49%
2018	NFL NFC Division Championship	42.8 Million	326.8 Million	13.10%
2018	College Football Championship	28.4 Million	326.8 Million	8.69%
2016	2016 Summer Olympics	25.4 Million/Night in Primetime	322.2 Million	7.88%
2018	2018 Winter Olympics	19.8 Million/Night	326.8 Million	6.06%
2018	Masters Tournament (Golf)	13 Million	326.8 Million	3.98%

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Edmans, Garcia and Norli (2007) investigate stock market reactions to soccer outcomes. They find a significant market decline after soccer losses. Specifically, World Cup eliminations lead to a next day abnormal stock return of -49 basis points. The effect of a loss is stronger in small stocks and for important games. They use 39 countries and find the stock market drop is statistically significant and is robust to methodological changes and is significant even when they control for the pregame expected outcome. When they study other sports, such as international basketball and cricket, the loss effect is present but smaller than soccer. These findings are supported by Shao-Chi (2012) who studies the impact of NFL game outcomes on the stock returns of NASDAQ companies headquartered near the teams. The authors focus on the NFL because the sport is overwhelmingly more popular relative to other American sports. They find that firms headquartered near losing NFL teams had significantly lower next day returns

than firms located near winning teams. Additionally, they study the magnitude of the loss and find that the next day return is worse when the loss is unexpected or occurs in a critical game.

These articles provide evidence that sports can influence sentiment which has repercussions in the stock market, workplace productivity, and risk-seeking behavior. Winning encourages risk-seeking behavior (after unexpected wins) and increased productivity (after Super Bowl Championships). They also show how losses in international sports negatively impact stock markets.

2.3. Policy and Bureaucratic Production

Incentives are inherent in all jobs but vary by field, industry, role, etc. However, public positions face a different set of incentives and outcomes than in private industry. McLaughlin and Ellig (2011, 2010) have multiple papers on the quality of 2008 regulations. Their first paper in 2011 uses a panel of experts to qualitatively evaluate 45 economically significant regulations[4]. The panel of experts assessed designated regulations in teams by assigning a score between 0 and 20 for each the following criteria: the accuracy of the analysis (cost-benefit analysis, outcomes and externalities, environmental impacts, etc.), the openness and availability of analysis, and the use of the analysis in creating the regulation. Each regulation received a score between 0 and 60. The average and median score of these regulations is 27. However, the scores of regulations are disparate, the lowest score a single regulation received is a 7, whereas the highest score is a 43.

Their second paper uses the panel ratings from their first paper to analyze whether "midnight regulations" or "transfer regulations" are viewed different than other regulations. Midnight regulations are those passed during a President's "lame duck" period, defined as after June 1, 2008 in this study. The specific date is chosen because the George W. Bush administration stipulated that for regulations to be finalized during the administration should be proposed no later than June 1, 2008; anything proposed after

[4] The Office of Information and Regulatory Affairs defines economically significant regulations likely to have an annual effect on the economy of $100 million or more, adversely affect the economy in a material way, or disrupt a sector or economic measurement in a meaningful way. These regulations require additional considerations.

this date might be considered a rushed regulation and midnight. Transfer regulations are those that stipulate how a federal agency will spend or collect money. The theory behind any lower scores associated with these two types of regulations is the incentives created by the election cycle. They find that both types of regulations receive less time being reviewed and they receive below average grades; specifically, the average score for midnight regulations is 19% below the sample average and for transfer regulations is 60% below the sample average. The works of McLaughlin and Ellig, specifically the second article, show the quality of regulation can vary, due to external influences, and might specifically be the result of logrolling.

Jefferey Cohen (1986) writes about regulator incentives, specifically a two-part theory for why active regulators might be supportive of the industry they are regulating. The first part of the *Revolving Door* theory is the entrance side, which states that regulators with prior employment in the regulated industry will be more supportive of the industry than those without industry experience. The exit side theorizes that regulators considering a future job in the industry they are currently regulating have incentivize to support the industry by promoting fewer regulations. Using the FCC as a case study, Cohen finds that those with prior experience in the communications industry (i.e. TV and radio) are 14% more supportive of the industry than those without experience. He also finds that those who secured industry broadcast jobs were less supportive of the industry. The mixed results are limited to the FCC and may not extend to other industries.

Gerber and Teske (2000) summarize our understanding of how regulations are formed. They explain that state level regulation is affected by many actors (such as Congress, the President, the courts, and interest groups) and incentives for the actors. They explain the dynamics of the actors and their incentives by reviewing three non-mutually exclusive frameworks for state level regulatory policy process. The first is the principal-agent theory, as applied by Moe (1984). This model has become the most dominant theory with a multitude of quantitative and qualitative studies employing this framework. The theory explicates the critical elements of delegation relationships such as those that exist in a bureaucratic system. The

delegation relationship can take many forms, such as the state legislature serving as the principal, the state legislature serving simultaneously as the principal and agent of the Federal Congress, governor as principal, bureaucracies as independent agents, and other variations. When this framework is employed in a study or tested directly, the results vary based on the specific version of the framework being studied. When the state legislature serves as the principal, the results are mixed based on factors such as: the degree of professionalism in the state legislature, if there were multiple principals in the study, and the House's majority party. The influence of the state legislature appears to be present, but the significance varies. When the governor serves as the principal, the results appear minimal despite the President having significant influence on regulation at the Federal level. Gubernatorial power was generally evident, but not regarding regulation; this is attributed to prioritizing prominent state issues over trying to sway regulatory influence.

The second framework is Gormley's (1983) Salience-Complexity model, which explains when different sets of actors influence state regulation based on the salience and complexity of the issue at hand. This model differs from the Principal-Agent model previously described because it is more inductive, explaining why the regulators will act the way they do, rather than deductive, explaining why the regulators acted the way in which they did. Figure 1 depicts this framework below. The horizontal axis represents the complexity of the regulated area, more simple or common problems being on the left, and more complicated, unique, or technical problems are on the right. The vertical axis represents the salience or popularity of the issue, at the bottom of the chart are less popular or public and at the top of the chart are more public issues. The top left corner cell is dubbed "the hearing room" because areas of regulation that fall into this area are highly salient with low complexity which means many actors (interest groups, politicians, bureaucrats, and others) will try to influence the regulations. The high complexity - high salient cell is called the "Operating Room" because this requires high level bureaucrats with expertise. The low complexity - low salience cell is the "street level" cell because this generally

involves standard operating procedures of low-level bureaucrats. The final cell is referred to as the "Boardroom" since business usually influences these regulations and regulators.

		Complexity	
		Low	High
Salience	High	"Hearing Room" Many actors will contribute 1) Consumer Protection 2) Zoning	"Operating Room" 1) Environment and Hazardous Waste 2) OSHA/Worker's Compensation 3) Energy
	Low	"Street Level" 1) Occupational Regulation 2) Liquor Licensing 3) Auto Dealers	"Boardroom" 1) Hospital/Health 2)Banking 3) Telecommunications 4)Insurance

FIGURE 1: Gormley's Salience-Complexity Model

The final framework is Lowry's (1992) Vertical and Horizontal dimensions framework which stems from the theory that "state regulatory behavior is most significantly affected by two intersecting dimensions of federalism."[5] The horizontal dimension is the interstate competition for policy and the vertical dimension is the degree of federal government involvement in a policy. The measurement of each dimension is considered continuous and creates an XY plane rather than a dichotomous matrix such as Gormley. The horizontal dimension refers primarily to the competition between states over economic resources.

The three frameworks provide perspective about the numerous factors that impact the production of regulation and an idea for how sports might impact bureaucratic productivity. It is apparent that for regulation to occur a specific agency and level (federal, state, or local) must be given the right to create it.

[5] Gerber and Teske, page 870

Sports might sway the negotiation or discussion to either ease negotiations and allow for expansion of power (rent seeking) or provide a substitute for the pursuit of regulatory power.

3. DATA

3.1. Data Selection Process

There are a total of 25 states utilized in this study; while all states are required to produce a version of their state register, only some were able to be included in this study for a variety of reasons including: data had to be purchased, no digital version of the state register existed, or the format of the state register was too drastically different from the other state registers and the National Register. Table 3 reports the states in the study, with additional information about the state's register. Table 4 lists the states not included in this study and details explaining their exclusions. Fourteen of the 25 states are designated as "Sports States" while 11 are designated as "Control States". A state is designated a sports state if it has at least two teams from the four following professional leagues: NFL, NBA, NHL, and MLB; in Tables 3 and 4, the states in bold are sports states. Each state has a major Division 1 College Football program included in their respective sports teams. In each of the tables below the bold states are, or would be, sports states.

TABLE 3: States in the Study

State	Capital	First Year of State Register Data	Final Year of State Register Data	Total Years	Comments on Data and Inclusion of Data
Arizona	Phoenix	1995	2015	21	
California	Sacramento	2002	2015	14	
Delaware	Dover	1998	2015	18	1998-2015 with no sports. Official documents runs July to June but the data runs January to December
Florida	Tallahassee	1999	2015	17	1999-2015 is valid. More years are available but only in print from back to 1975.
Idaho	Boise	2008	2015	8	
Illinois	Springfield	2002	2015	14	More years available in print.
Iowa	Des Moines	1997	2015	19	
Kansas	Topeka	1982	2015	34	
Louisiana	Baton Rouge	1975	2015	41	
Michigan	Lansing	2001	2015	15	
Minnesota	Saint Paul	1998	2015	18	
Missouri	Jefferson City	1999	2015	17	
Montana	Helena	2000	2015	16	
New Jersey	Trenton	1970	1994	25	1979-1994 is available, the rest must be purchased.
New Mexico	Santa Fe	2001	2015	15	
North Carolina	Raleigh	1987	2015	29	The official version has the year for July to June, however, for the data it is using January-December.
Oregon	Salem	2003	2015	13	
Pennsylvania	Harrisburg	1972	2015	44	They emailed all state register information.
South Carolina	Columbia	2000	2015	16	Lack of sports but considerable amount of state register data.
South Dakota	Pierre	2002	2015	14	
Texas	Austin	1976	2015	40	
Utah	Salt Lake City	1998	2015	18	
Virginia	Richmond	1985	2015	31	
West Virginia	Charleston	1986	2013	28	1986-2013 are consistent, it changes in format after 2013.
Wisconsin	Madison	1996	2014	19	1996-2014 are consistent, it changed format in 2015

States in Bold are designated as sports states.

TABLE 4: States Not Included in Study

State	Capital	Comments on Data and Inclusion of Data	Sports Teams for Consideration
Alabama	Montgomery	Register is available each month and each year beginning in 2007 but no print version is available and the form is links to pdfs. So unless we open each pdf and count the pages we cannot know. Just opening the links to the monthly register would be 12 months for 8 years and each register has approximately 30 pdf links in it.	University of Alabama, Auburn University
Alaska	Juneau	Not part of the continental 48- Not a good fit.	
Arkansas	Little Rock	Not enough data available to use.	University of Arkansas
Colorado	Denver	They have a version on LexisNexis, an unofficial print. Maybe more years there. Only PDF versions from April 2014 to present.	Avalanche, Rockies, Broncos, Nuggets, University of Colorado Boulder
Connecticut	Hartford	Incompatible formatting.	University of Connecticut (Uconn Huskies)
Georgia	Atlanta	Must be paid for.	Falcons, Hawks, Braves
Hawaii	Honolulu	Not part of the continental 48 states. - Could not find	
Indiana	Indiannapolis	Format is not reasonable for this. Information is available online.	Colts, Pacers Indiana University, Purdue
Kentucky	Frankfort	Incompatible formatting.	University of Kentucky
Maine	Augusta	Must be paid for.	
Maryland	Annapolis	Information can only be received via request.	Orioles, Ravens, University of Maryland
Massachusets	Boston	Must be paid for.	Bruins, Celtics, Red Sox, Patriots, Boston College
Mississippi	Jackson	Requested information. Did not receive.	Ole Miss, Mississippi State
Nebraska	Lincoln	Formatting was inconsistent	Nebraska
Nevada	Carson City	Attempted to contact. No information provided.	
New Hampshire	Concord	Published weekly and pages are Not cummulative. Not feasible to count.	
New York	Albany	Incompatible formatting.	Knicks, Nets, Rangers, Islanders, Sabres, Jets, Giants, Bills, Yankees, Mets
North Dakota	Bismark	Will have to order information or request it. Did not request information. - Only an Administrative Code	
Ohio	Columbus	Incompatible formatting.	Indians, Reds, Browns, Bengals, Cavaliers, Blue Jackets
Oklahoma	Oklahoma City	Incompatible formatting.	Thunder, University of Oklahoma, Oklahoma State
Rhode Island	Providence	Online Database, formatting not consistent with a state register	
Tennessee	Nashville	Incompatible formatting.	Titans, Grizzlies, Predators, Vanderbilt, University of Tennessee
Vermont	Montpelier	Must be paid for.	
Washington	Olympia	Format change in 2005, any not enough information before that to use.	Mariners, Seahawks, University of Washington, Washington State
Wyoming	Cheyenne	Only upon request and not a good format. Just an active list of rules.	

States in Bold are designated as sports states.

TABLE 5: Breakdown of States Included & Excluded

Segment	Included in the Study	Excluded from the Study	Segment Percentage of total Population	% Included in the Study
Sports State	14	9	47.92%	60.87%
Control State	11	14	52.08%	44.00%

TABLE 5 provides context of the states that are included and excluded: 23 of the 48 continental states are sports states whereas 25 are control states.

Beyond the missing states, another issue is that the states included in this study do not reflect the entire U.S. Sports states make up approximately 48% of the continental United States (23 states of 48 continental US states) compared to Control states making up approximately 52% as seen above in Table 5. Yet, Control states represent only 44% of the data in this study (measured by states in the study). The slant is worse when comparing observations as seen in Table 8: State Registers by Year and Segment. This issue of data composition by groups is further described below.

The following states were excluded from the study for a variety of reasons including the registers needing to be purchased or improper formatting. These excluded states are worth mentioning because they are the states most similar to Washington DC and would have provided the most similar comparison to Washington DC because their capitals are also the homes to their sports teams. For many states in the study, the capital is not the home of the sports teams, which might affect how influential the sports teams are on the bureaucrats since the teams are not local.

1. Colorado: The capital for Colorado is Denver, which is also the home of all the four major sports teams in the state. This would have provided a very similar situation to Washington DC in the "Regulators and Redskins" study and could have provided a more direct comparison.
2. Georgia: Like Colorado, the capital Atlanta is home to all three professional sports teams in the state. This would have provided another similar situation to Washington DC in the "Regulators and Redskins" study.
3. Massachusetts: Boston is the capital of Massachusetts and home of the professional sports teams and many college teams. This would have provided additional geographic diversity.
4. Ohio: The capital, Columbus, is the home of only an NHL team. It is also home of the very successful college football team Ohio State. The other professional sports teams are split between Cleveland and Cincinnati. This state would have provided some contrast to the above.

5. Northeast- Maine, New Hampshire, Rhode Island and Vermont are all control states in the northeast that would have provided some regional context. There would likely have been a lot of overlap with the teams for these states.
6. Southeast: Alabama, Arkansas, Mississippi, Georgia, and Tennessee are a mix of sports and control states that would have provided regional diversity.

The full list of states, their designations, and the teams for each state can be seen below Table 6. The states that are bold are the sports states and the teams that are bolded and italicized indicate a reasonable alternative team in the state exists. For example, in California for football, instead of the San Diego Chargers, the San Francisco 49ers or the Oakland Raiders could have been used. It can be seen that there are many alternative models that could have been used. To determine which sports teams would be used in the final model, I use the list of most popular teams by state and sports league (MLB, NHL, etc.) from ticket vendor VividSeats.com. VividSeats.com uses the billing state for all ticket orders to form its lists. Whereas purchasing a ticket is truly an expression of fandom or interest and likely better captures the interests of the older population who can "vote with their wallet."

TABLE 6: States and Their Teams

State	Pro Football Team	Pro Basketball	Pro Baseball	Pro Hockey	College Football
Arizona	Arizona Cardinals	Phoenix Suns	Arizona Diamondbacks	Arizona Coyotes	Arizona State Sun Devils
California	San Diego Chargers	Los Angeles Lakers	Los Angeles Dodgers	Los Angeles Kings	USC Trojans
Delaware	Philadelphia Eagles	Philadelphia 76ers	Philadelphia Phillies	Philadelphia Flyers	Temple Owls
Florida	Tampa Bay Buccaneers	Miami Heat	Florida Marlins	Florida Panthers	Florida Gators
Idaho	Seattle Seahawks	Utah Jazz	Seattle Mariners	Los Angeles Kings	BYU Cougars
Illinois	Chicago Bears	Chicago Bulls	Chicago Cubs	Chicago Blackhawks	Missouri Tigers
Iowa	Kansas City Chiefs	Chicago Bulls	Chicago Cubs	Chicago Blackhawks	Iowa State Hawkeyes
Kansas	Kansas City Chiefs	Dallas Mavericks	Kansas Royals	Colorado Avalanche	Kansas State Wildcat
Louisiana	New Orleans Saints	New Orleans Pelicans	Houston Astros	Dallas Stars	LSU Tigers
Michigan	Detroit Lions	Detroit Pistons	Detroit Tigers	Detroit Red Wings	Michigan State Spartans
Minnesota	Minnesota Vikings	Minnesota Timberwolves	Minnesota Twins	Minnesota Wild	Minnesota Gophers
Missouri	Kansas City Chiefs	Oklahoma City Thunder	St. Louis Cardinals	St. Louis Blues	Missouri Tigers
Montana	Seattle Seahawks	Utah Jazz	Seattle Mariners	Colorado Avalanche	Notre Dame Fighting Irish
New Jersey	New York Giants	New Jersey Nets	New York Yankees	New Jersey Devils	Rutgers Scarlet Knights
New Mexico	Dallas Cowboys	Denver Nuggets	Texas Rangers	Colorado Avalanche	Texas Tech Red Raiders
North Carolina	Carolina Panthers	Charlotte Hornets	Atlanta Braves	Carolina Hurricanes	South Carolina Gamecocks
Oregon	Seattle Seahawks	Portland Trailblazers	Seattle Mariners	Vancouver Canucks	Oregon Ducks
Pennsylvania	Philadelphia Eagles	Philadelphia 76ers	Pittsburgh Pirates	Philadelphia Flyers	Penn State Nittany Lions
South Carolina	Carolina Panthers	Charlotte Hornets	Atlanta Braves	Carolina Hurricanes	South Carolina Gamecocks
South Dakota	Minnesota Vikings	Minnesota Timberwolves	Minnesota Twins	Minnesota Wild	Nebraska Cornhuskers
Texas	Dallas Cowboys	Houston Rockets	Texas Rangers	Dallas Stars	Texas Tech Red Raiders
Utah	Denver Broncos	Utah Jazz	Los Angeles Dodgers	Colorado Avalanche	BYU Cougars
Virginia	Washington Redskins	Washington Wizards	Washington Nationals	Washington Capitals	Virginia Cavaliers
West Virginia	Pittsburgh Steelers	Cleveland Cavaliers	Pittsburgh Pirates	Pittsburgh Penguins	West Virginia Mountaineers
Wisconsin	Green Bay Packers	Milwaukee Bucks	Milwaukee Brewers	Minnesota Wild	Wisconsin Badgers

States that are included in the study: Bold states are "Sports States" and the remainder are "Control States". The teams underlined indicate an alternative team could be used.

3.2. Dependent Variable Analysis: State Register Pages

The source of the State Register data differs by state. Primarily, the digital State Registers could be found on a government website, generally under the supervision of the Secretary of State. Additional information on the source of the state information can be found in Table 3. It is important to note the structural differences in the State Registers. There is a general structure to the Registers with specific information required to be presented in the document to be included in this study. However, the format of the data and the decision to include other sections is subject to the discretion of the state. State Registers that subjectively appeared to be substantially different were not included in this study. Substantially different formats include:

1. Rather than a detailed document, a table was presented of regulations and notices with a hyperlink to more details.
2. An Internet webpage that describes important notices and encourages readers to visit the specific regulators website for more information or further details.
3. A series of weblinks that each had different information about the same content, however, it could not lead to a conclusive page count because of different formats in the hyperlinks and a multitude or redundant content.

State Registers that were included in this study are in PDF format for simple and objective page counts and had generally similar formats based on subjective perspective. The states that were selected for this study might differ in format between the states but were individually consistent across the years.

Regarding the states that were selected for this study they are representative and diverse in state qualities such as population, land size, region, industries, political preferences, etc. This diversity, is described in the "State Profiles" Appendix. Additional examination of selection bias is provided in sections 5.1, 5.2 and 6.1.

Outside of the format and availability of the State Registers, other data limitations exist. Another look at Table 3 shows that the number of years and the years themselves vary among states making the dataset unbalanced. Specifically, New Jersey has 24 years of data from 1970 to 1994, North Carolina has 28 years of data from 1987 to 2015, and Idaho has 7 years of data from 2008 to 2015. Table 8 provides a summary of the observations by year and shows how availability of data is limited. The data utilized here is significantly shorter than the Regulators and Redskins study which uses data from 1945 to 2010, 65 years of data.

TABLE 7: State Registers by Year and Segment

Year	Segment	XXX0	XXX1	XXX2	XXX3	XXX4	XXX5	XXX6	XXX7	XXX8	XXX9
1970's	All States	1	1	2	2	2	3	4	4	4	4
	Sports States	1	1	2	2	2	3	4	4	4	4
	Control States	0	0	0	0	0	0	0	0	0	0
1980's	All States	4	4	5	5	5	6	7	8	8	8
	Sports States	4	4	5	5	5	5	5	6	6	6
	Control States	0	0	0	0	0	1	2	2	2	2
1990's	All States	8	8	8	8	8	8	9	10	13	15
	Sports States	6	6	6	6	6	6	7	7	8	10
	Control States	2	2	2	2	2	2	2	3	5	5
2000's	All States	17	19	22	23	23	23	23	23	24	24
	Sports States	10	11	13	13	13	13	13	13	13	13
	Control States	7	8	9	10	10	10	10	10	11	11
2010's	All States	24	24	24	24	23	22				
	Sports States	13	13	13	13	13	12				
	Control States	11	11	11	11	10	10				

Segment	Total Observations	% of Total	Average Number of Years per Observation
All	544		
Sports	348	63.97%	23.86
Control	196	36.03%	16.82

The average number of Years per Observation was calculated using data from Table 3.

As shown in the above summary table, sports states represent a significant majority of the observations in the study as a result of sports states outnumbering control states 14 to 11 and the average number of years per state being greater than control states. This disparity in the data may reflect a fundamental differences such as sports states have larger populations which require larger or more active governments.

An additional limitation of the study is the structural timing of the sports seasons. College Football and the NFL start in August and September, respectively, with championships occurring in January and February of the following year. The NBA and NHL start in late fall and have championships occur in early summer of the following year. Baseball is the only sport that occurs entirely in the same calendar year; starting in spring and ending in late fall. However, the state register pages are measured by

total pages produced from January to December. Thus, different models are estimated using multiple time periods of the sports variables. The time structures for each sport are reported in Table 9:

TABLE 8: Timing of Sports Seasons and Registers

Data	Data Years	Year Example	Year Selected
State Register Pages	January - December, same year	January 2016 to December 2016	2016
NFL	Regular Season: Fall to December Post Season: December to February depending on round eleminated (or championship)	Fall 2016 to December 2016/January 2017/February 2017 Depending on post season results	2016
NBA	Regular Season: Fall (October) to Spring (April) the following year Post Season: April to late June depending on round eliminated (or championship)	October 2015 to April/May/June2016	2016
NHL	Regular Season: Fall (October) to Spring (April) the following year Post Season: April to mid June depending on round eliminated (or championship)	October 2015 to April/May/June2016	2016
MLB	Spring to October same year including finals	April 2016 to October 2016	2016
College Football	Regular Season: Fall (August or September) to late fall (November or early December) Bowl Season occurs from mid December to late January depending on bowl game	August 2016 to December 2016/January 2017	2016

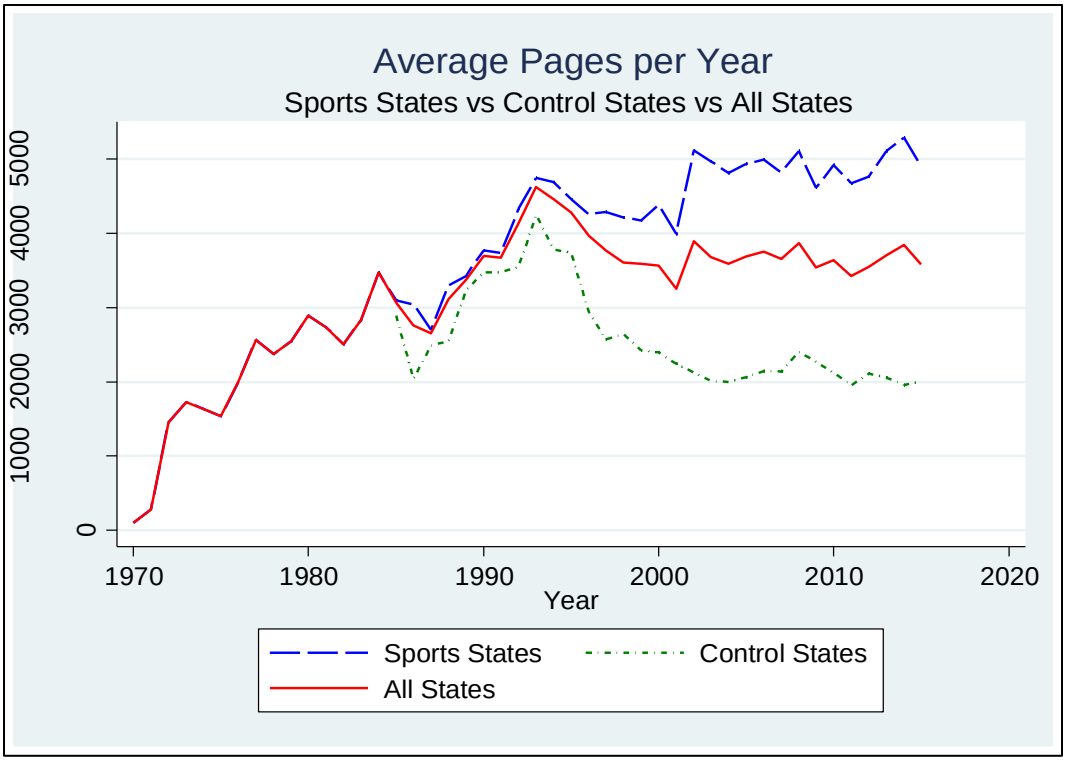

FIGURE 2: Average pages per Year by Segment

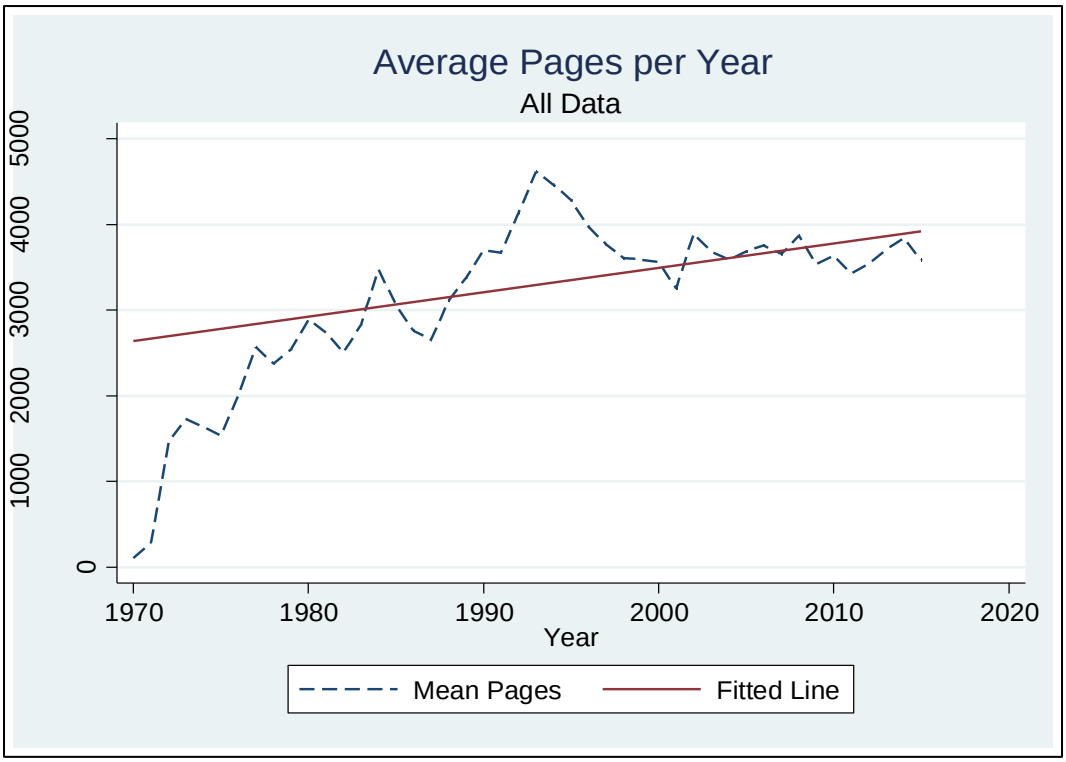

FIGURE 3: Average Pages per Year - All Data

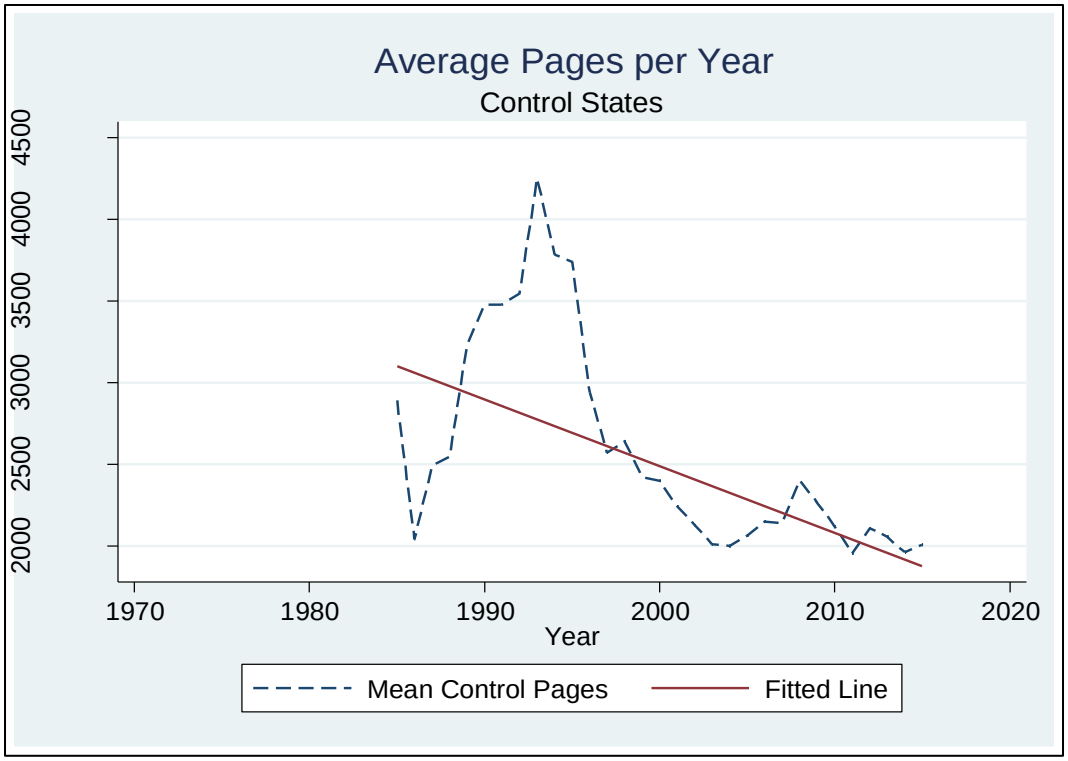

FIGURE 4: Average Pages per Year -Control States

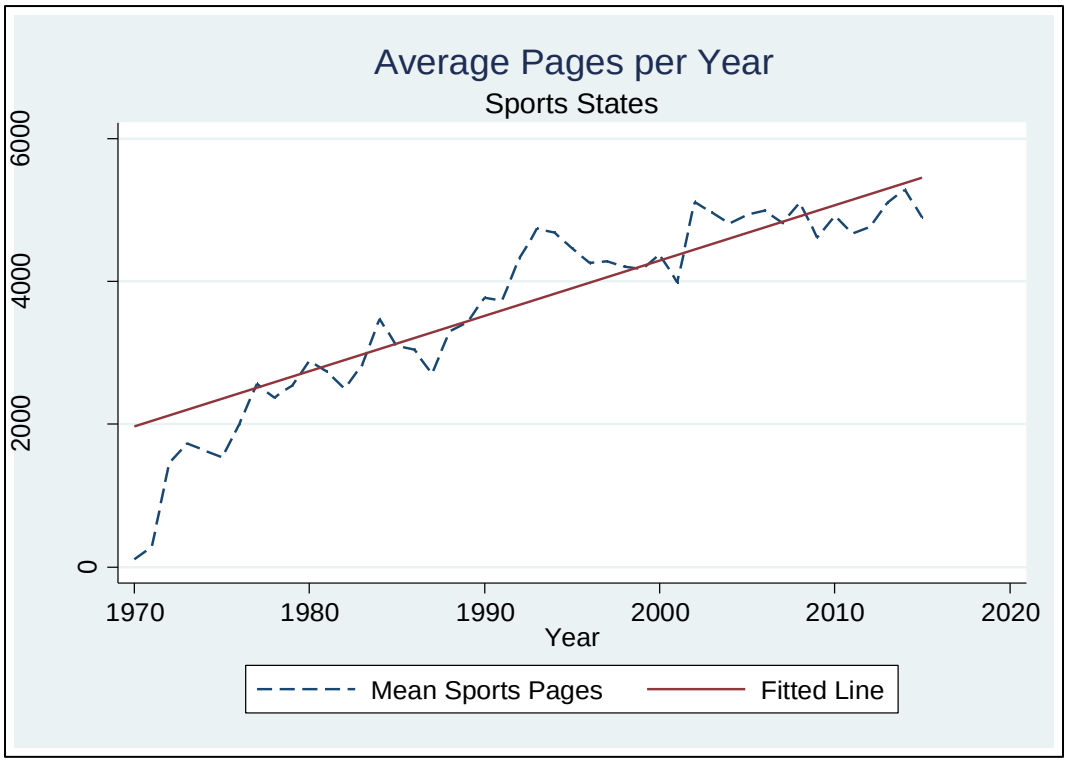

FIGURE 5: Average Pages per Year –Sports States

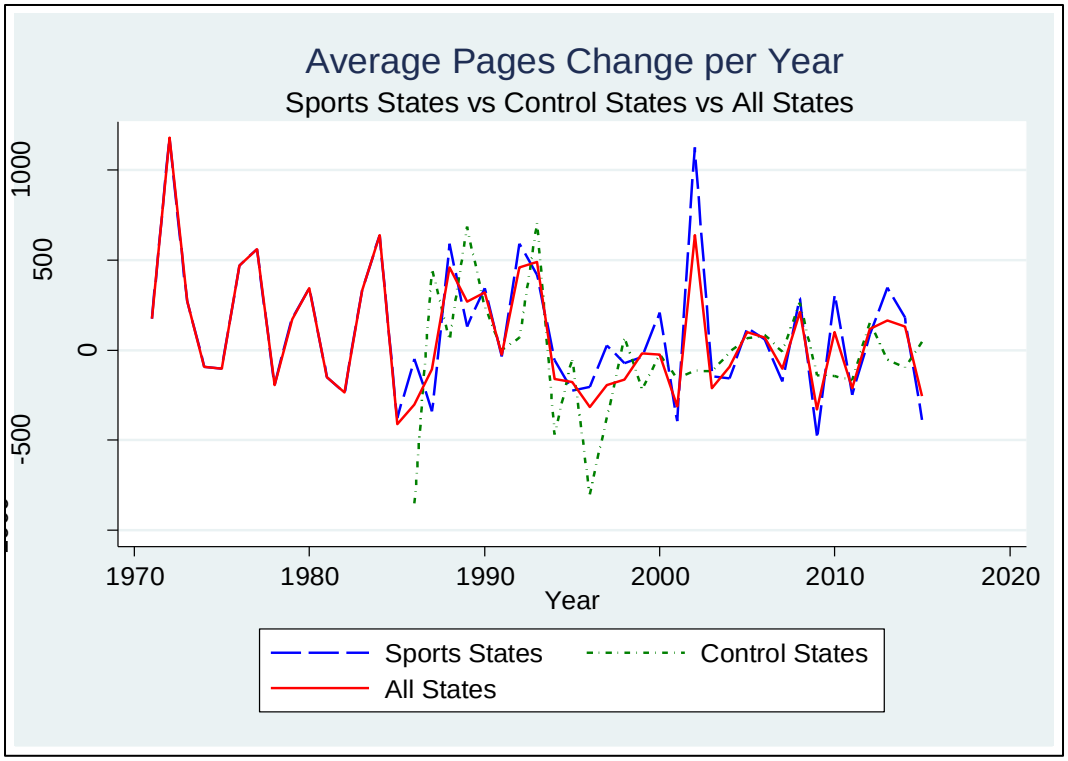

FIGURE 6: Average Pages Change per Year by Segment

Figures 2-6 depict state register pages, in various ways. Figure 2 shows the average number of pages all states in the dataset produced each year (red solid) vs the average number of pages all sports states produced each year (blue dashes) vs the number of pages all control states produced each year (green dotted). The first observation is that sports states consistently produce substantially more pages than control states. Looking at Figure 3, there is a consistent increase in the data as shown by the fitted line. Figure 4 shows that in the control states there was a steep decrease in pages. Sports states consistently produced more pages and had steady increases over time. The consistently higher level of state register pages produced and annual increases by sports states can be attributed to the fundamental differences between the sports states and control states. States that attract multiple professional sports teams have a higher population, likely have more industry and might have more regulation or have more regulators.

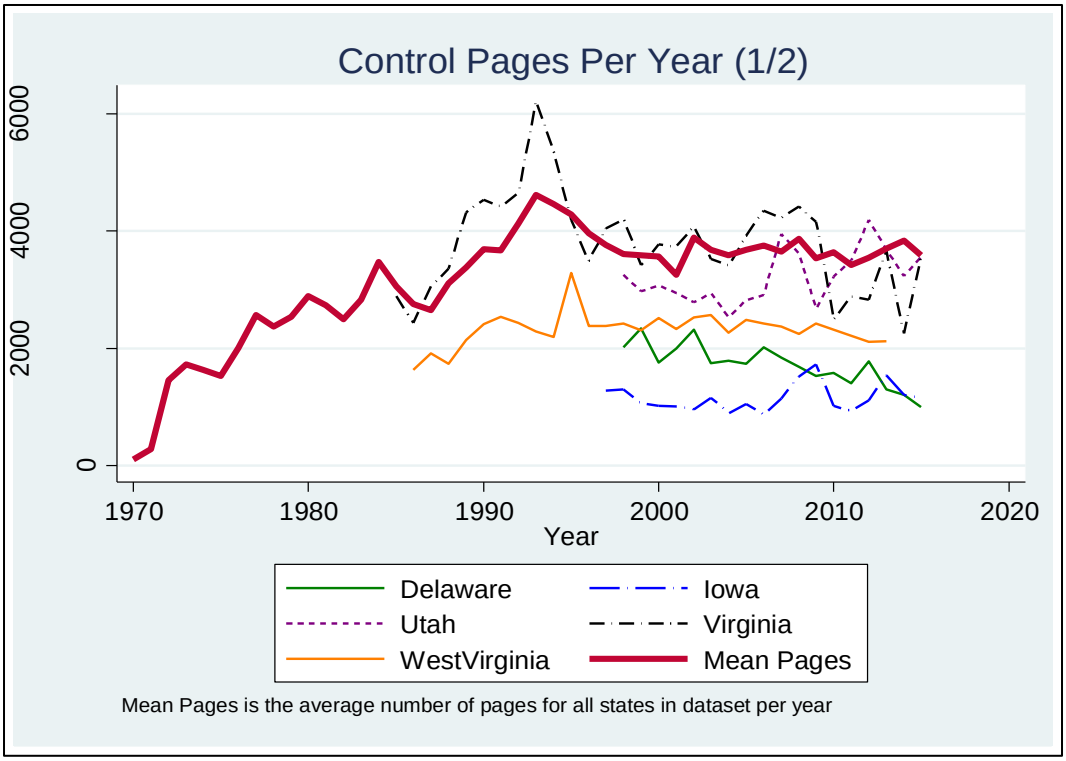

FIGURE 7: Control Pages per Year (1/2)

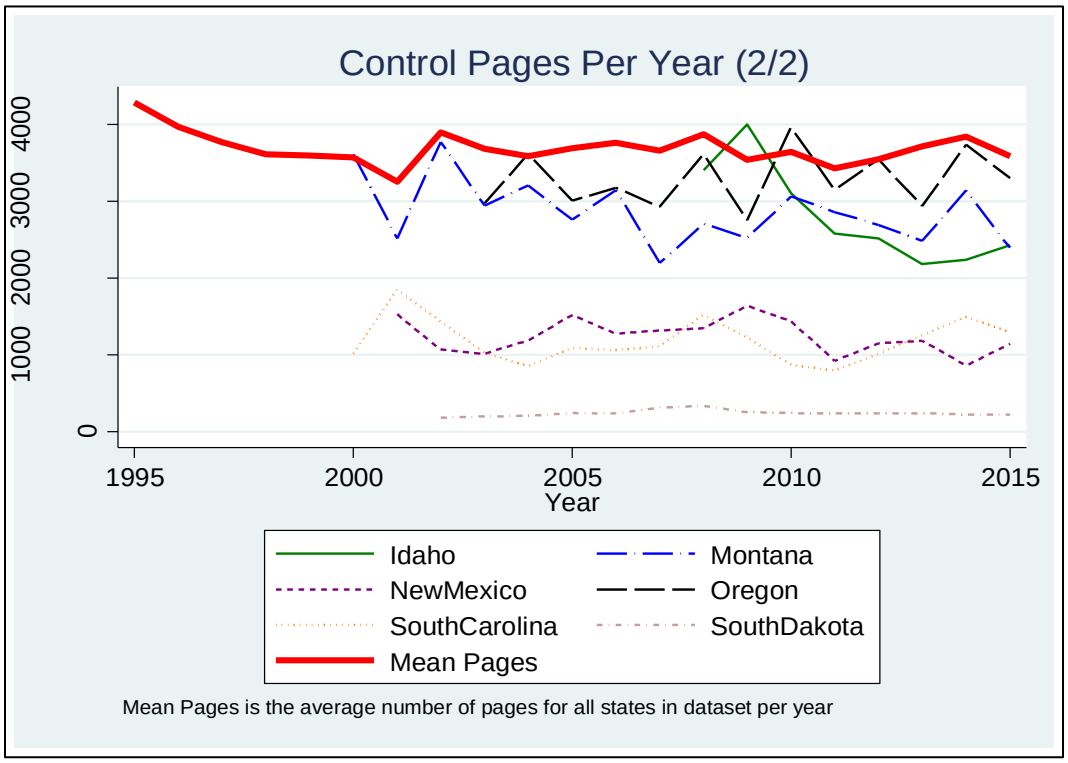

FIGURE 8: Control Pages per Year (2/2)

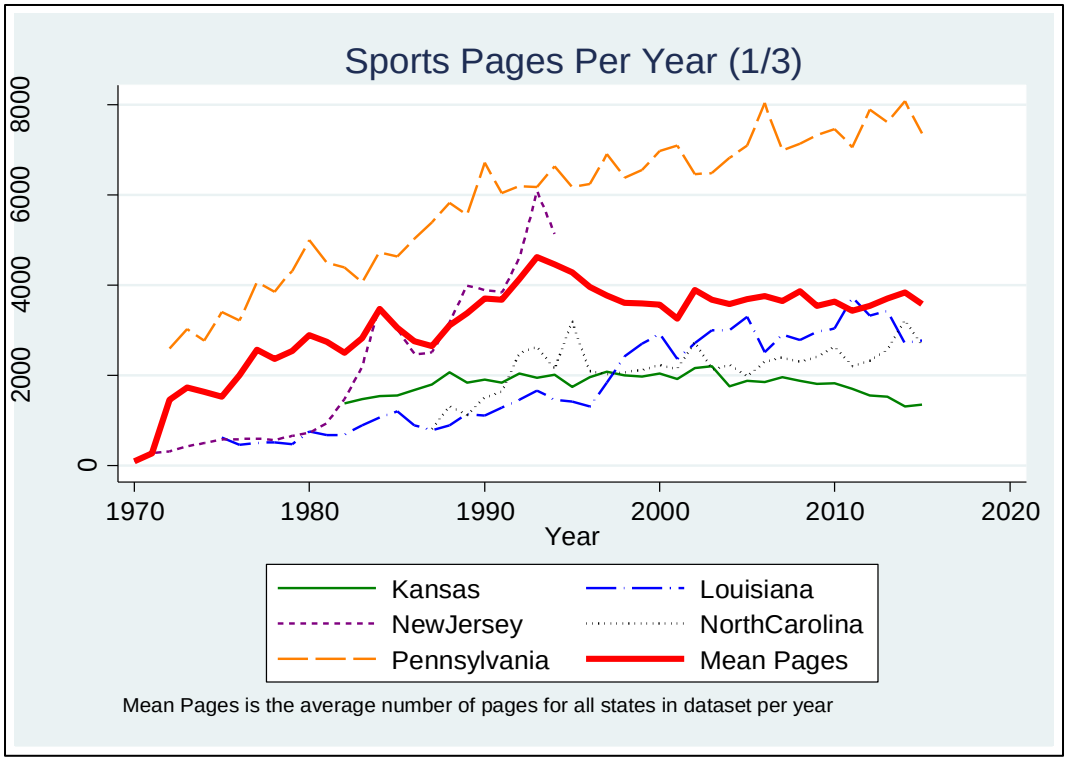

FIGURE 9: Sports Pages per Year (1/3)

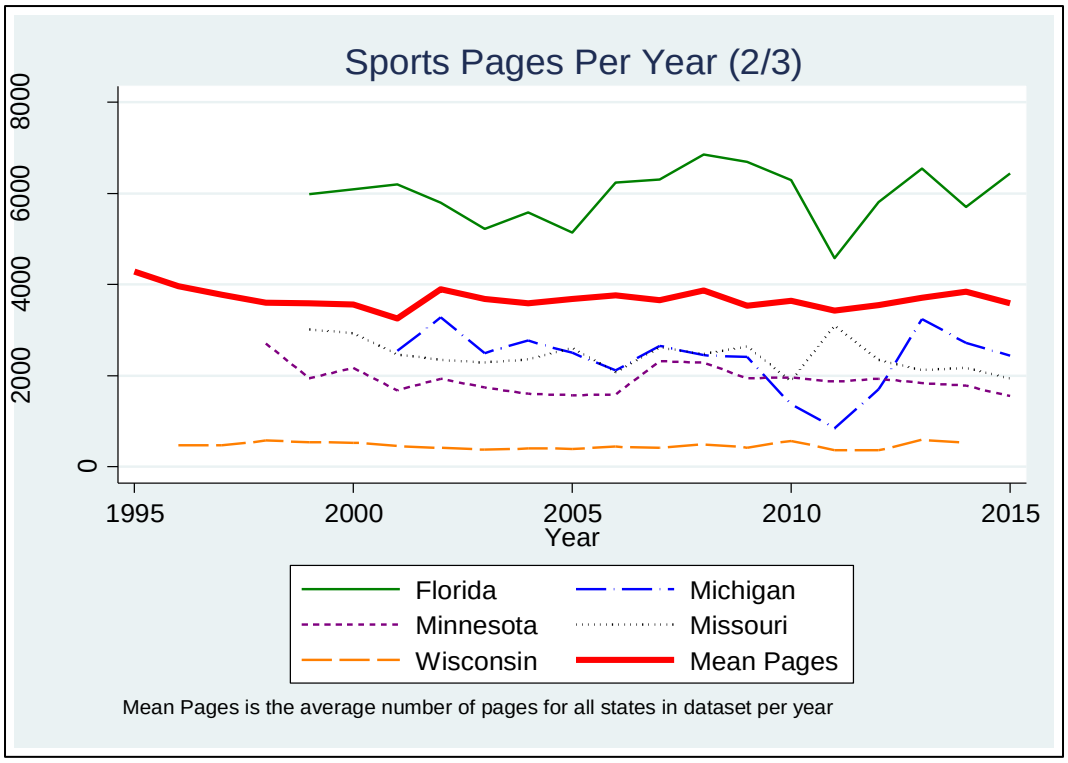

FIGURE 10: Sports Pages per Year (2/3)

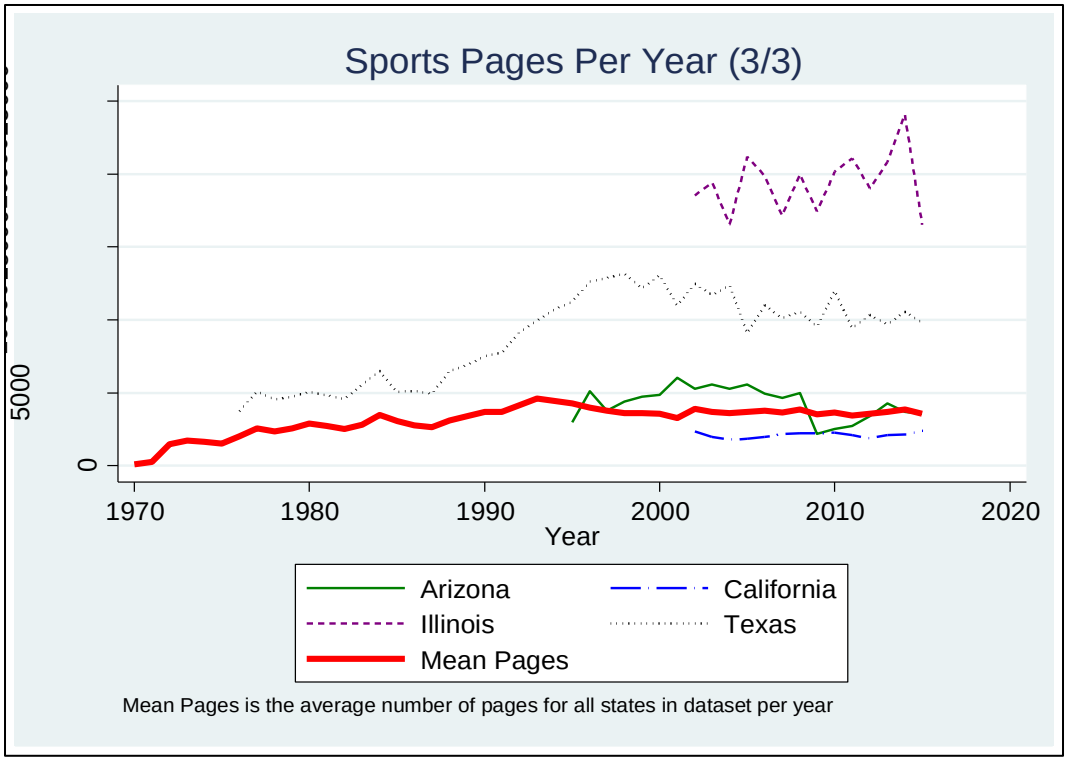

FIGURE 11: Sports Pages per Year (3/3)

Figures 7-11 depict the total pages produced by each state vs the mean number of pages produced by all states in the dataset by year. The contortion of the Mean Pages line reveals how different all of the states are. The states are on different levels, some are constant, and some experience significant volatility or level changes in pages each year. The reason for the different levels might be attributed to the fundamental differences in states such as political leaning (conservative vs liberal), industries (e.g. oil/energy and finance might be highly regulated whereas tourism might be less regulated), and demographics. The larger page fluctuations can be attributed to the changes that states encountered over the years such as complications in finance resulting in more regulation, political preference changes, the natural increase of more dense and complicated regulations, and randomness. It can be seen that a vast majority of the states experienced increases from first year to last year. Using Pages as the dependent variable is not ideal due to the issues of stationarity, as seen above, and normality, as seen below.

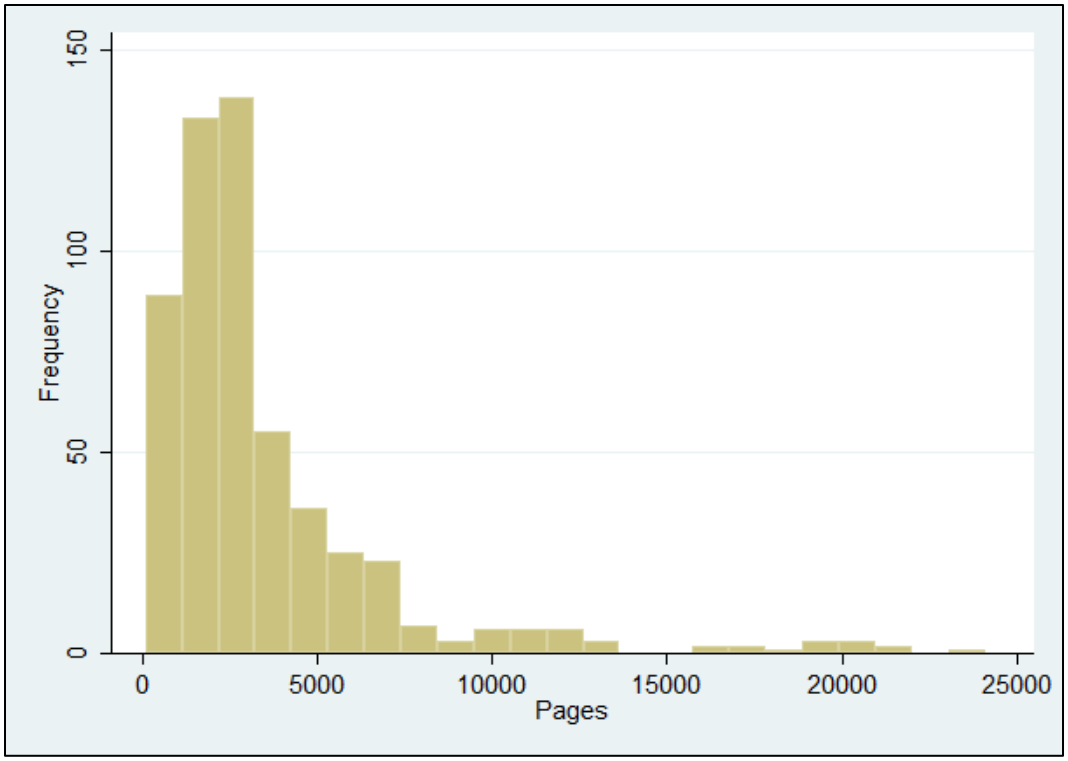

FIGURE 12: Pages Histogram

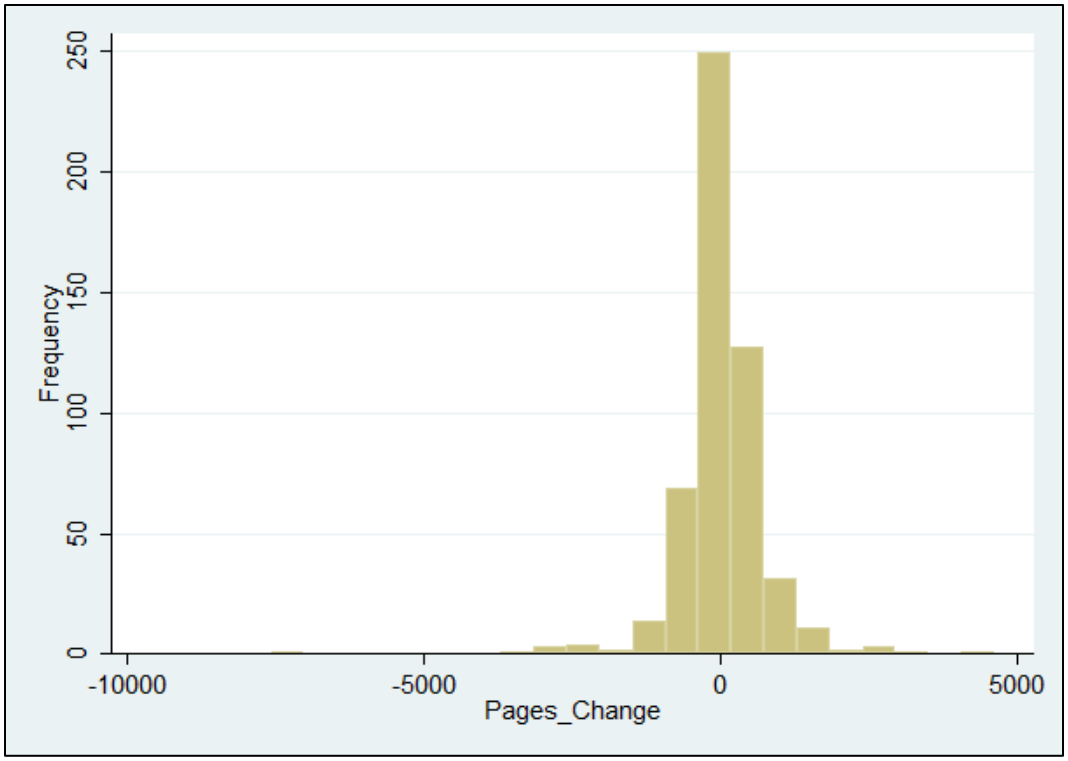

FIGURE 13: Pages Change Histogram

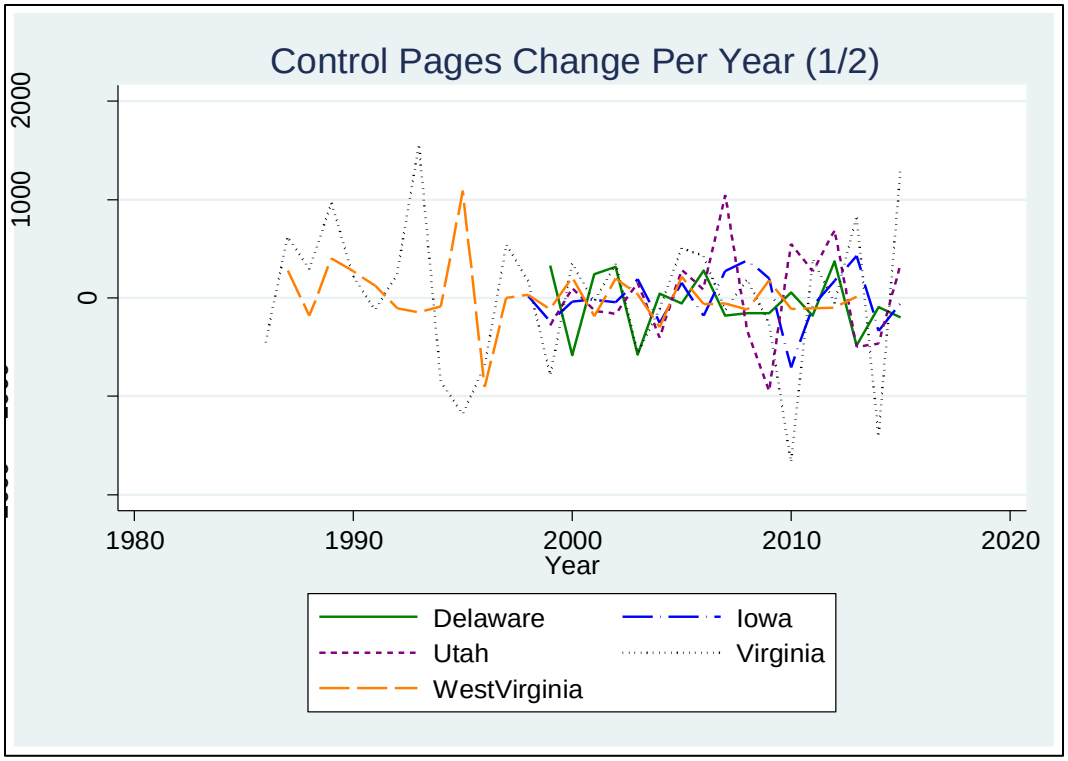

FIGURE 14:Control States' Pages Change per Year (1/2)

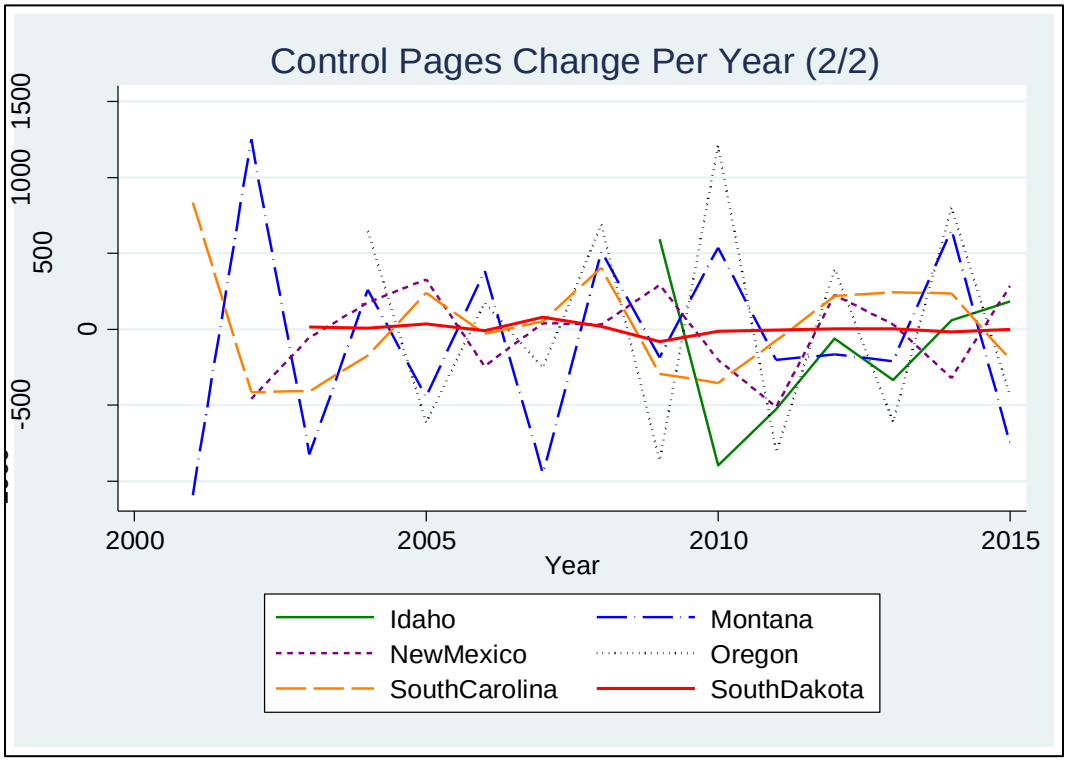

FIGURE 15:Control States' Pages Change per Year (2/2)

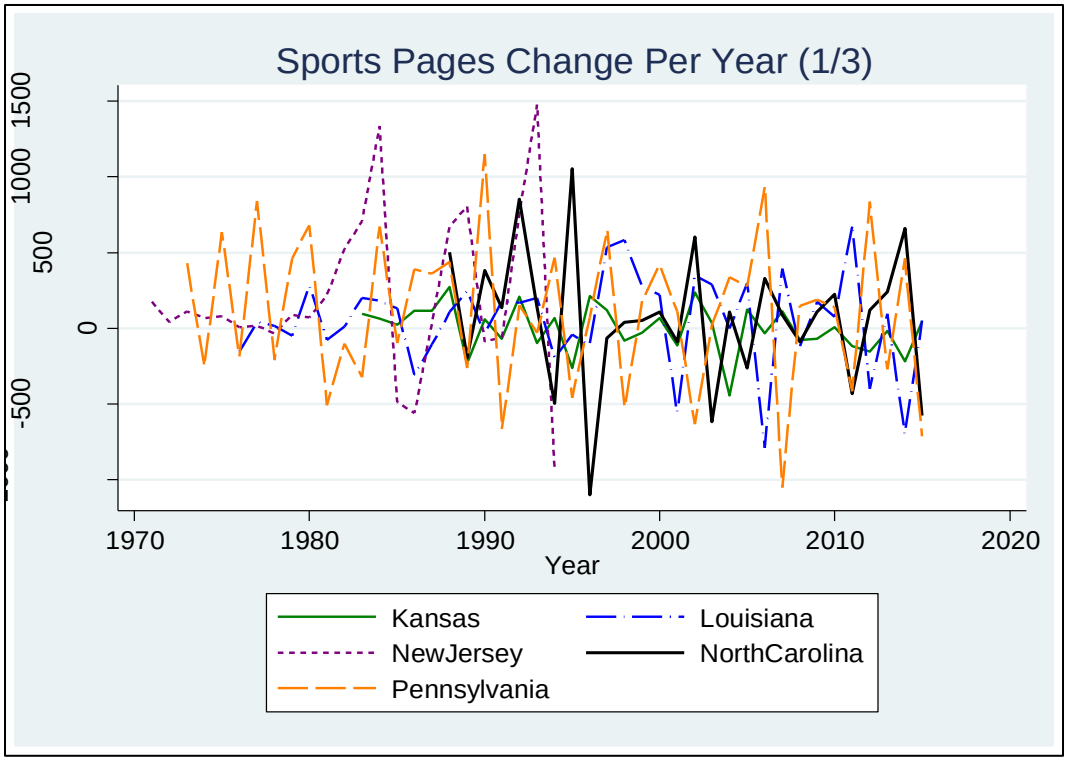

FIGURE 16:Sports States' Pages Change per Year (1/3)

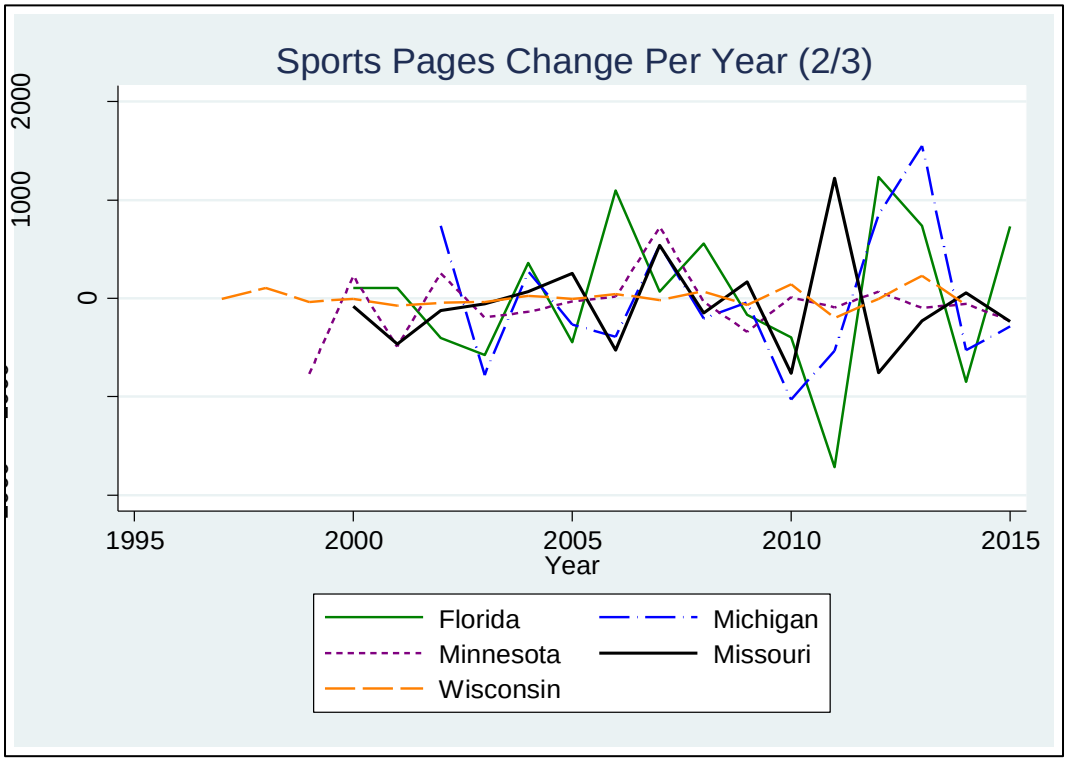

FIGURE 17: Sports States Pages change per Year (2/3)

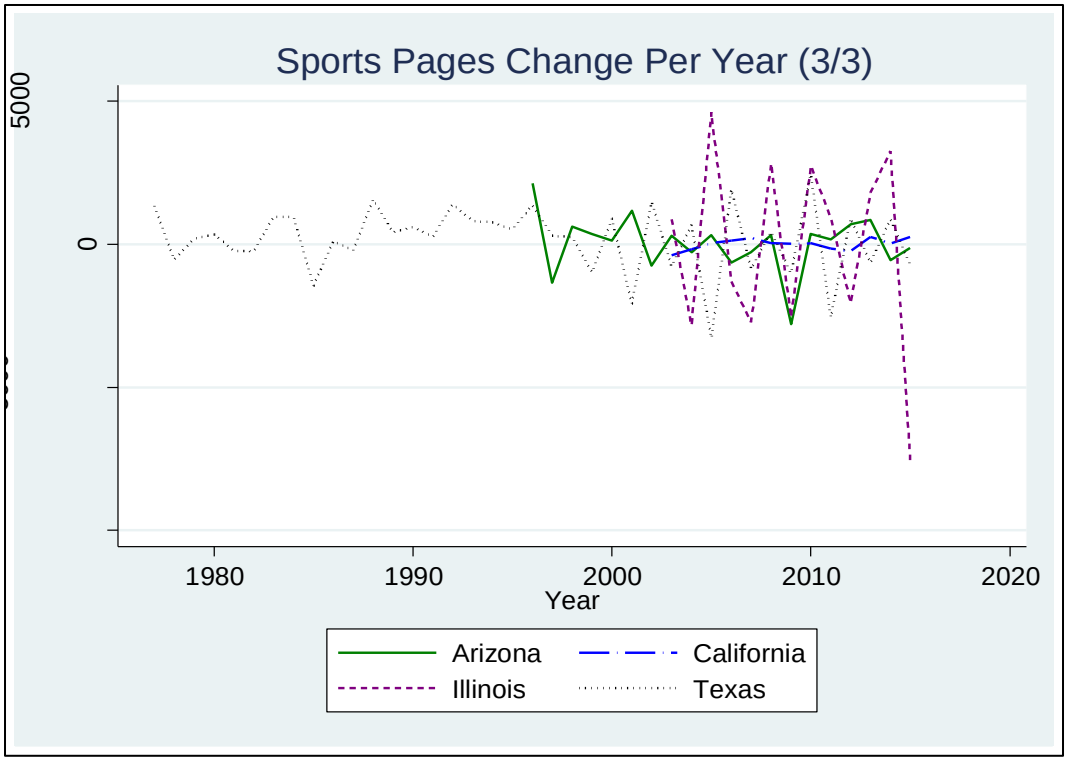

FIGURE 18: Sports States' Pages Change per Year (3/3)

Figures 12 and 13 are histograms of the dependent variables Pages and Pages Change respectively. Pages, Figure 12, is skewed right whereas Pages Change, Figure 13, is more normal with a central mean and consistent variability. Figures 14-18 are the same graphs as Figures 7-11 using Pages Change. When they are compared it can be seen that Pages Changes is more stationary and stable which makes it a better dependent variable. Based on the histograms and line plots Pages Changes provides a more stable and stationary dependent variable.

Stationarity will not be exclusively resolved by differencing the dependent variable Pages to Pages Change, but it will improve stationarity by providing an approximately consistent mean of zero. However, the variance for the states are not consistent. Table 10 presents Augmented Dickey-Fuller P-values for each individual state at different lags. The left half is for the variable Pages which provides many stationary states, mostly without lags. The right half of the table is for Pages Change which provides significantly more stationary states, specifically without lags. The bottom row provides the total

number of stationary states for each column. Table 10 supports the use of Pages Change because the transformation provides stability.

TABLE 9: Stationarity of Pages and Pages Change by State

	If P Value <=.05, the value is **Bold**					
	Augmented Dickey Fuller: Annual Pages			**Augmented Dickey Fuller: Annual Pages Change**		
	MacKinnon Approximate P Value for Z(t)			**MacKinnon Approximate P Value for Z(t)**		
	H0: A unit root is present			**H0: A unit root is present**		
	No Lags	**1 Lag**	**2 Lags**	**No Lags**	**2 Lags**	**4 Lags**
Arizona	0.1646	0.6574	0.582	**0**	**0.0385**	0.244
California	0.2501	0.2696	**0.0501**	**0.0487**	0.1409	0.1914
Delaware	0.5968	0.8622	0.9868	**0**	**0.0002**	**0.0141**
Florida	**0.0404**	0.0993	0.1388	**0.0001**	**0.0148**	0.1522
Idaho	0.7304	**0**	0.5445	**0.0138**	0.7571	1
Illinois	**0.0004**	0.0802	0.7501	**0**	**0**	0.1389
Iowa	**0.0413**	**0.0126**	0.0783	**0.0004**	**0.0024**	**0**
Kansas	0.2756	0.6165	0.7015	**0**	**0.0004**	**0.0095**
Louisiana	0.7146	0.7154	0.6417	**0**	**0.0022**	**0.0001**
Michigan	0.2106	0.0532	0.3115	**0.0057**	**0.0291**	0.0627
Minnesota	**0.0018**	0.3163	0.0641	**0**	0.1095	**0.0263**
Missouri	**0.0013**	**0.0419**	0.1756	**0**	**0.0007**	**0.0111**
Montana	**0**	0.5601	0.3109	**0**	**0.0156**	**0.0128**
New Jersey	0.9442	0.9395	0.9823	**0.001**	**0**	**0.0069**
New Mexico	**0.0417**	0.1143	0.6309	**0.0006**	**0.0003**	0.0778
North Carolina	**0.0097**	0.1407	0.054	**0**	**0.0002**	**0.0324**
Oregon	**0**	0.4489	0.5328	**0**	0.0529	**0.0245**
Pennsylvania	0.3066	0.3921	0.246	**0**	**0**	**0**
South Carolina	0.0684	**0**	**0.0205**	**0.0001**	**0.0066**	**0.0312**
South Dakota	0.2916	0.2528	0.3018	**0.0274**	0.133	0.4679
Texas	0.359	0.5692	0.565	**0**	**0.002**	**0.0062**
Utah	0.152	0.1938	0.5534	**0.0003**	**0.0018**	**0.0011**
Virginia	0.0729	0.0776	0.1311	**0**	**0.0006**	**0.0008**
West Virginia	**0.0009**	**0.0321**	**0.0071**	**0**	**0**	**0.0025**
Wisconsin	**0.0185**	0.1786	0.3268	**0**	**0.0009**	0.1226
Number of Stationary Panels	11	5	3	25	20	16

Note: Bold values indicates the null hypothesis of a unit root; i.e. stationarity

3.3. Independent Variable Analysis and Identification

The dependent variable has been finalized as annual Pages Change due to stationarity and normality of the variable relative to Annual Pages. However, the independent variables need to be analyzed and selected, specifically the formats of the variables. The following variables were created for each sport and each state:

1. Wins: Measures how successful a team is by the pure number of wins per year.

2. Winning Percentage: Measures how successful a team is that is bounded between 0 and 1. This allows for equal treatment of all sports since each sport has a different number of games per year:
    a. NFL- 16 regular season games and 12 teams make the playoffs with single elimination.
    b. NBA- 82 regular season games and 16 teams make the playoffs with best of seven series.
    c. NHL- 82 regular season games and 16 teams make the playoffs with best of seven series.
    d. MLB- 162 regular season games and 10 teams make the playoffs. The first round is the single game wildcard game. The divisional round is a best of five series. The League championship and World Series are each best of seven series.
    e. College Football- 12 regular season games with the potential of a conference championship game, bowl game and if a team makes the College Football Championship an additional game as well.
3. Wins Change: Measures the change in the number of wins per season to measure whether expectations or improvement influence the number of pages produced per year
4. Playoffs- A binary variable that takes a value of one if a team participated in the playoffs and zero otherwise.

    The value of this variable is that it provides a threshold. Perhaps a successful season is influential but by meeting the threshold, it might add extra productivity. For example, a team that makes the playoffs might have significantly more impact on bureaucratic productivity than teams who missed the playoffs by a small margin of games or even a tie breaker scenario.
5. Championship- A binary variable that takes a value of one if the team won the championship and zero otherwise.
6. All these variables are also tested as lags because of the previously mentioned issue of timing in sports leagues and measurement of state register pages.

College Football is the exception to some of these variables since there was no playoff for most of these years. Thus, the variables for College Football are Wins, Winning Percentage, Wins Change, and a binary variable Bowl Win, including lagged versions of these variables.

To provide an overview of the variables a table of within and between descriptive statistics is reported in Table 11. The within analysis evaluates how states vary, measured by standard deviation, minimum and maximum, from their own means for each variable. The between analysis evaluates how variables vary from the sample mean at any point, as measured by standard deviation, minimum and maximum.

In addition to these variables additional sports variables were generated for each state. The first variable generated is called Any Championship which is a binary variable that is 1 if any team in the given state won a championship or bowl game that season, otherwise it is zero. A second variable called Total Championships was created which is the sum of championships a team won that season. Total Championships is bounded between 0 and 5 and is only related to these teams meaning that if an alternative team won a championship or bowl game, it is not reflected here. It is believed that the threshold or exuberance of winning a championship might be much more economically significant than just having a successful season.

All the sports variables analyzed show lower between standard deviations than within leading to the conclusion that the population mean is perhaps more stable than an individual state's mean. This is the result of sports being a zero-sum game; for every winner another team must lose, therefore, the league winning percentage each year is always 50%. However, the overall winning percentages reported here are not 50% as a result of teams being excluded from this study. Specifically, no Canadian teams are included in this research, 23 continental US states were not included in this research, and teams from states included in this study were excluded if they were not the most popular team in the state (e.g. Houston Texans and Dallas Mavericks were not selected for this study because the Dallas Cowboys and Houston Rockets were more popular in Texas). The political variables have smaller within standard deviations meaning that states are more consistent politically.

TABLE 10: Within-Between Analysis

Variable		Mean	Std. Dev.	Min	Max	Observations
Annual Pages	overall	3533.066	3556.237	104	24081	N = 544
	between		3824.268	241.1429	19409.64	n = 25
	within		1147.978	-1546.159	8204.423	T-bar = 21.76
Annual Pages Changes	overall	28.88054	767.1674	-7577	4619	N = 519
	between		80.2678	-155.4615	209.75	n = 25
	within		763.1552	-7392.658	4803.342	T-bar = 20.76
Pro Football Winning Percentage	overall	0.5128891	0.1888032	0	0.9375	N = 536
	between		0.0649695	0.325	0.6464912	n = 25
	within		0.1790673	0.0091094	0.9549526	T-bar = 21.44
Pro Football Wins	overall	8.130597	3.052457	0	15	N = 536
	between		1.046754	5.2	10.31579	n = 25
	within		2.896049	0.280597	15.22584	T-bar = 21.44
Pro Basketball Winning Percentage	overall	0.492841	0.148951	0.106	0.841	N = 478
	between		0.0621943	0.4052857	0.6105714	n = 25
	within		0.1380653	0.1081939	0.8348936	T-bar = 19.12
Pro Basketball Wins	overall	39.61088	12.30667	7	69	N = 478
	between		4.816519	32.78571	48.42857	n = 25
	within		11.50803	9.133606	68.76877	T-bar = 19.12
Pro Baseball Winning Percentage	overall	0.4988983	0.0714794	0.265	0.716	N = 521
	between		0.0294496	0.45	0.5592353	n = 25
	within		0.0659871	0.2819649	0.7233358	T-bar = 20.84
Pro Baseball Wins	overall	80.07869	11.96146	43	116	N = 521
	between		4.696851	72.875	90.52941	n = 25
	within		11.12166	45.01203	116.4537	T-bar = 20.84
Pro Hockey Winning Percentage	overall	0.5520113	0.0961191	0.225	0.802	N = 444
	between		0.0492836	0.38635	0.6562143	n = 25
	within		0.0828386	0.3041508	0.8169002	T-bar = 17.76
Pro Hockey Wins	overall	38.41216	9.01661	12	58	N = 444
	between		4.041972	25.6	46.71429	n = 25
	within		8.104802	13.149	59.81216	T-bar = 17.76
College Football Winning Percentage	overall	0.5945768	0.1985526	0	1	N = 544
	between		0.1016778	0.3510556	0.783	n = 25
	within		0.1748146	0.0542532	1.051137	T-bar = 21.76
College Football Wins	overall	7.375	2.740293	0	13	N = 544
	between		1.464176	4.277778	10.21429	n = 25
	within		2.393465	0.7573529	13.09722	T-bar = 21.76
Percent of Democrats in State Senate	overall	0.5183664	0.1820447	0.1428571	1	N = 544
	between		0.1502167	0.2	0.7972689	n = 25
	within		0.1085875	0.0972778	0.8261084	T-bar = 21.76
Percent of Democrats in State House	overall	0.498759	0.155618	0.16	0.9619048	N = 544
	between		0.1281493	0.2160714	0.7423945	n = 25
	within		0.0924588	0.1835489	0.8147906	T-bar = 21.76

In addition to the within and between analysis, correlation grids were generated to identify basic relationship dynamics. A correlation grid was made for each sport using the variables outlined above and the variables Pages and Pages Change to test whether there is a stronger relationship between the two despite the variable Pages Change being used as the primary dependent variable.

The interpretations of the below grids are that there were no variables that were objectively strongly related to the Pages or Pages Change. Due to the lack of objectively strong correlations the two highest (underlined and italicized) and lowest correlations (underlined and bold) were identified for each sport. Correlations were also created for other political and economic state variables. Of the sports, the strongest positive or negative correlation is Total Number of Championships Won by a State followed closely by Pro Basketball Win Percentage at .1338 and .1327, respectively. Pro Hockey Championship was the strongest negative correlation at -.1117. The strongest variable overall is State GDP at .403.

NFL		
	Annual Pages	Annual Pages Change
Pro Football Win Percentage	0.0195	-0.0104
Lag 1: Pro Football Win Percentage	0.0385	0.0182
Pro Football Wins	0.0249	**-0.0148**
Lag 1: Pro Football Wins	*0.0437*	0.0101
Pro Football Playoff Appearance	**-0.0047**	0.0201
Lag 1: Pro Football Playoff Appearance	0.0223	0.016
Pro Football Championship	*0.0412*	*0.0381*
Lag 1: Pro Football Championship	0.0405	*0.0429*
Annual Pro Football Wins Change	**-0.0164**	**-0.0211**

NBA		
	Annual Pages	Annual Pages Change
Pro Basketball Win Percentage	*0.1327*	**-0.0224**
Lag 1: Pro Basketball Win Percentage	0.104	0.0029
Pro Basketball Wins	0.128	**-0.0131**
Lag 1: Pro Basketball Wins	0.094	-0.0099
Pro Basketball Playoff Appearance	*0.1314*	*0.0214*
Lag 1: Pro Basketball Playoff Appearance	0.106	0.0058
Pro Basketball Championship	**0.0305**	*0.0689*
Lag 1: Pro Basketball Championship	**0.02**	0.0187
Annual Pro Basketball Wins Change	0.0331	-0.0032

MLB		
	Annual Pages	Annual Pages Change
Pro Baseball Win Percentage	-0.0728	-0.0319
Lag 1: Pro Baseball Win Percentage	**-0.0908**	*0.0317*
Pro Baseball Wins	-0.0724	-0.0249
Lag 1: Pro Baseball Wins	**-0.0895**	0.0215
Pro Baseball Playoff Appearance	-0.0482	**-0.0497**
Lag 1: Pro Baseball Playoff Appearance	-0.0711	-0.0161
Pro Baseball Championship	-0.0349	*0.0435*
Lag 1: Pro Baseball Championship	*-0.032*	-0.0244
Annual Pro Baseball Wins Change	*0.0167*	**-0.0445**

NHL		
	Annual Pages	Annual Pages Change
Pro Hockey Win Percentage	0.0694	**-0.0638**
Lag 1: Pro Hockey Win Percentage	*0.0848*	-0.0002
Pro Hockey Wins	0.0424	-0.0513
Lag 1: Pro Hockey Wins	0.0475	-0.0141
Pro Hockey Playoff Appearance	**0.0116**	-0.0172
Lag 1: Pro Hockey Playoff Appearance	0.0201	*0.0092*
Pro Hockey Championship	0.0359	**-0.1117**
Lag 1: Pro Hockey Championship	*0.0894*	*0.1302*
Annual Pro Hockey Wins Change	**-0.0138**	-0.0276

NCAA Football		
	Annual Pages	Annual Pages
College Football Win Percentage	**0.0765**	0.0551
Lag 1: College Football Win Percentage	0.0801	0.0017
College Football Wins	0.0875	0.0547
Lag 1: College Football Wins	0.088	**-0.0259**
College Football Bowl Win	*0.0915*	*0.0801*
Lag 1: College Football Bowl Win	*0.0886*	**-0.0463**
Annual College Footballl Wins Change	**-0.0006**	*0.0835*

State Data		
	Annual Pages	Annual Pages
RGDP	0.0655	**-0.1077**
State GDP	*0.403*	-0.0216
State GDP Change	0.3198	0.0169
Lag 1: State GDP	*0.4013*	-0.0236
Lag 1: State GDP Change	0.3222	**-0.0521**
Percentage of State Senate that is considered Democrats	**-0.043**	*0.0424*
Percentage of State House that is considered Democrats	**-0.0006**	*0.0479*
Governor is Democrat	**-0.0133**	**0.0309**

Championships		
	Annual Pages	Annual Pages Change
Any Championships A State Won in a Year	0.0937	0.0828
Total Number of Championships Won by a State	*0.1338*	**0.0635**

FIGURE 19: Correlation Grids

Scatter plots of the above variables with Pages and Pages Change were generated to visualize the relationship. The first four scatter plots use Fixed Effects (FE) estimation in Stata to generate population level visuals. The second set of four scatter plots uses Between Effects (BE) to show how each of the states in the dataset compare. Histograms were also generated with normal density plots overlaid to visually evaluate the normality of the data; Shapiro-Wilkes tests of normality, Shapiro-Francia tests for normality, and Skewness/Kurtosis tests for normality are also generated for each sports variable. Below are visualizations for NFL results. Other sports visuals and formal tests of normality can be found in Appendix B.

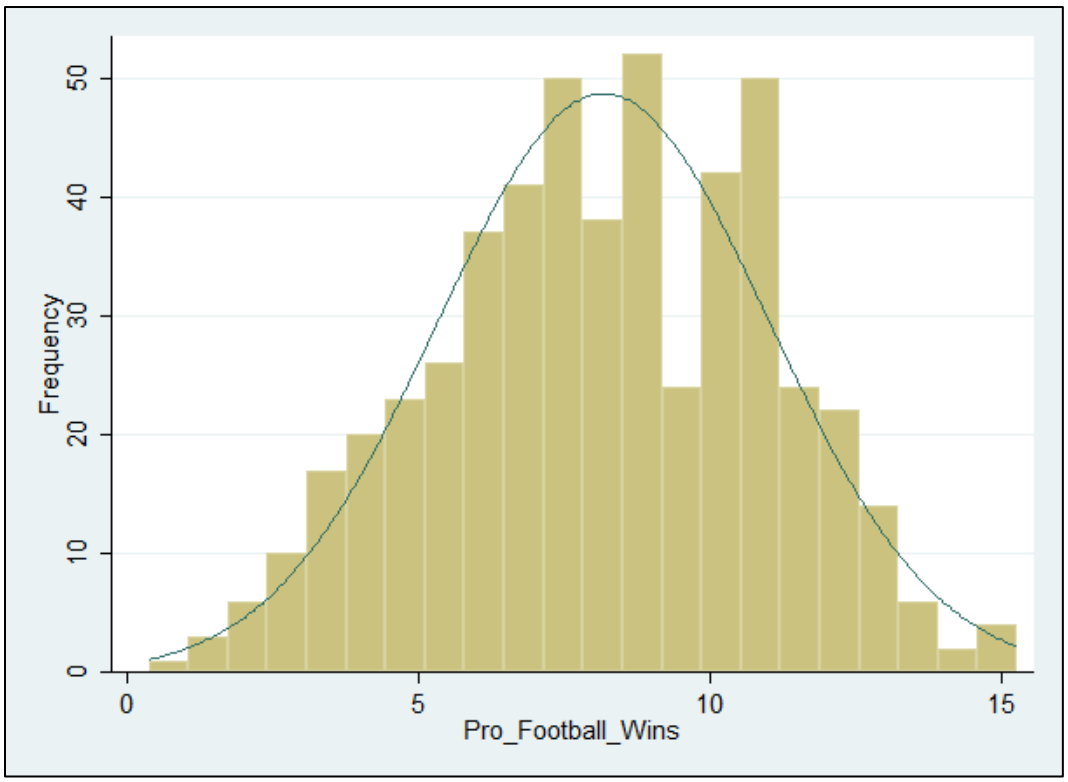

FIGURE 20: NFL Wins Histogram

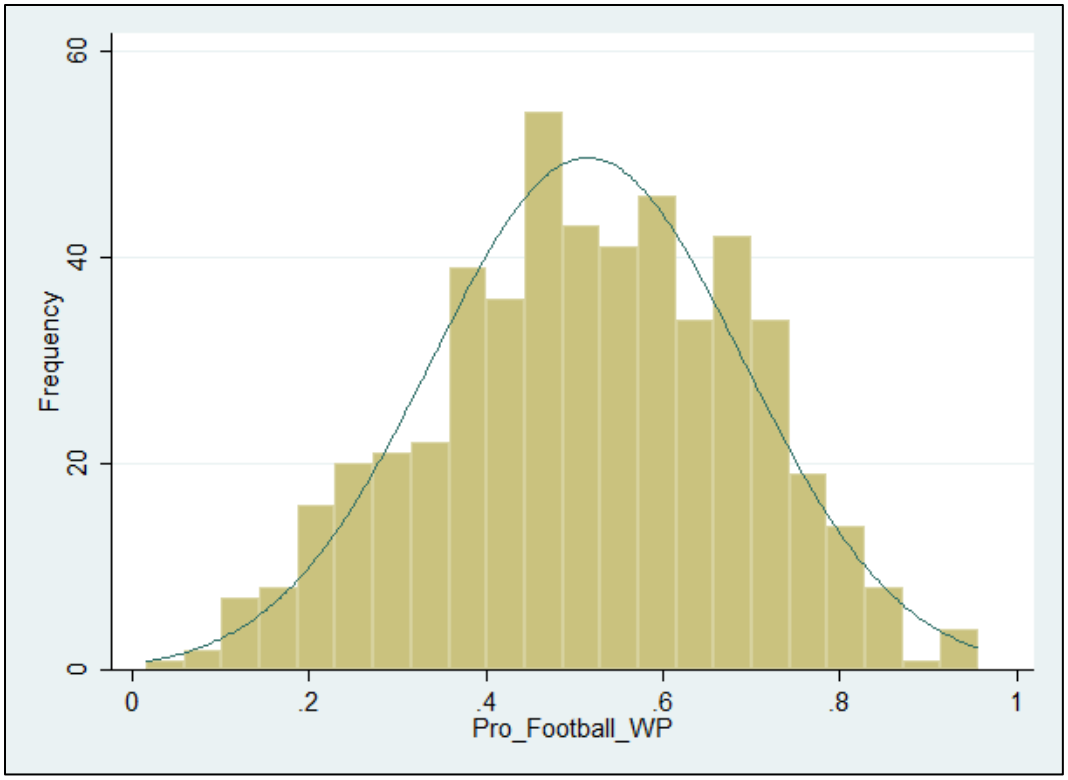

FIGURE 21: NFL Wins Percentage Histogram

Both histograms appear to be approximately normally distributed, but the winning percentage appears to be more normal. Despite the approximate normality of the histograms, the three tests of normality results conclude that both variables are not normally distributed, as seen in Appendix B.

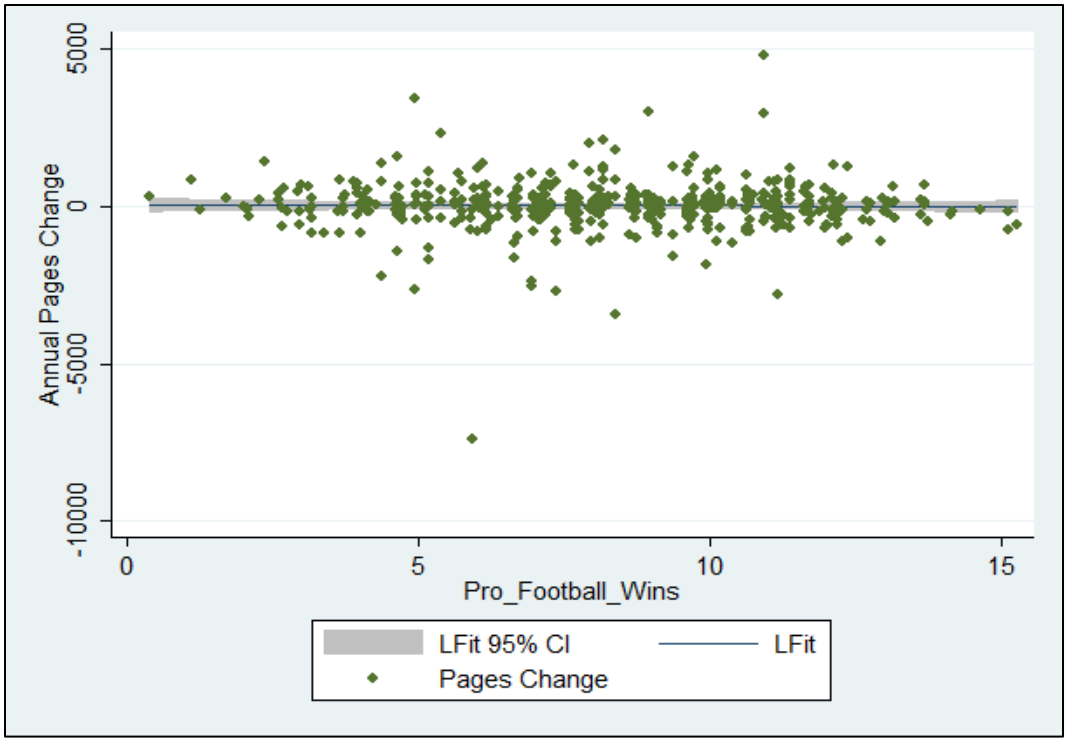

FIGURE 22: Pages Change vs NFL Wins (FE)

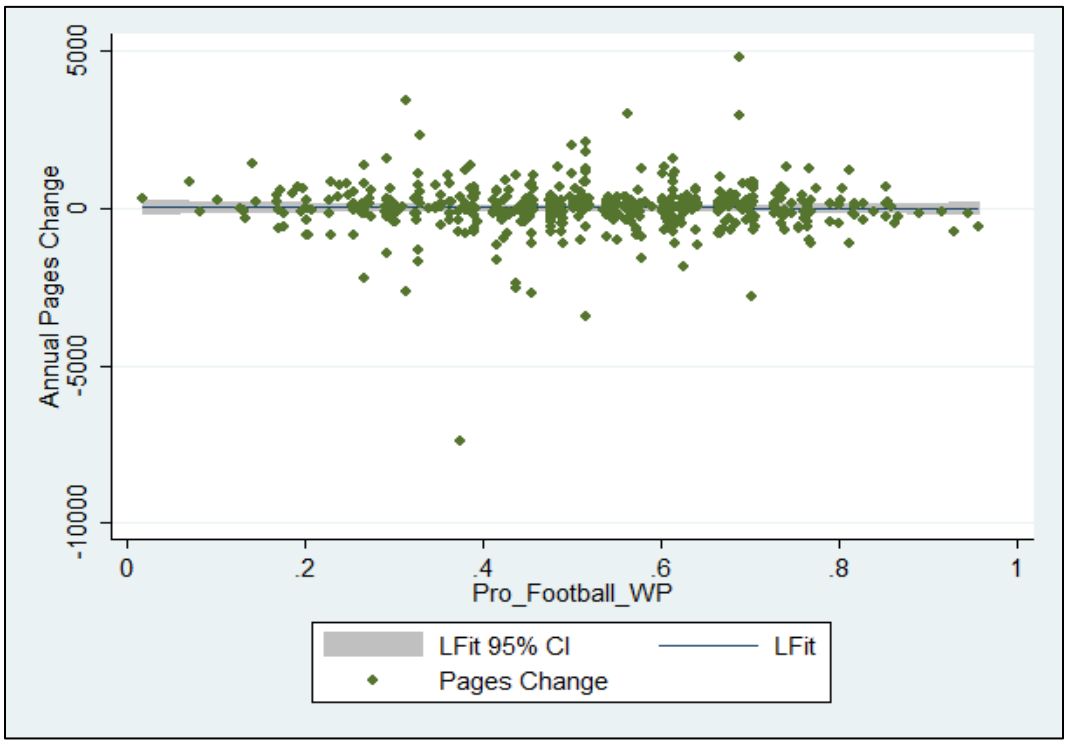

FIGURE 23: Pages Change vs NFL Win Percentage (FE)

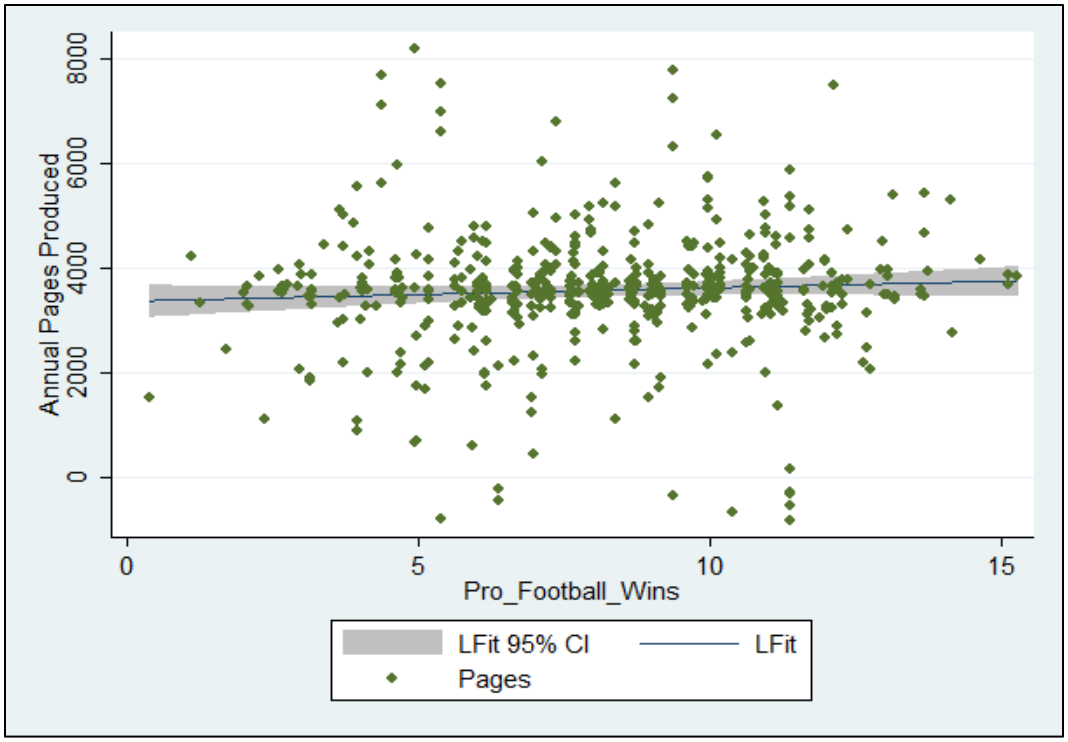

FIGURE 24: Pages vs NFL Wins (FE)

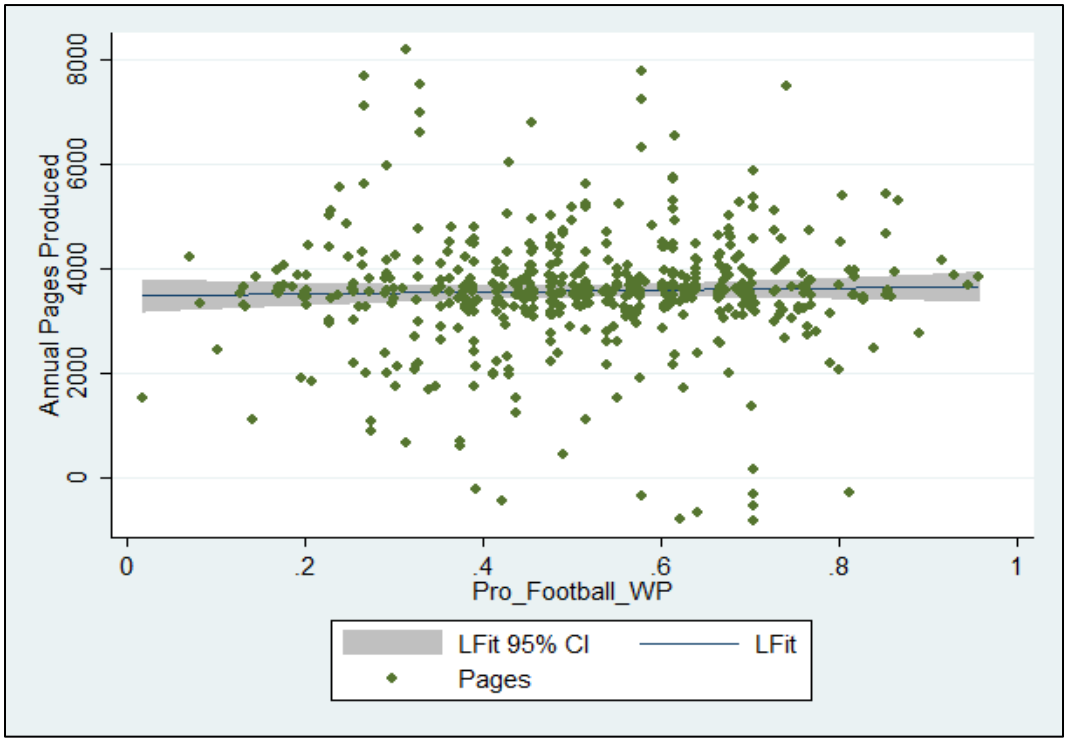

FIGURE 25: Pages vs NFL Win Percentage (FE)

The above four scatter plots present Pages Change and Pages vs NFL Wins and NFL Winning Percentage. Pages Change provides a more clustered grouping of the observations with the linear fit describing most of the data but the quadratic function being high due to a few extreme observations. The spread of Pages presents the variation in the data. Specifically, a vast majority of the data observations are outside of the 95% confidence interval and fairly far from it. None of the scatter plots above present a clear relationship between Pages or Pages Change and NFL Wins or NFL Winning Percentage.

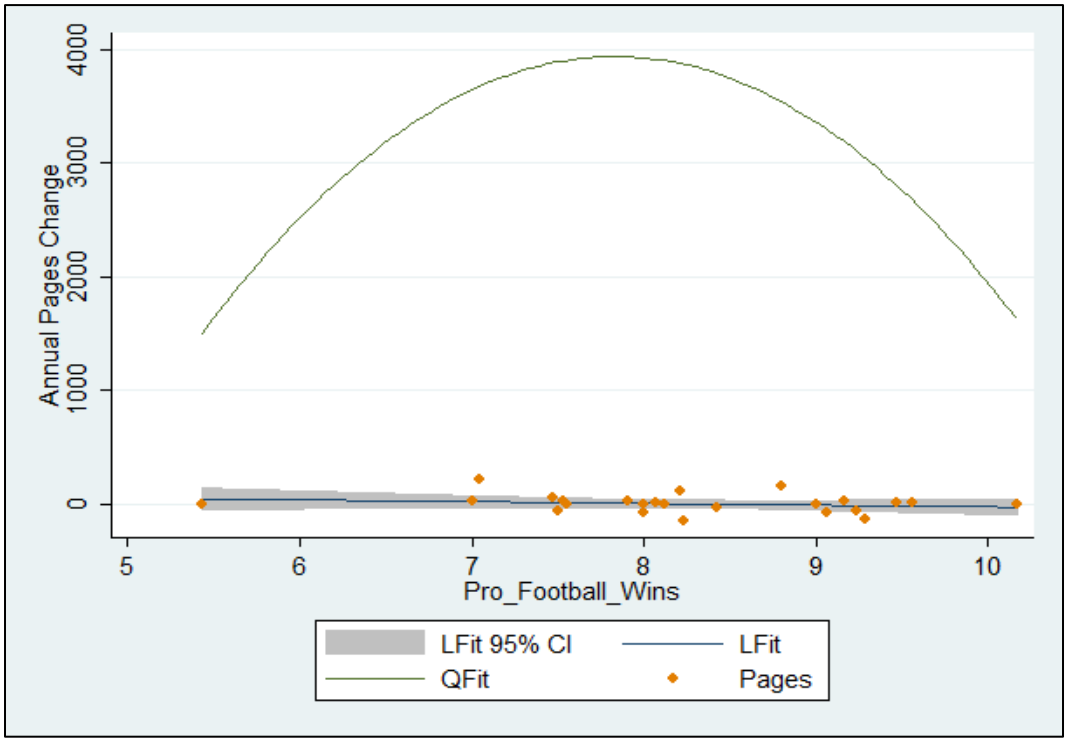

FIGURE 26: Pages Change vs NFL Wins (BE)

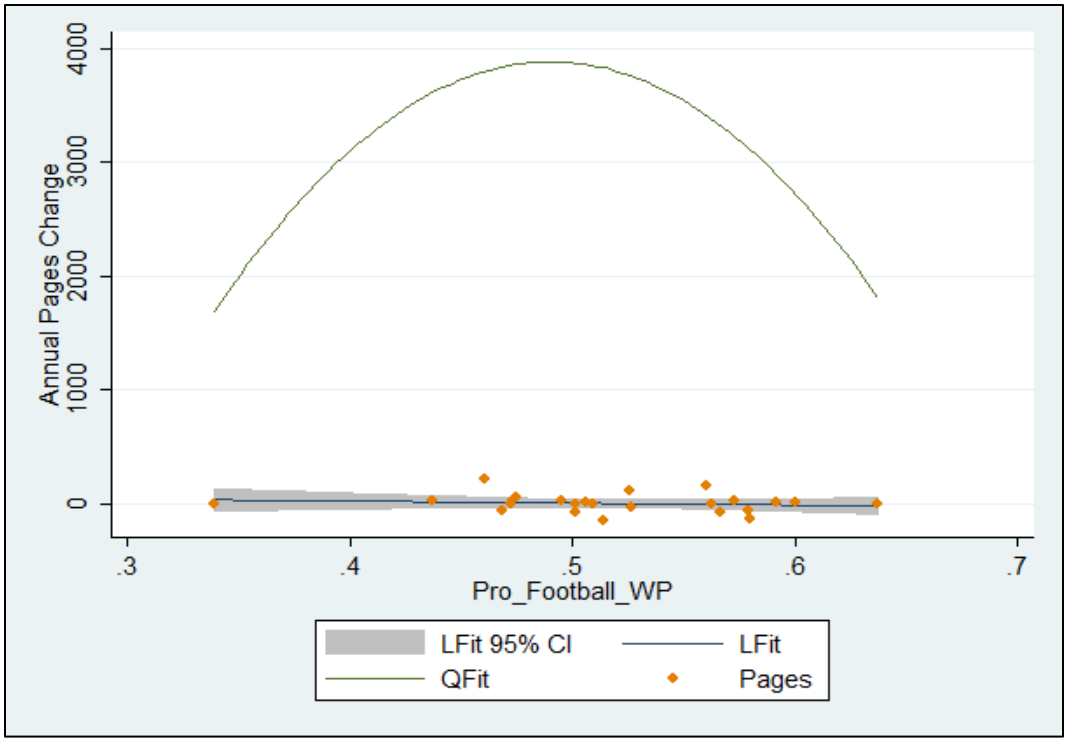

FIGURE 27: Pages Change vs NFL Win Percentage (BE)

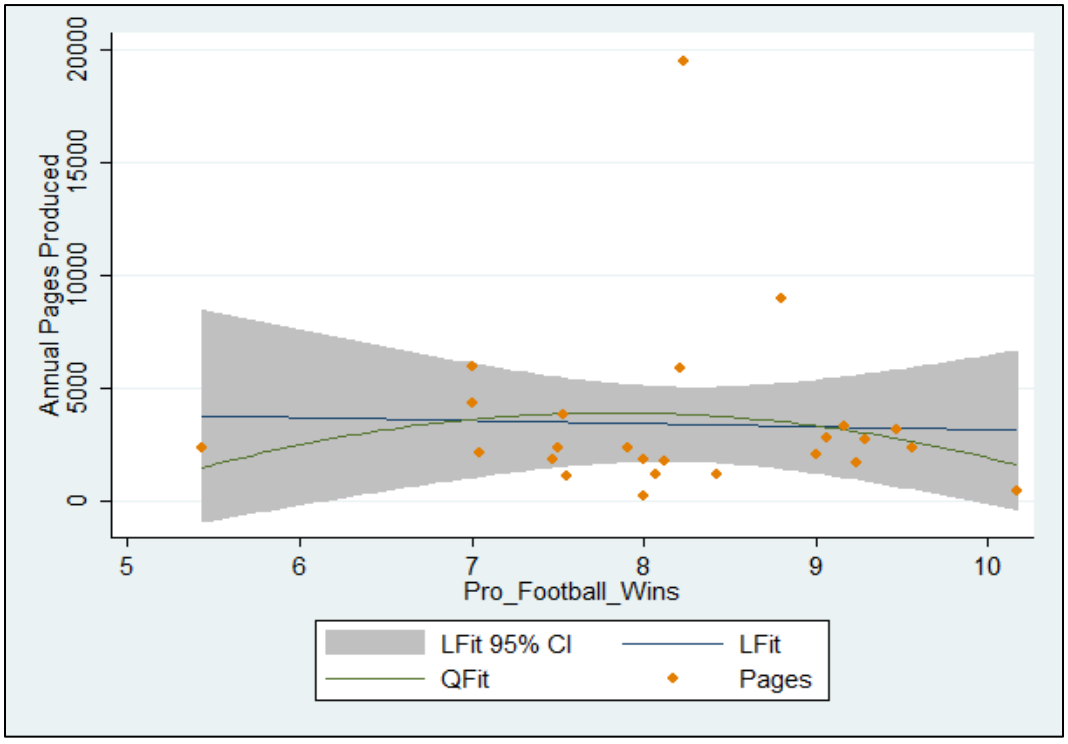

FIGURE 28: Pages vs NFL Wins (BE)

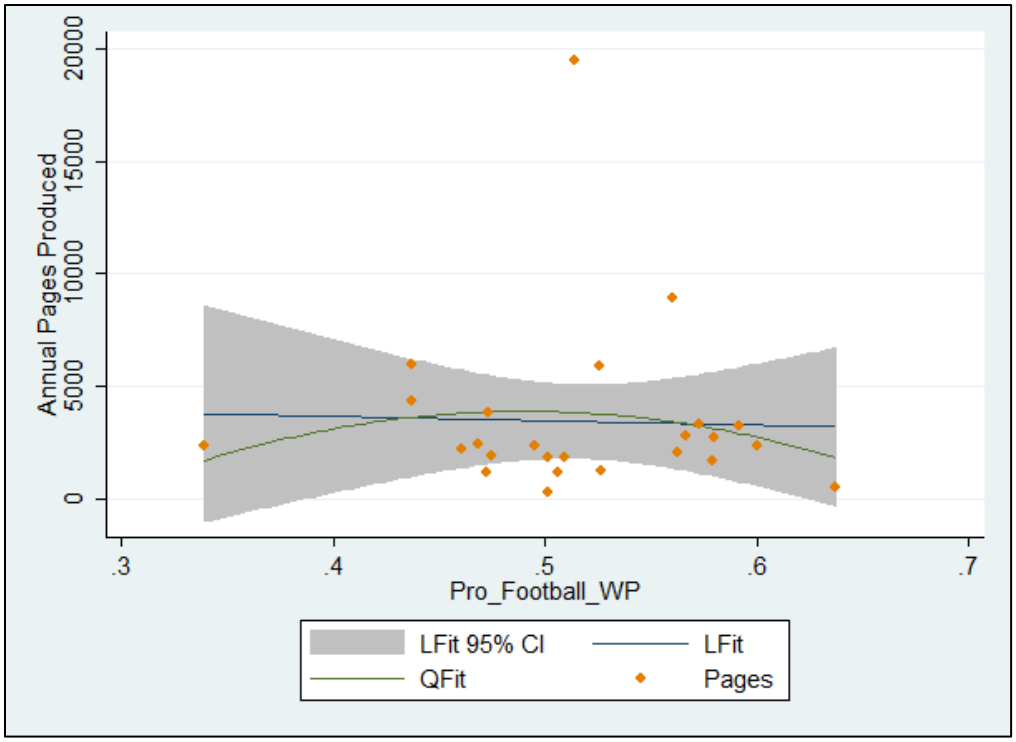

FIGURE 29: Pages vs NFL Win Percentage (BE)

4. METHODOLOGY AND RESULTS

4.1. Methodology

The data sample includes 25 states with observations ranging from 8 years to 40 years yielding 544 observations. Due to the significant number of observations and diversity of the states being used (as seen in Appendix A), it is assumed that the collective 544 observations is a random sample and a general representation of the population of states, despite the majority of observations being from sports states. The evidence for the states being random includes information on the size of the states, regions represented, industries of each state and other basic demographic information.

The specifications of the regressions are defined below and each includes a description of the specific regression's theory. As a recall to the previous section, the dependent variable is annual Pages Change.

The first series of regressions were individual tests of the sports variables outlined in section 3.3 to determine whether the variables are statistically significant and the nature of the relationship (positive or negative based on coefficients sign) based on OLS results. For each individual sports variable, twelve regressions were run. The first four regressions were generated using all of the data. The first two regressions included the independent variable, a constant term and potentially confounding variables (Percentage of Democrats in the State Senate and State GDP) using Random Effects and Fixed Effects. The next two regressions used the independent variable and a constant term without the potentially confounding variables using Random effects and Fixed Effects. These four regressions were run again using only sports states data and again using only control states. Once these regressions were run and analyzed, the larger regressions were designed and ran.

The larger regressions use the same fundamental variables and what is being tested is whether a certain form of these variables is optimal to identify the various relationship dynamics between sports and bureaucratic productivity. These regressions include the state descriptive variables of State GDP and Percent of Democrats in the State Senate, and a consistent method for measuring success of the NFL,

NBA, NHL, MLB, and College Football. The first larger regression was fit using Wins as the measurement and included lags for the NBA and NHL which have seasons played across two years. The second regression is identical to the first regression except Winning Percentage was used in lieu of Wins. The third and fourth larger regressions are identical to the first two regressions but these do not incorporate lags. The fifth and final larger regression used Wins Change as the measure of sports success to determine whether deviations from expectations or improvement were better rather than overall success.

4.2. Results

As alluded to in the previous section, the summary of results is that there are only a handful of statistically significant at the 0.1 level or better. The analysis is broken into pieces, the first section is sports variables being regressed individually, and again with covariates. The purpose of this section is to identify individually significant variables and give context for how significant these variables are. The second section is analysis on championships and this takes two forms. The first is a dummy variable of whether the state won a championship in any of these sports, the second uses the same covariates but the championship variable is a number between 0 and 5 is equal to the number of championships the state won that year. The third and final section of analysis uses the same sports variables but looks at all sports collectively for each state.

4.2.1. Individual Sports Results

The first section of OLS regression results are the Pages Change regressed on the individual sports variables. For each individual variable, there are 3 segments (all states, sports states only, and control states only) to determine whether the results were significant across the two groups. Within each of these segments there are four individual regressions; there are two different sets of variables and two different methods (fixed effects and random effects). The first two regressions use State GDP, Percent of Democratic State Senators, the sports variable, and a constant using Random Effects and state Fixed

Effects. The second two regressions include only a constant and the individual sports variable using Random Effects and state Fixed Effects. This resulted in 12 regressions per variable with each of the professional sports having 9 variables and College Football having 7 variables resulting in 516 total regressions (108 per professional sport, 4 professional sports and 84 for College Football). Each of those regression results are provided below. Specifically, looking at the significance of the variable it can be seen that very few of the variables were individually significant. The significant variables are bolded.

The summary of the regressions described is summarized in Tables 11, 12, and 13. Notably, there were only a few significant variables and when they were significant, were only significant in specific circumstances. Output for all 516 regressions is in Appendix C.

TABLE 11: Sports Variable Summary (1/3)

	MLB		NBA	
	Coefficient Signs	**Coefficient Significance**	**Coefficient Signs**	**Coefficient Significance**
Championships Lag 1	All coefficients are Negative	No coefficients are significant	All Data: Positive Sports Only: Positive Controls Only: Negative	No coefficients are significant
Playoffs Lag 1	All Data: Negative Sports Only: Negative Controls Only: Positive	No coefficients are significant	All Data: Mix of Positive and Negative Sports Only: Negative Controls Only: Positive	No coefficients are significant
Wins Lag 1	All Data: Positive Sports only: Mix of Positive and Negative Controls Only: Positive	All Data: Not significant Sports Only: Not significant Controls Only: 0.05 level	All Data: Negative Sports Only: Negative Controls Only: Positive	No coefficients are significant
Winning Percentage Lag 1	All Data: Positive Sports Only: Mix of Positive and Negative Controls Only: Positive	All Data: Not significant Sports Only: Not significant **Controls Only: Mix of 0.05 and 0.01 levels**	All Data: Positive Sports Only: Mix of Positive and Negative Controls Only: Positive	No coefficients are significant
Championship	All Data: Positive Sports Only: Positive Controls Only: Negative	No coefficients are significant	All coefficients are Positive	No coefficients are significant
Playoffs	All coefficients are Negative	All Data: Not significant Sports Only: Not significant **Controls Only: 0.1 level**	All Data: Positive Sports Only: Mix of Positive and Negative Controls Only: Positive	No coefficients are significant
Wins	All coefficients are Negative	No coefficients are significant	All Data: Negative Sports Only: Negative Controls Only: Positive	No coefficients are significant
Wins Change	All coefficients are Negative	All Data: Not significant Sports Only: Not significant **Controls Only: 0.01 level**	All Data: Negative Sports Only: Negative Controls Only: Positive	No coefficients are significant
Winning Percentage	All coefficients are Negative	No coefficients are significant	All Data: Negative Sports Only: Netagive Controls Only: Positive	No coefficients are significant

TABLE 12: Sports Variable Summary (2/3)

	NFL	
	Coefficient Signs	**Coefficient Significance**
Championships Lag 1	All coefficients are Positive	No coefficients are significant
Playoffs Lag 1	All Data: Positive Sports Only: Mix of Positive and Negative Controls Only: Positive	No coefficients are significant
Wins Lag 1	All Data: Positive Sports Only: Negative Controls Only: Positive	All Data: Not significant Sports Only: Not significant **Controls Only: 0.1 level**
Winning Percentage Lag 1	All Data: Positive Sports Only: Negative Controls Only: Positive	All Data: Not significant Sports Only: Not significant **Controls Only: 0.1 level**
Championship	All Data: Positive Sports Only: Positive Controls Only: Negative	No coefficients are significant
Playoffs	All coefficients are Positive	No coefficients are significant
Wins	All Data: Negative Sports Only: Positive Controls Only: Negative	No coefficients are significant
Wins Change	All Data: Negative Sports Only: Positive Controls Only: Negative	All Data: Not significant Sports Only: Not significant **Controls Only: 0.05 level**
Winning Percentage	All Data: Negative Sports Only: Positive Controls Only: Negative	No coefficients are significant

TABLE 13: Sports Variable Summary (3/3)

	NHL		College Football	
	Coefficient Signs	**Coefficient Significance**	**Coefficient Signs**	**Coefficient Significance**
Championships Lag 1	All coefficients are Positive	All Data: 0.01 level **Sports Only: 0.01 level** Controls Only: Not significant	All coefficients are Negative	No coefficients are significant
Playoffs Lag 1	All Data: Positive Sports Only: Positive Controls Only: Negative	No coefficients are significant	N/A - No Playoffs in College Football	
Wins Lag 1	All Data: Mix of Positive and Negative Sports Only: Mix of Positive and Negative Controls Only: Negative	No coefficients are significant	All coefficients are Negative	No coefficients are significant
Winning Percentage Lag 1	All Data: Mix of Positive and Negative Sports Only: Positive Controls Only: Negative	No coefficients are significant	All Data: Mix of Positive and Negative Sports Only: Mix of Positive and Negative Controls Only: Mix of Positive and Negative	No coefficients are significant
Championship	All coefficients are Negative	**All Data: Mix of 0.1 and 0.05 levels** **Sports Only: Mix of 0.1 and 0.05 levels** Controls Only: Not significant	All coefficients are Positive	**All Data: Mix of 0.1 and 0.05 levels** **Sports Only: Mix of 0.1 and 0.05 levels** Controls Only: Not significant
Playoffs	All coefficients are Negative	No coefficients are significant	N/A - No Playoffs in College Football	
Wins	All coefficients are Negative	No coefficients are significant	All coefficients are Positive	**All Data: Fixed effects model with covariates is significant at the 0.1 level** Sports Only: Not significant Controls Only: Not significant
Wins Change	All coefficients are Negative	No coefficients are significant	All coefficients are Positive	**All Data: 0.1 level** Sports Only: Not significant Controls Only: Not significant
Winning Percentage	All coefficients are Negative	No coefficients are significant	All coefficients are Positive	No coefficients are significant

The above tables are a summary of the 516 regressions. The first column for each sport and variable combination reports whether the sports variable is positive, negative, or a mix of positive and negative coefficients. The purpose of reporting this is to show whether the sports variable has a positive or negative relationship with bureaucratic production and to determine whether the relationships are consistent across segments, all states, sports states, and control states. This type of analysis reveals whether sports states and control states have the same relationships with different sports. The second column for each sport reports whether the sports variables are statistically significant as measured by P-value less than or equal to 0.1; if the variable is statistically significant the P-value is reported in the table.

Once the regressions were summarized into the above table the goal was to look across sports and down the variables to identify trends that would answer the following questions:

1. Do specific sports influence bureaucratic productivity regardless of how the success is measured, or does general sports success matter regardless of the sport? That is do states care about specific sports or do states care about enjoying successful teams regardless of sport?
2. What is the relationship of sports variables with bureaucratic productivity (positive or negative)? Are the relationships consistent across sports? Also, do the sports and control states produce consistent results or are the dynamics different for each group.

The first notable result is that the NBA produced no statistically significant results despite various specifications and data samples using all data, using sports states and control states, and the numerous regression specifications. A review of Table 6 shows that 10 of the 25 basketball teams are located outside of the state they are tied to, for example Delaware is assigned the Philadelphia 76ers. This may affect the influence the teams have in these states. Every other sport produced at least one statistically significant result.

The NFL and MLB produced very similar results. They each produced statistically significant results only for control states and for the variables lagged wins, lagged winning percentage, and wins change.

The MLB variables are significant at the 0.01 level and the NFL are significant at the 0.1 or 0.05 levels. These results prompt follow-up on a couple of items. The first is why are these sports only significant in the control states? As shown in Table 2, the NFL is the most watched sport in the United States and Baseball is considered "America's Pastime". The expectation would have been for the NFL to be significant in all states in the data. The second notable item from these sports is that the lagged results are significant when football primarily happens between September and December with only the playoffs occurring between January and February, and baseball occurring all in the same calendar year. The use of lagged sports results were intended for the sports that always occur in two calendar years (NHL and NBA). The relationships of these statistically significant variables are consistent across the two sports. Lagged wins and lagged winning percentage for each sport produced positive coefficients whereas wins change for each sport produced negative coefficients.

The NHL produced statistically significant results for the samples All Data and Sports Only for lagged championships and current championships. It is easy to interpret that what matters for the NHL is winning the Stanley Cup. However, the relationships that these variables produce are opposite. The lagged championship produces a positive coefficient whereas the current championship produces a negative coefficient.

The final sport is college football which has no significant lagged variables. The following current variables are significant for the full sample: Championship, Wins, and Wins Change. There are no statistically significant variables for the control states, and Championship was statistically significant for sports states.

Based on the empirical results control states prefer the NFL and MLB and care specifically about regular season performance. The relationship direction is the same for control states for both sports, specifically for Lagged Wins and Lagged Winning Percentage the relationship is positive but for Wins Changes the relationship is negative.

The sports states subsample and full sample did not produce any significant results for the MLB, NFL, or NBA. However, the two groups did produce a statistically significant positive relationship for Lagged Championship but a negative relationship for Championship. The effects of a Stanley Cup on bureaucratic productivity starts positive but a year later becomes negative. For sports states, College Football Championship is the only significant variable and it has a positive relationship with bureaucratic output. For the full sample, College Football Championship is significant and positive, Wins is significant and positive only for the fixed effects model with covariates, and Wins Change is significant and positive. The Wins variable being significant for only one of the four regressions is not enough to provide any meaningful insights. Control states uniquely prefer the NFL and MLB regular season performance, Sports states uniquely prefer the NHL championships, and all states value their local college football teams.

Reviewing individual variables across Tables 11, 12, and 13 show that there are no trends for each variable, meaning no specific metric can be considered the optimal method of measuring the exogenous influence of sports. The aspiration was to identify the best method of measuring sports success or identify what aspect of sports influences productivity, e.g., does only a championship have influence? Or is it a strong season as measured by wins? The variables that produced the most significant results were Wins Change and Championships. Wins Change produced significant results for Controls Only for MLB, Controls Only for NFL, and All Data for College Football resulting in a total of three significant variables in three sports. Championships produced significant results for the NHL and College football for segments All Data and Sports only resulting in a total of four significant variables in two sports.

These results don't provide sufficient evidence to conclusively explain the dynamics or relationship of how sports influence bureaucratic productivity. Additional research into state level dynamics is likely required to identify the appropriate trends.

In addition to the individual sports regressions, variables were generated to measure the number of championships in general for a state. The variable Any Championship for each state is equal to 1 if one of

the selected teams in each state won a championship or the selected NCAA football team won a bowl game. The value of this variable is that perhaps a championship in general is significant and will provide a commonly enjoyed commodity and the specific sport or team is irrelevant. Additionally a variable called Total Championships was created and is a count of championships won by each state for the selected teams, meaning the variable is an integer between 0 and 5. This provides more information than the binary variable of total championships and may provide some information on perhaps diminishing or increasing returns of multiple championships.

4.2.2. Championships

TABLE 14: Any Championship

Any Championship	All Data		Sports Only	Control Only
	Fixed Effects	**Random Effects**	**Fixed Effects**	**Fixed Effects**
State GDP	-0.000378 (0.000272)	-0.0000687 (0.000092)	-0.00038 (0.000329)	-0.000249 (0.000786)
State Senate Democrat Percentage	115.2 (387.70)	227.2 (188.00)	147.8 (511.50)	190.1 (520.20)
Any Championship	**155.2**** (73.54)	**147.8**** (69.59)	**218.8**** (105.00)	34.6 (79.49)
Constant	14.89 (260.90)	-129.8 (113.20)	24.88 (368.10)	-90.35 (323.30)
Observations Number of Statenum R-squared	519 25 0.015	519 25	334 14 0.021	185 11 0.003
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 15: Lagged Any Championship

Any Championship-Lag 1	All Data		Sports Only	Control Only
	Fixed Effects	**Random Effects**	**Fixed Effects**	**Fixed Effects**
State GDP	-0.000405 (0.000273)	-0.0000359 (0.000093)	-0.000425 (0.000330)	-0.000291 (0.000786)
State Senate Democrat Percentage	-10.59 (389.80)	168.9 (189.20)	-51.68 (514.70)	163.3 (520.90)
Lag (1) Any Championship	-17.45 (75.01)	-18.15 (70.61)	-4.746 (107.80)	-42.56 (79.96)
Constant	159 (261.60)	-40.65 (113.80)	242.2 (368.40)	-42.17 (324.80)
Observations Number of Statenum R-squared	519 25 0.007	519 25	334 14 0.007	185 11 0.004
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 16: Total Championships

Total Championships	All Data		Sports Only	Control Only
	Fixed Effects	**Random Effects**	**Fixed Effects**	**Fixed Effects**
State GDP	-0.000403 (0.000272)	-0.0000747 (0.000094)	-0.000409 (0.000329)	-0.000286 (0.000785)
State Senate Democrat Percentage	95.6 (387.80)	216.2 (188.20)	110.6 (512.10)	184.6 (519.70)
Total Championships	**128.2*** (69.84)	**110.2*** (64.01)	**172.8*** (99.57)	41.02 (75.68)
Constant	50.66 (259.00)	-100.5 (110.90)	88.83 (364.60)	-84.76 (321.20)
Observations Number of Statenum R-squared	519 25 0.013	519 25	334 14 0.017	185 11 0.004
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 17: Lagged Total Championships

Total Championships-Lag 1	All Data		Sports Only	Control Only
	Fixed Effects	Random Effects	Fixed Effects	Fixed Effects
State GDP	-0.000413 (0.000273)	-0.0000515 (0.000095)	-0.00043 (0.000330)	-0.000288 (0.000785)
State Senate Democrat Percentage	24.4 (387.60)	185.1 (188.40)	-19.91 (511.80)	177.6 (519.80)
Lag(1) Total Championships	39.87 (71.19)	27.88 (64.55)	37.28 (102.10)	41.93 (76.26)
Constant	121.7 (258.00)	-61.96 (110.60)	212.3 (362.80)	-81.44 (320.70)
Observations	519	519	334	185
Number of Statenum	25	25	14	11
R-squared	0.007		0.008	0.004
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

These two variables were tested using lags and both panel data methods, similar to the individual sports variables. It can be seen that both Any Championship and Total Championships were both statistically significant at the 0.1 level or better using both Random Effects and Fixed Effects for Sports States and All Data. The lagged versions of the variables were not statistically significant. These results provide information about the immediate impacts of championships in general and the general value of a championship outside of a specific sport. These championships appear to be more influential within sports states than control states.

4.2.3. Aggregated Sports Variables

In addition to these smaller regressions, larger regressions were built that tested all sports using specific variable formats such as wins, winning percentage and wins change to determine if there was a greater impact by utilizing all sports and a specific format of the variables. Each variable below has a specific theory related to the variables chosen, as described in section 3.3.

The first variable used is current Wins as the most basic measure of a team success. As can be seen below, no variables were significant which is consistent with the smaller regressions previously presented.

TABLE 18: All Sports Wins

Wins	All Data Random Effects	Sports only Fixed Effects	Control Only Fixed Effects
State GDP	-0.00001 (0.00011)	-0.0003453 0.00048	0.0007973 0.00209
State Senate Democrat Percentage	138.4 (273.30)	26.00501 1028.22	424.5768 666.00
NFL Wins	-3.048 (14.47)	11.3406 25.06	-17.78594 15.01
MLB Wins	-3.622 (3.57)	-5.124154 6.28	-4.131618 3.66
NBA Wins	-0.739 (3.47)	-2.007224 6.09	0.9626889 3.44
NHL Wins	-6.927 (4.70)	-6.106891 8.74	-6.225115 5.02
College Football Wins	26.07 (16.07)	45.70785 31.18	10.26794 17.62
Constant	373.4 (445.20)	479.9459 967.42	298.2929 520.68
Observations Number of Statenum	374 25	220 14	154 11
Hausman P Value	0.9887	0.9873	0.9935
If P Value $\leq$ 0.05, use Fixed Effects			
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

The second regression uses Winning Percentage for the sports, similar to the Coffey, McLaughlin, and Tollison (2011). No variables are statistically significant. This is surprising since the results of the Coffey, McLaughlin, and Tollison (2011) paper produced statistically significant results using this variable as a measure.

TABLE 19: All Sports Winning Percentage

Winning Percentages	All Data Random Effects	Sports only Fixed Effects	Control Only Fixed Effects
State GDP	-0.000000536 (0.00011)	-0.0003506 0.00048	0.0008773 0.00210
State Senate Democrat Percentage	112.9 (272.80)	56.30644 1029.55	298.1313 655.83
NFL Winning Percentage	-15.59 (234.40)	200.2692 410.07	-262.0525 242.21
MLB Winning Percentage	-673.6 (601.30)	-1159.61 1085.20	-621.298 611.64
NBA Winning Percentage	-48.71 (287.60)	-160.6964 510.06	75.70956 290.11
NHL Winning Percentage	-669.4 (440.60)	-796.6176 883.63	-436.6276 477.49
College Football Winning Percentage	328.6 (220.30)	500.2347 428.97	112.0282 246.26
Constant	510 (491.60)	879.4517 1086.02	330.7815 560.49
Observations Number of Statenum	374 25	220 14	154 11
Hausman P Value	0.9811	0.9895	0.997
If P Value $\leq$ 0.05, use Fixed Effects			
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

The final regression uses Wins Change which measures the annual (or seasonal) change in wins per team. Two sports were found to be significant at the 0.1 level, College Football and Professional Baseball. Despite both being significant the MLB coefficient is negative and the NCAA Football is positive.

TABLE 20: All Sports Wins Change

Annual Wins Changes	All Data Random Effects	Sports only Fixed Effects	Control Only Fixed Effects
State GDP	0.000014 (0.00011)	-0.0003376 0.00049	0.0009011 0.00201
State Senate Democrat Percentage	51.28 (276.00)	-359.8236 1035.29	81.71981 586.08
NFL Wins Change	-0.0299 (12.17)	10.6311 20.14	**-17.85857** 11.06
MLB Wins Change	**-6.539*** (3.51)	-5.128001 6.03	**-7.862035** 2.99
NBA Wins Change	-2.115 (3.70)	-2.084485 6.33	-2.155777 3.22
NHL Wins Change	-3.642 (4.17)	-4.679651 7.40	-1.938338 3.41
College Football Wins Change	**29.87*** (16.14)	42.1106 27.23	11.5123 14.24
Constant	0.621 (146.80)	396.0409 629.15	-147.4165 383.95
Observations Number of Statenum	365 25	211 14	154 11
Hausman P Value	0.9998	0.9989	0.9999
If P Value $\leq$ 0.05, use Fixed Effects			
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

These larger regressions provide consistent results with the individual regressions from section 4.2.1. It was considered that the statistically significant variables could be combined to create a more insightful regression, essentially R-squared hacking. However, there is no underlying theory for combining these unique variables into one regression and has therefore been foregone.

5. CONCLUSION

5.1. Findings

There were two hypotheses proposed for how sports might influence bureaucratic productivity. The first hypothesis is that a positive relationship exists between the success of local sports teams and bureaucratic productivity, meaning that more sports success results in more regulations due to lower transaction costs between regulators. The second hypothesis is that more sports success will result in fewer regulations as a result of substituting sports related utility for regulation related utility. What can be seen from the numerous regressions is that there is no clear specific result or trend in this comprehensive analysis, instead there are nuanced preferences for sports, how success of the sport is measured, and the relationship dynamics. The findings can be summarized as the relationships between sports preferences and bureaucratic productivity are nuanced and subtle. A microstudy of these sports may be required to understand the dynamics of the shocks these sports have on the regulatory productivity. Specifically, a monthly study of pages change might be required to see how long after each season these shocks last. Perhaps these results can be attributed to the optimism each team provides for the upcoming season.

5.2. Limitations

Many decisions were made that may have affected the results. Additionally, some methods of analysis were not performed due to time constrains. Limitations or potential explanations for why a positive finding was not produced are outlined below.

1. Unbalanced Data: This is the result of some states posting their state registers online later than other states, and other states moving their historical archives behind paid services like Lexis Nexis.
2. Inconsistency of State Register Formats: The formats of state registers differ across states which means page counts across states are relatively meaningless to compare. However, if individual states change formats and this is not identified during the review it may lead to misleading

structural changes in the page counts that are misleading and make even the internal comparison of pages less meaningful.

3. Selection of Teams: the method for selecting teams uses a quantified approach but may not be the best method of capturing the true preferred team in a state. Especially with instate rivalry being such a big issue the selection of the wrong team may result in this lack of results. Also, this might be a moving target if the "favorite" team changes based on who the best team is at a current time or who the current regulators are. This would require substituting teams or averaging all of the teams' performances to capture this moving dynamic.
    a. Many of the states, specifically the control states, have weak relationships with the assigned teams, or, there are sufficient arguments for alternative teams. A review of Table 6: shows that control states like Delaware are assigned teams like the Philadelphia Eagles and Temple Owls as their teams and these teams are not in Delaware, or Kansas having the Dallas Mavericks and Colorado Avalanche assigned as their teams when these may not be influential.
    b. Vivid Seats data is also the teams that were most popular by state in the year 2016, meaning that the data might suffer recency bias.
4. Measuring on a monthly level: By making the data more granular it might expose the true nature of the trends and be more significant than total season performance. Additionally, it would be easier to line up all sports performances, especially those that span across two calendar years (NBA, NHL, and NFL postseason).
5. Focusing on individual states: Focusing on a few states that are most similar to DC, meaning the capital is home to the sports teams and the cities are major metropolitans, might provide more clear results. This would allow for more in depth analysis of preferred sports teams (in North Carolina could better identify preferred college teams since UNC Chapel Hill, NC State, and Duke are all in the Raleigh area and are major teams) and other subtleties that could not be addressed here due to the expansiveness of the data.

    a. The notable states excluded from this study are excellent examples of states that could have been most aptly compared to Washington DC. Those states and capitals include Denver Colorado, Atlanta Georgia, and Boston Massachusetts.

6. Redefining Sports and Control states: States were split into the two groups to assess whether the fundamentals that encourage multiple professional sports teams to exist in a state also have different preferences. Those unique fundamentals are likely to attract many other substitutes for the utility that sports provide. However, the line of having two professional sports teams to qualify is a bit arbitrary. More subtle trends could be identified by how regions respond to different sports, i.e., the Northeast is likely to place a higher value on hockey and states that play in the SEC are likely to value college football more. The relationship's directing might even flip.
7. Sports States Outnumbering Control States: As discussed, sports states significantly outnumber control states in the study despite there being more control states in the continental US. This appears to be relatively random but could also be the result of self-sorting. States that have the ability to attract multiple sports teams might also have other booming industries and larger populations which require more regulation and communication of the regulation. To effectively communicate the changing regulation landscape these states would be more likely to digitize their register.

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Websites

The links listed in the following table were used for this research. The specific use or information used from each website is defined in the description column.

TABLE 21: Link Sources

Link Reference Number	Link	Description
1	http://www.statescape.com/resources/regulatory/registers/	Link to all state registers
2	https://www.sports-reference.com/	Link to where all of the sports data was collected from
3	https://www.statista.com/statistics/198486/number-of-governors-in-the-us-by-political-party-affiliation/	Information on Governors data
4	https://libguides.princeton.edu/politics/american/states	Source of comparison data in appendix 7.1
5	https://apps.bea.gov/regional/docs/product/	Source of state level GDP
6	https://www.vividseats.com/blog/most-popular-college-football-team-every-state	Most popular college football team by state
7	https://www.vividseats.com/blog/most-popular-mlb-teams-by-us-state	Most popular professional baseball team by state
8	https://www.vividseats.com/blog/most-popular-nba-teams-by-us-state	Most popular professional basketball team by state
9	https://www.vividseats.com/blog/most-popular-nfl-teams-by-us-state	Most popular professional football team by state
10	https://www.vividseats.com/blog/most-popular-nhl-teams-by-us-state	Most popular professional NHL team by state
11	https://www.nytimes.com/interactive/2014/08/13/upshot/where-people-in-each-state-were-born.html?_r=1#Maryland	This article and its supporting sources were used to create Table 1: Native Rates
12	https://www.statista.com/statistics/277353/us-sports-teams-with-the-most-facebook-fans/	How the number of Facebook "likes" each sports team has was collected

Viewership Table Sources

Below is the same table presented in section 2.2 but with the extra column that provides the specific source of the statistic. As mentioned in the article, there are five sources that contribute to the creation of this table.

TABLE 22: TV Viewership Sources

Year	Event	Viewership	Us Population by Year	Source
2017	Super Bowl	111.3 Million	324.5 Million	https://variety.com/2018/tv/news/super-bowl-lii-ratings-
2018	Super Bowl	103.4 Million	326.8 Million	https://variety.com/2018/tv/news/super-bowl-lii-ratings-
2018	NFL AFC Division Championship	44.1 Million	326.8 Million	http://www.sportsmediawatch.com/2018/07/most-watched-sporting-events-2018-halftime/
2018	NFL NFC Division Championship	42.8 Million	326.8 Million	http://www.sportsmediawatch.com/2018/07/most-watched-sporting-events-2018-halftime/
2018	College Football Championship	28.4 Million	326.8 Million	http://www.sportsmediawatch.com/2018/07/most-watched-sporting-events-2018-halftime/
2016	2016 Summer Olympics	25.4 Million/Night in Primetime	322.2 Million	https://www.npr.org/sections/thetorch/2016/08/23/491024790/nbc-declares-rio-a-media-success-though-tv-ratings-were-down
2018	2018 Winter Olympics	19.8 Million/Night	326.8 Million	https://variety.com/2018/tv/news/2018-winter-olympics-ratings-2-1202710137/
2018	Masters Tournament (Golf)	13 Million	326.8 Million	https://www.usatoday.com/story/sports/golf/2018/04/09/masters-final-round-ratings-cbs-jump-14-percent-last-year/498284002/
2014	Soccer World Cup	3.55 Milllion/Game	318.6 Million	http://fortune.com/2018/06/22/world-cup-us-ratings-fox-telemundo/
2018	Soccer World Cup	1.98 Million/Game	326.8 Million	http://fortune.com/2018/06/22/world-cup-us-ratings-fox-telemundo/

APPENDIX A: STATE PROFILES

The purpose of this appendix is to support the case for using Random effects and that the data are truly representative of the United States. The states used here are diverse in population, land size, economic size, top industries, region, and political leaning. To present the diversity of the states the following tables and graphics have been generated.

Regionally, the states in this study come from all over the United States as seen in the map below. The shaded states are included in the study. Additionally, exactly half of the United States is used in the study.

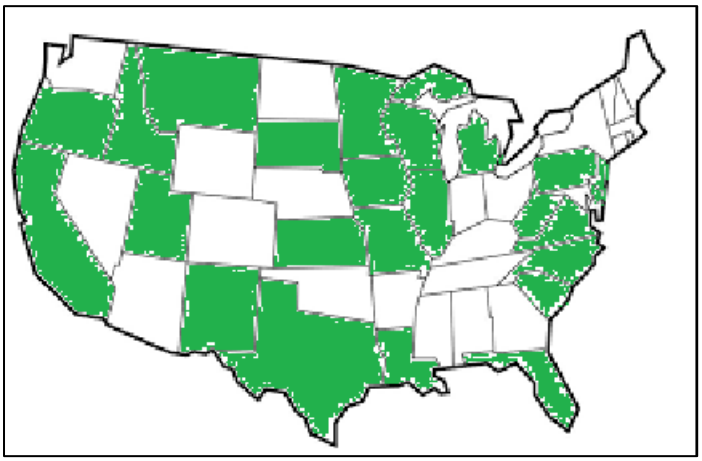

FIGURE 30: States in the Study

The state profiles below use only 2017 data and represent the differences in the states. Specifically looking at the ranks there are states from across the spectrum for each category. For example, in the land size rankings the 3rd, 4th, 5th, 41st, 46th, and 49th largest states are included. The pattern continues for population and per capita personal income. Summary statistics are at the bottom of the table and show that overall the states are very representative of the greater population given that the mean and median rankings are relatively close to 25, the true mean and median of the population. Additionally, the top three growing industries in each state reflect the populations or specializations that are expanding

within each state. In total, thirteen industries are represented with some appearing as many as 20 times and others appearing as few as once.

TABLE 23: State profiles

State	Size in Square Miles (2010) National Ranking	Population National Ranking	Density per Square Mile National Ranking	Per Capita Income (Dollars) National Ranking	Top Growing Industry	Second Top Growing Industry	Third Top Growing Industry
Arizona	6	14	33	42	Health care and social assistance	Construction	State and Local Government
California	3	1	11	6	Information	Health care and social assistance	Professional, scientific, and technical services
Delaware	49	45	6	21	Professional, scientific, and technical services	Finance and insurance	Health care and social assistance
Florida	26	3	8	26	Construction	Health care and social assistance	Professional, scientific, and technical services
Idaho	11	39	44	44	Durable Goods	Construction	Farm
Illinois	24	6	12	15	Health care and social assistance	Professional, scientific, and technical services	Wholesale trade
Iowa	23	30	36	28	State and Local Government	Durable goods	Nondurable goods
Kansas	13	35	41	24	Nondurable goods	Health care and social assistance	Transportation and warehousing
Louisiana	33	25	24	37	Construction	Health care and social assistance	Federal, Civilian Government
Michigan	22	10	18	30	Construction	Professional, scientific, and technical services	Durable goods
Minnesota	14	22	30	14	Health care and social assistance	Finance and insurance	Construction
Missouri	18	18	28	36	Professional, scientific, and technical services	Health care and social assistance	Finance and insurance
Montana	4	44	48	35	Health care and social assistance	Construction	State and Local Government
New Jersey	46	12	1	3	Finance and insurance	Health care and social assistance	Professional, scientific, and technical services
New Mexico	5	36	45	48	Construction	Professional, scientific, and technical services	Farm
North Carolina	29	9	15	39	Professional, scientific, and technical services	Health care and social assistance	Construction
Oregon	10	27	39	27	Construction	Health care and social assistance	Professional, scientific, and technical services
Pennsylvania	32	5	9	16	Health care and social assistance	Construction	Finance and insurance
South Carolina	40	23	19	45	Construction	State and Local Government	Health care and social assistance
South Dakota	16	46	46	22	Health care and social assistance	State and Local Government	Nondurable goods
Texas	2	2	25	25	Professional, scientific, and technical services	Health care and social assistance	Transportation and warehousing
Utah	12	31	40	41	Professional, scientific, and technical services	Health care and social assistance	Construction
Virginia	36	13	14	12	Professional, scientific, and technical services	Federal, Civilian Government	Finance and insurance
West Virginia	41	38	29	49	Construction	Health care and social assistance	Mining, quarrying, and oil and gas extraction
Wisconsin	25	20	26	23	Health care and social assistance	State and Local Government	Construction
Median Rankings of States	**20**	**22.5**	**26.5**	**27.5**			
Mean Rankings of States	**21.46**	**22.25**	**25.88**	**28.54**			

TABLE 24: Top Industries for States in Data

Industry	Number of States this Industry is Top Growing	Number of States this Industry is Second Top Growing	Number of States this Industry is Third Top Growing	Total Appearances
Construction	7	4	4	15
Durable Goods	1	1	1	3
Farm	0	0	2	2
Federal, Civilian Government	0	1	1	2
Finance and insurance	1	2	3	6
Health care and social assistance	7	11	2	20
Information	1	0	0	1
Mining, Quarrying, and Oil and Gas Extraction	0	0	1	1
Nondurable goods	1	0	2	3
Professional, scientific, and technical services	6	3	4	13
State and Local Government	1	3	2	6
Transportation and Warehousing	0	0	2	2
Wholesale Trade	0	0	1	1

In addition to the theoretical assessment of the data seen above, Hausman tests were performed using the small regressions that were generated in 4.2.1. All Hausman tests resulted in the support of using Random Effects.

APPENDIX B: SPORTS IMAGES & TESTS OF NORMALITY

Below are the tests of normality for wins and winning percentage for each of the five sports. The null hypothesis for all three tests is that the data is normally distributed. At the 5% confidence level all of the tests for all of the variables lead to the conclusion that the test is not normally distributed. However, by reviewing each of the subsequent sports sections it can be seen in the histograms that the data is approximately normal.

Table 25: Shapiro-Wilk Tests of Normality

Shapiro Wilk Tests for Normality					
Variable	**Obs**	**W**	**V**	**z**	**Prob>z**
NFL Winning Percentage	536	0.99314	2.457	2.168	0.01508
NBA Winning Percentage	478	0.98421	5.102	3.909	0.00005
MLB Winning Percentage	521	0.98923	3.759	3.189	0.00071
NHL Winning Percentage	444	0.9802	5.986	4.279	0.00001
NCAA Winning Percentage	544	0.9844	5.662	4.183	0.00001
NFL Wins	536	0.99246	2.7	2.395	0.00832
NBA Wins	478	0.98644	4.382	3.544	0.0002
MLB Wins	521	0.98897	3.852	3.248	0.00058
NHL Wins	444	0.96375	10.957	5.724	0
NCAA Wins	544	0.99236	2.773	2.461	0.00692
Null Hypothesis: Data is normally distributed. For Prob>z less than 0.05 this hypothesis is rejected					

Table 26: Shapiro-Francia Tests of Normality

Shapiro Francia Tests for Normality					
Variable	**Obs**	**W**	**V**	**z**	**Prob>z**
NFL Winning Percentage	536	0.99343	2.522	2.039	0.02074
NBA Winning Percentage	478	0.9856	4.997	3.519	0.00022
MLB Winning Percentage	521	0.98934	3.992	3.045	0.00116
NHL Winning Percentage	444	0.98002	6.495	4.073	0.00002
NCAA Winning Percentage	544	0.98509	5.798	3.876	0.00005
NFL Wins	536	0.99272	2.795	2.265	0.01176
NBA Wins	478	0.98773	4.257	3.169	0.00077
MLB Wins	521	0.98917	4.053	3.078	0.00104
NHL Wins	444	0.96483	11.433	5.304	0.00001
NCAA Wins	544	0.9929	2.762	2.24	0.01253
Null Hypothesis: Data is normally distributed. For Prob>z less than 0.05 this hypothesis is rejected					

Table 27: Skewness-Kurtosis Tests for Normality

Skewness/Kurtosis Tests for Normality					
Variable	**Obs**	**Pr(Skewness)**	**Pr(Kurtosis)**	**adj chi2(2)**	**Prob>chi2**
NFL Winning Percentage	536	0.1046	0.0001	14.95	0.0006
NBA Winning Percentage	478	0.019	0.0003	16.34	0.0003
MLB Winning Percentage	521	0.1014	0.0015	11.57	0.0031
NHL Winning Percentage	444	0	0.257	16.8	0.0002
NCAA Winning Percentage	544	0.0001	0.7188	13.75	0.001
NFL Wins	536	0.1104	0	17.64	0.0001
NBA Wins	478	0.0656	0	17.99	0.0001
MLB Wins	521	0.049	0.003	11.49	0.0032
NHL Wins	444	0	0.6835	21.65	0
NCAA Wins	544	0.0097	0.0135	11.61	0.003
Null Hypothesis: Data is normally distributed. For Prob>chi2 less than 0.05 this hypothesis is rejected					

MLB

In this section are the histograms of the MLB variables and scatter plots of pages and pages change vs MLB Wins and MLB Winning Percentage. The purpose of this section is to visualize the relationships between these baseball variables and the dependent variables, pages and pages change.

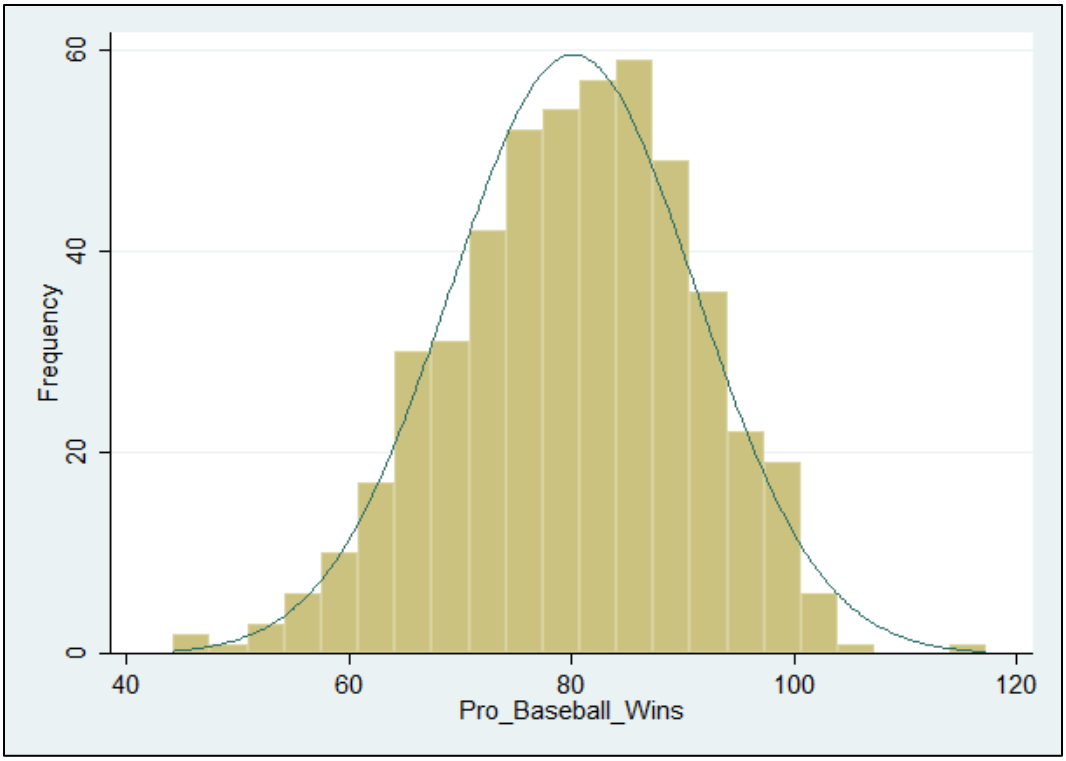

FIGURE 31: MLB Wins Histogram

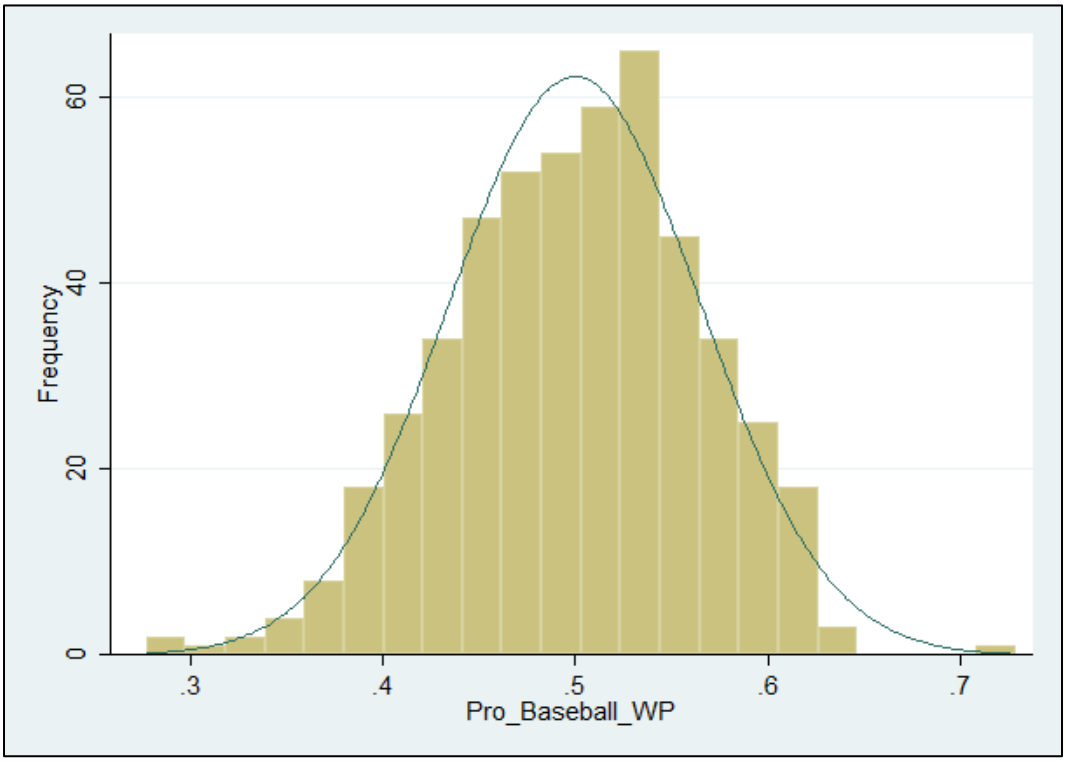

FIGURE 32: MLB Wins Percentage Histogram

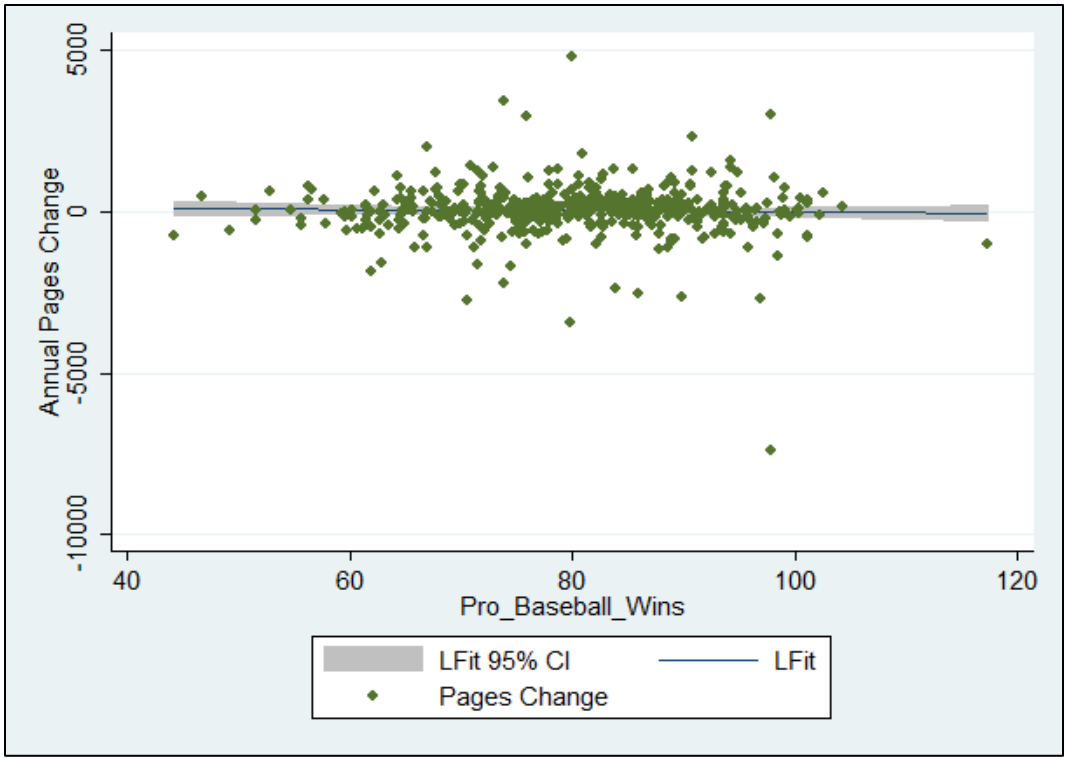

FIGURE 33: Pages Change vs MLB Wins (FE)

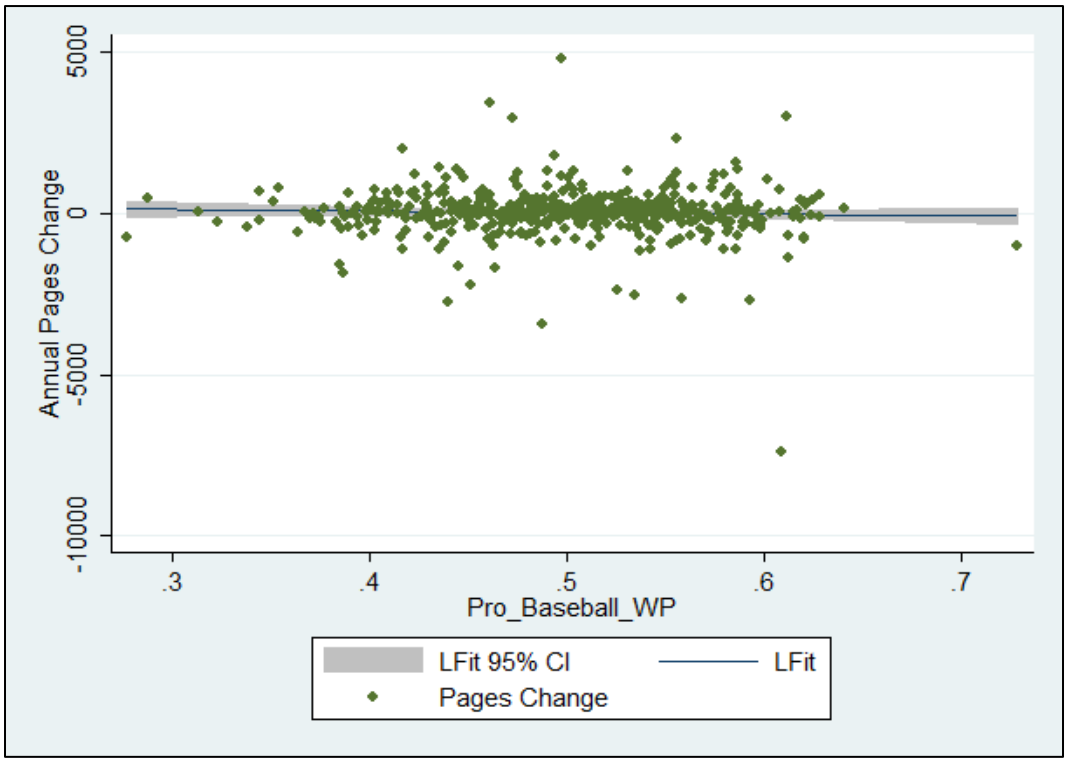

FIGURE 34: Pages Change vs MLB Win Percentage (FE)

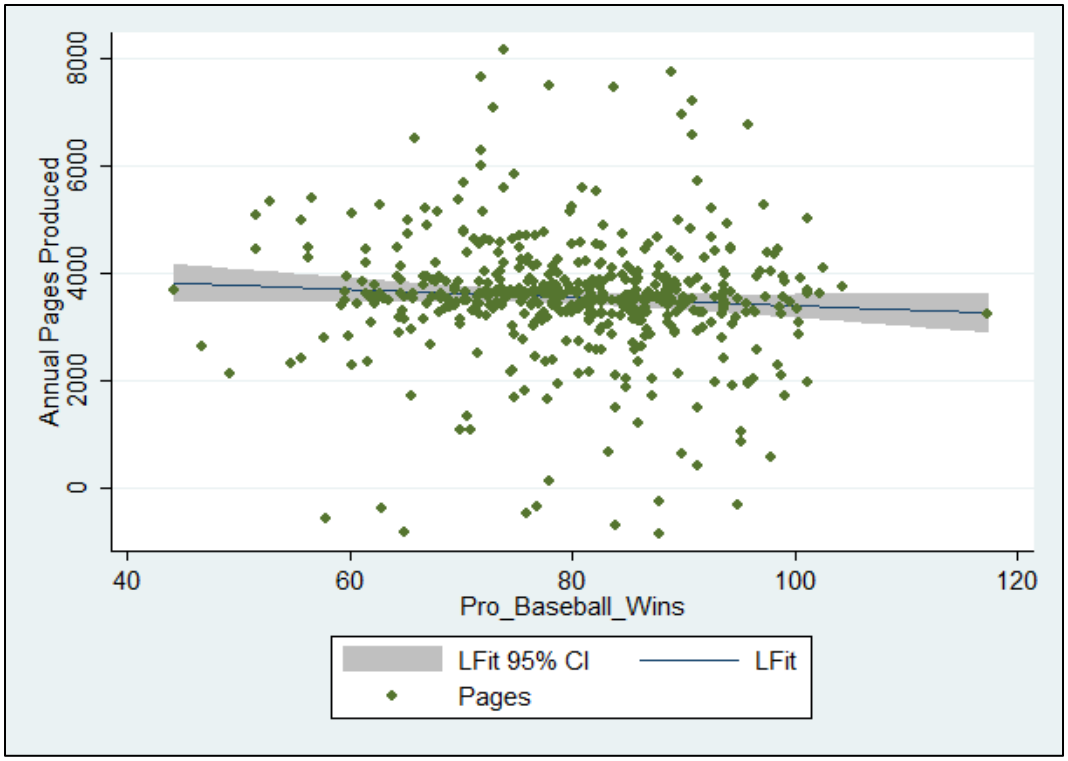

FIGURE 35: Pages vs MLB Wins (FE)

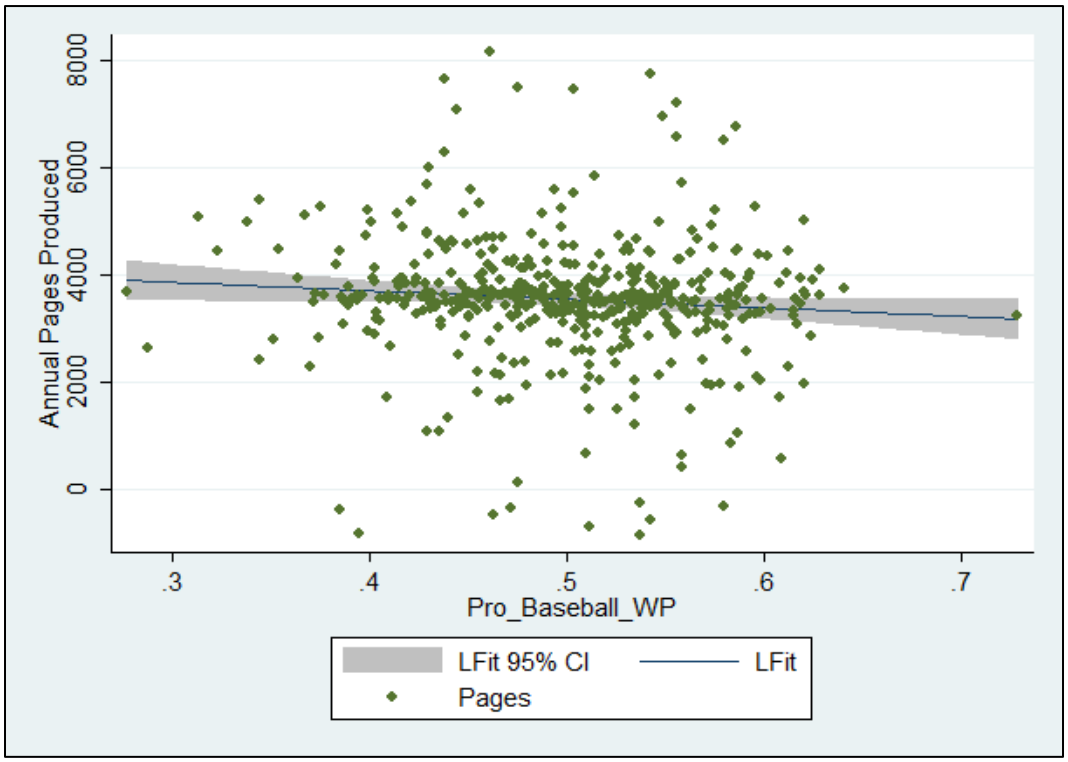

FIGURE 36: Pages vs MLB Win Percentage (FE)

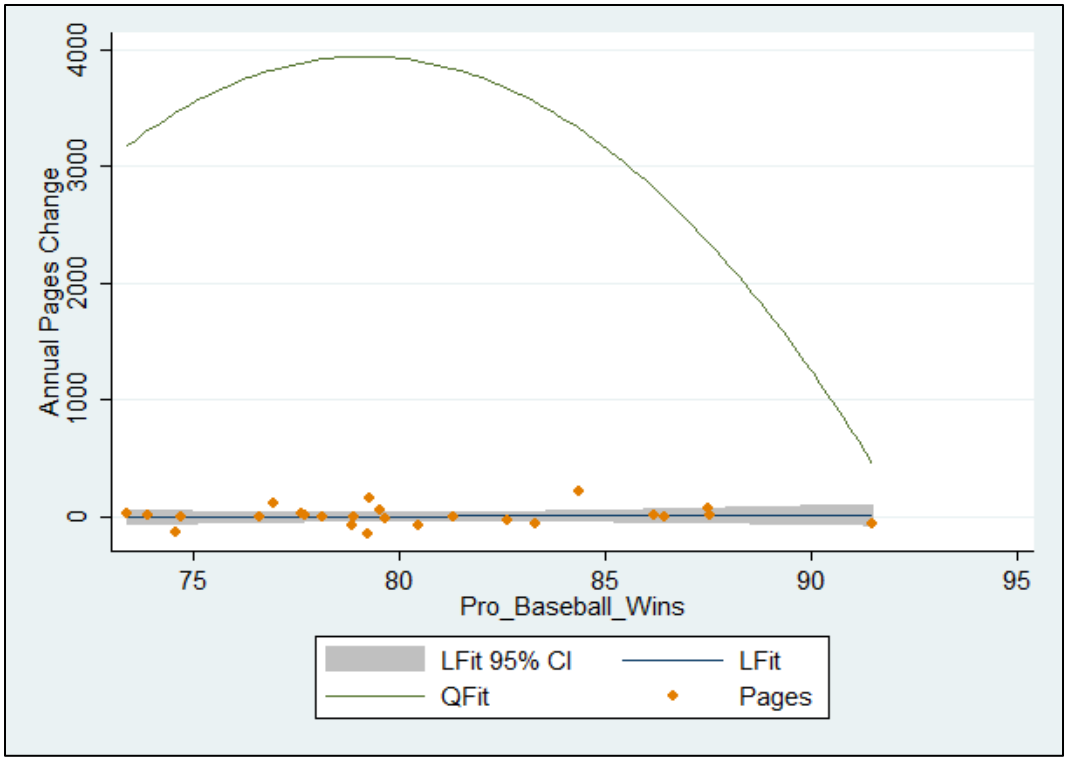

FIGURE 37: Pages Change vs MLB Wins (BE)

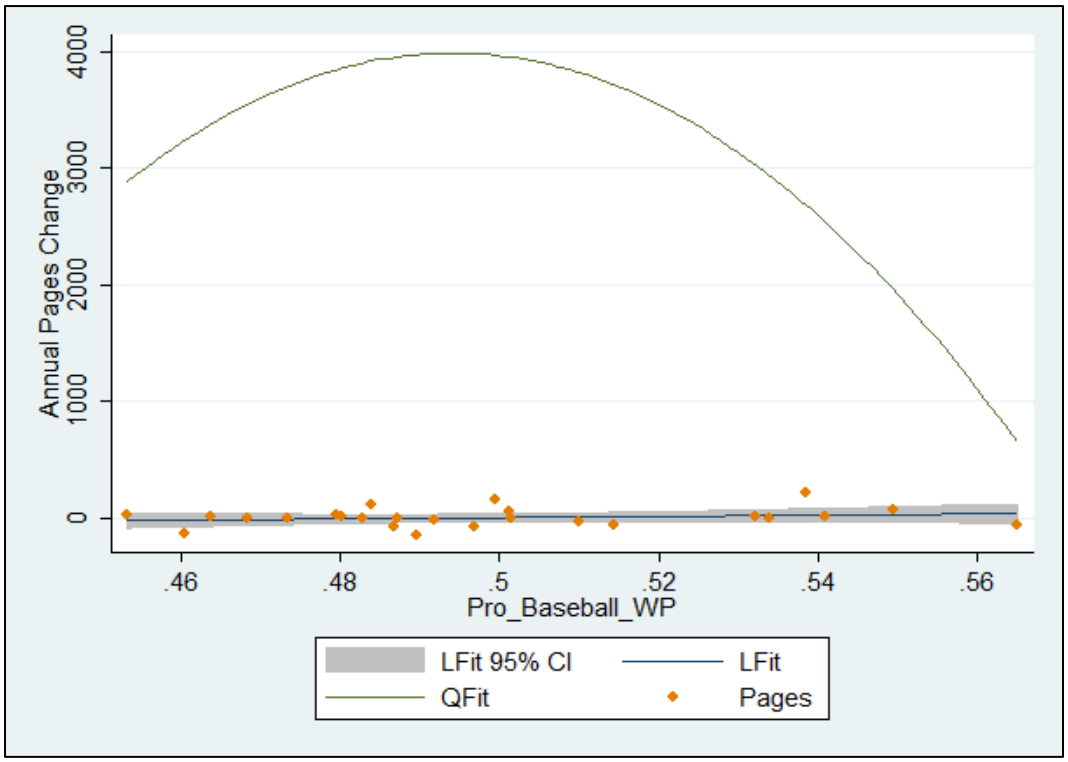

FIGURE 38: Pages Change vs MLB Win Percentage (BE)

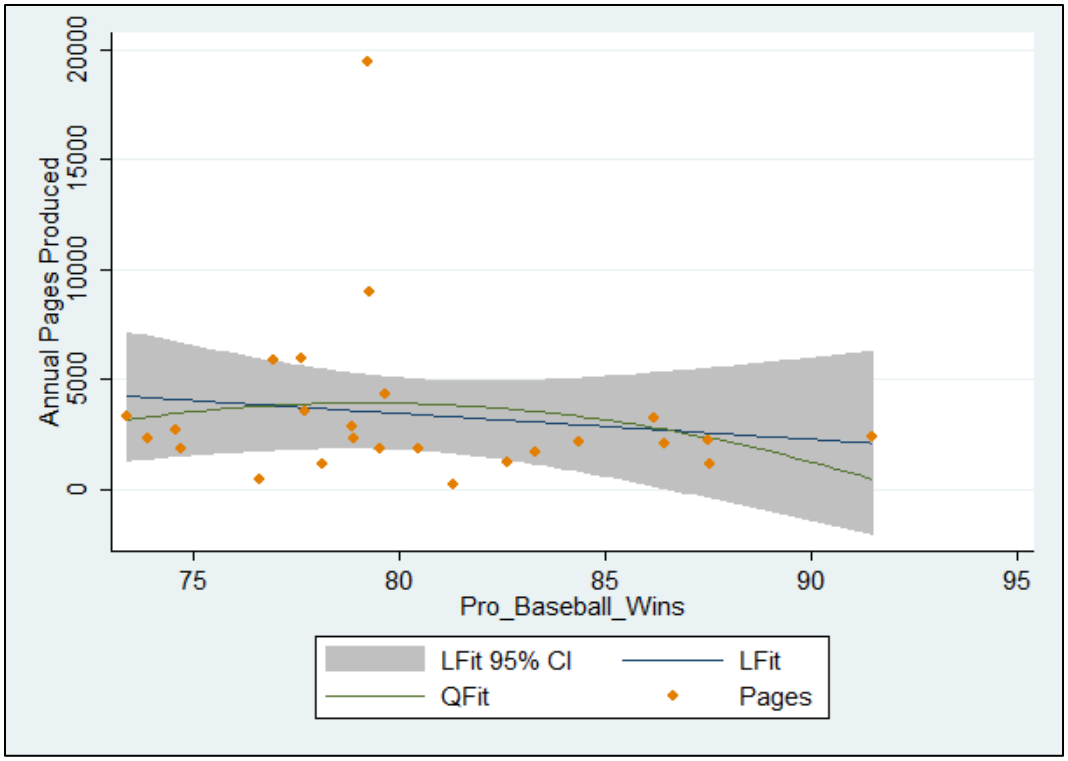

FIGURE 39: Pages vs MLB Wins (BE)

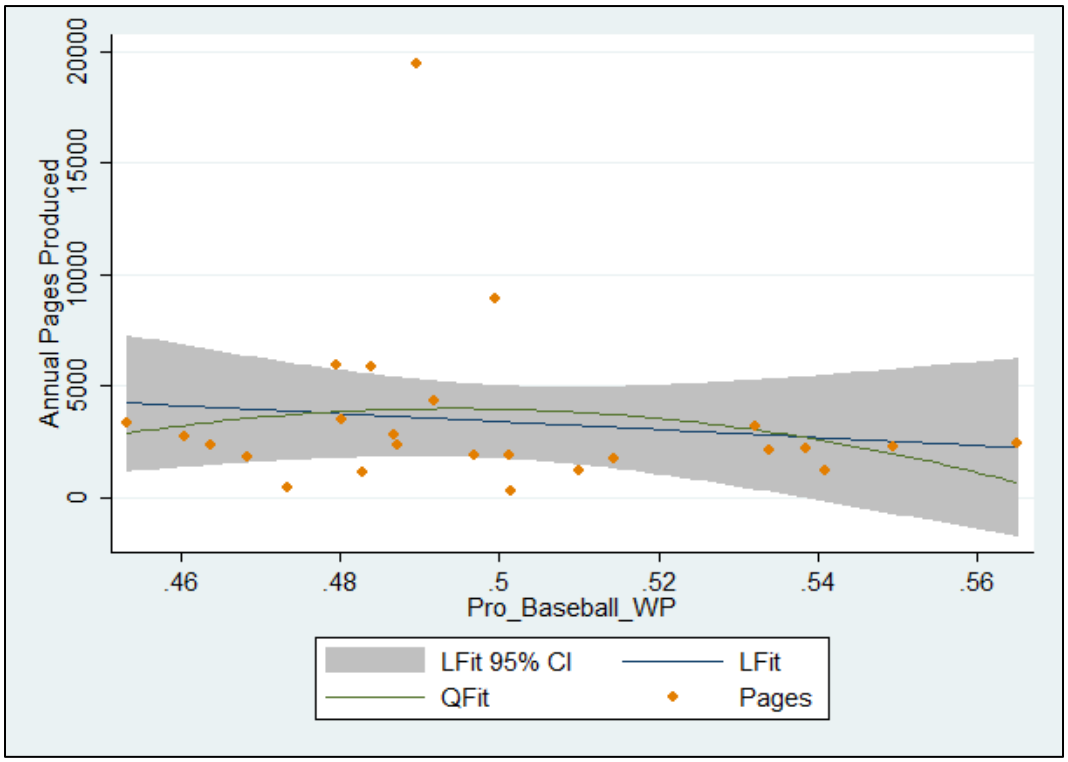

FIGURE 40: Pages vs MLB Win Percentage (BE)

NBA

In this section are the histograms of the NBA variables and scatter plots of pages and pages change vs NBA Wins and NBA Winning Percentage. The purpose of this section is to visualize the relationships between these basketball variables and the dependent variables, pages and pages change.

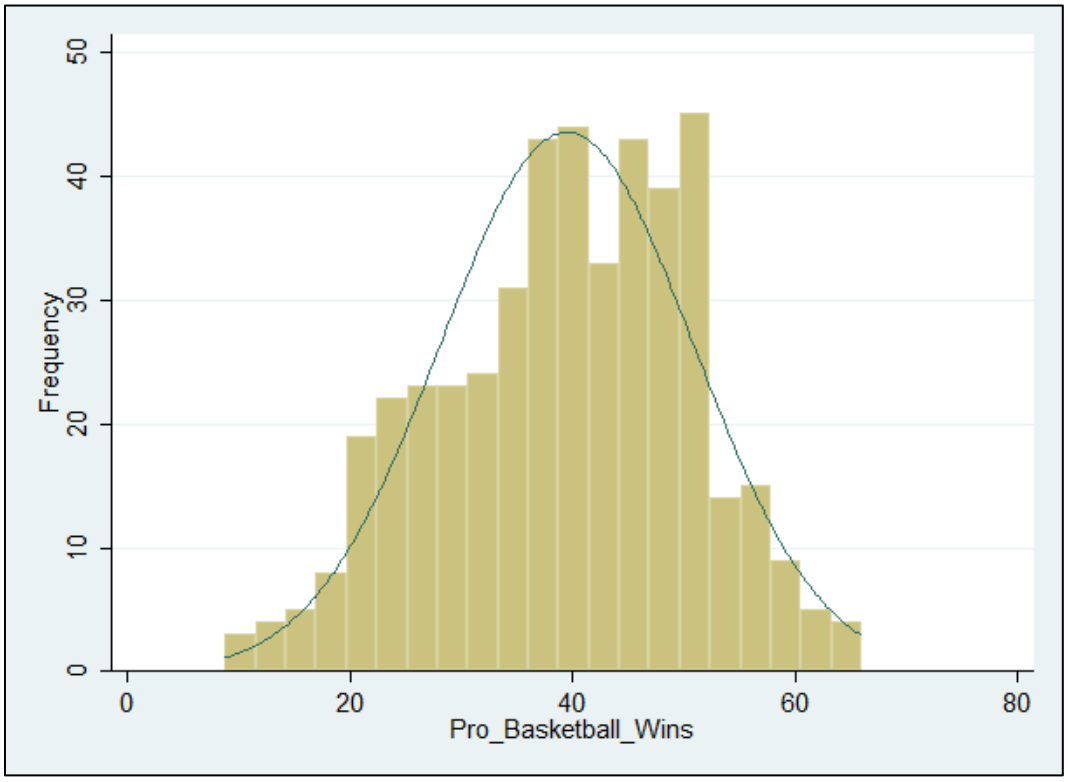

FIGURE 41: NBA Wins Histogram

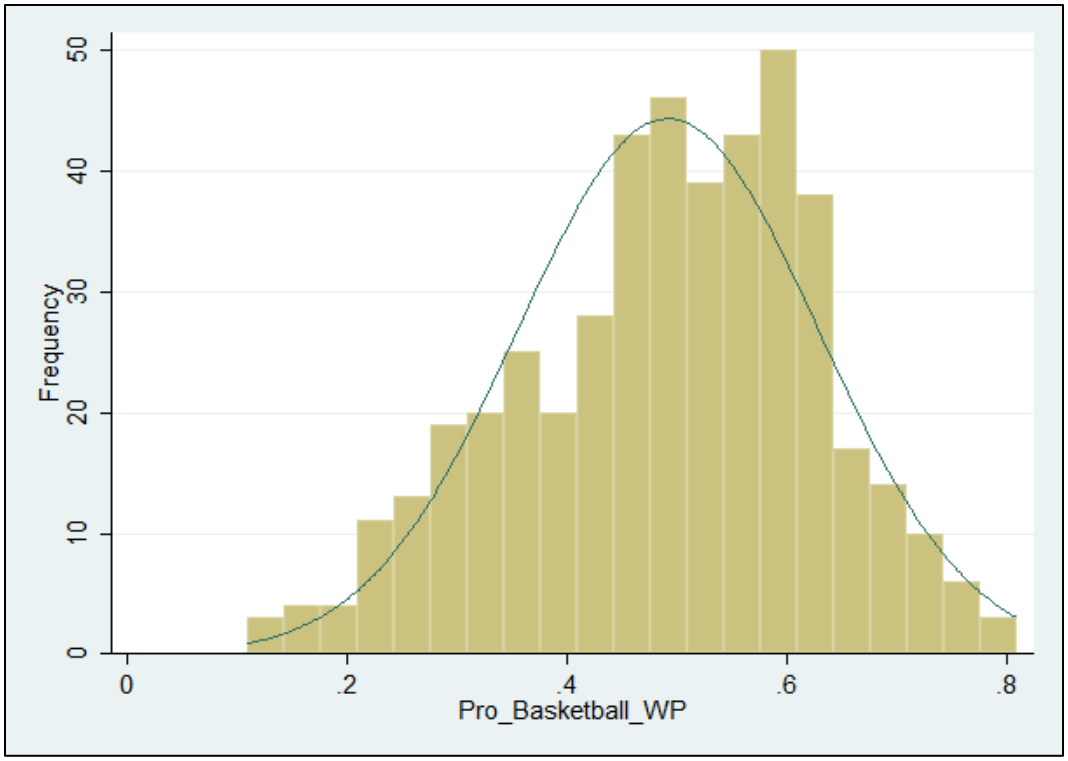

FIGURE 42: NBA Wins Percentage Histogram

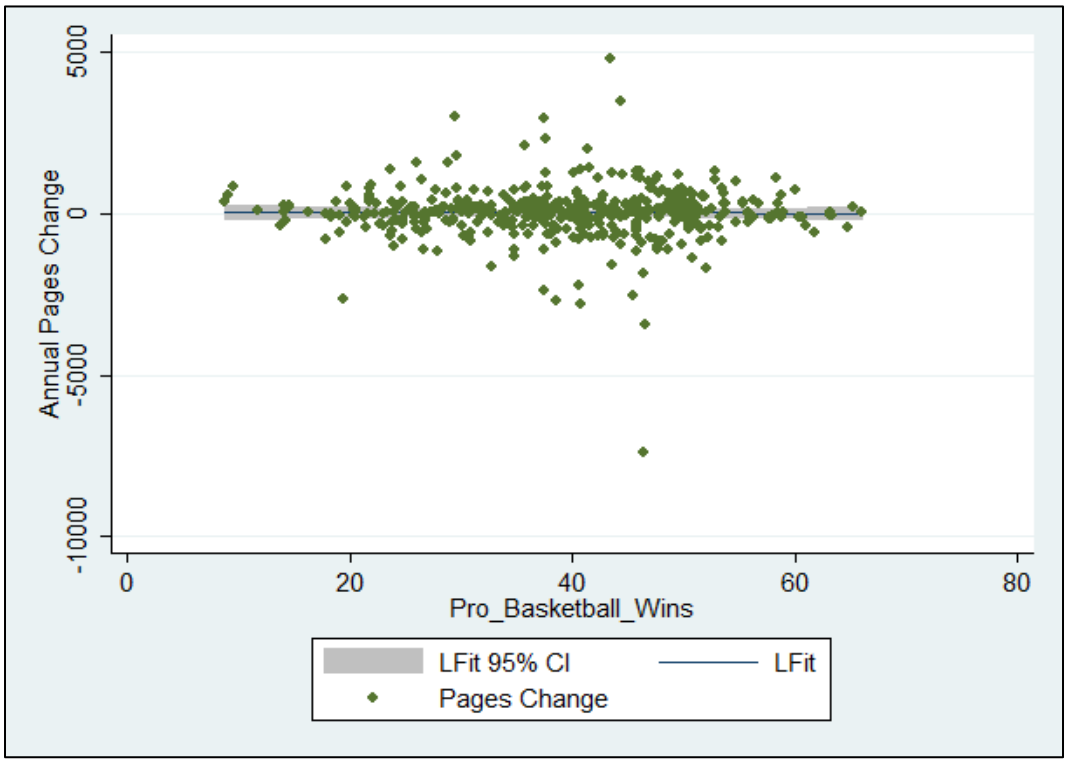

FIGURE 43: Pages Change vs NBA Wins (FE)

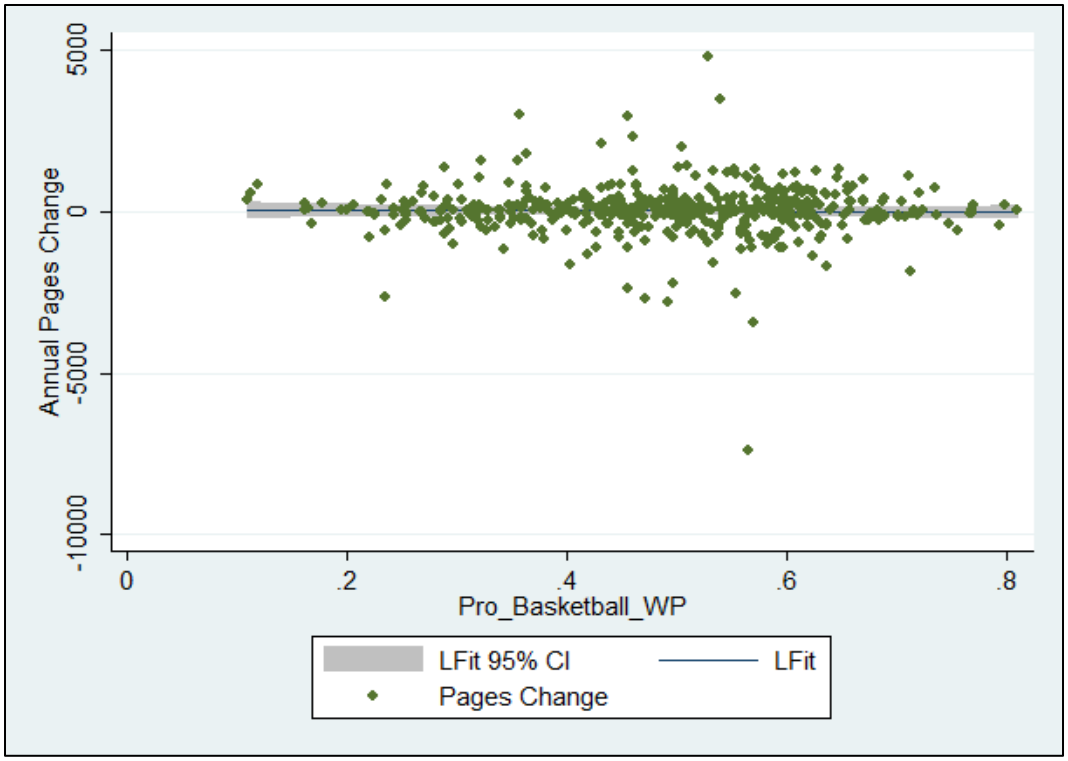

FIGURE 44: Pages Change vs NBA Win Percentage (FE)

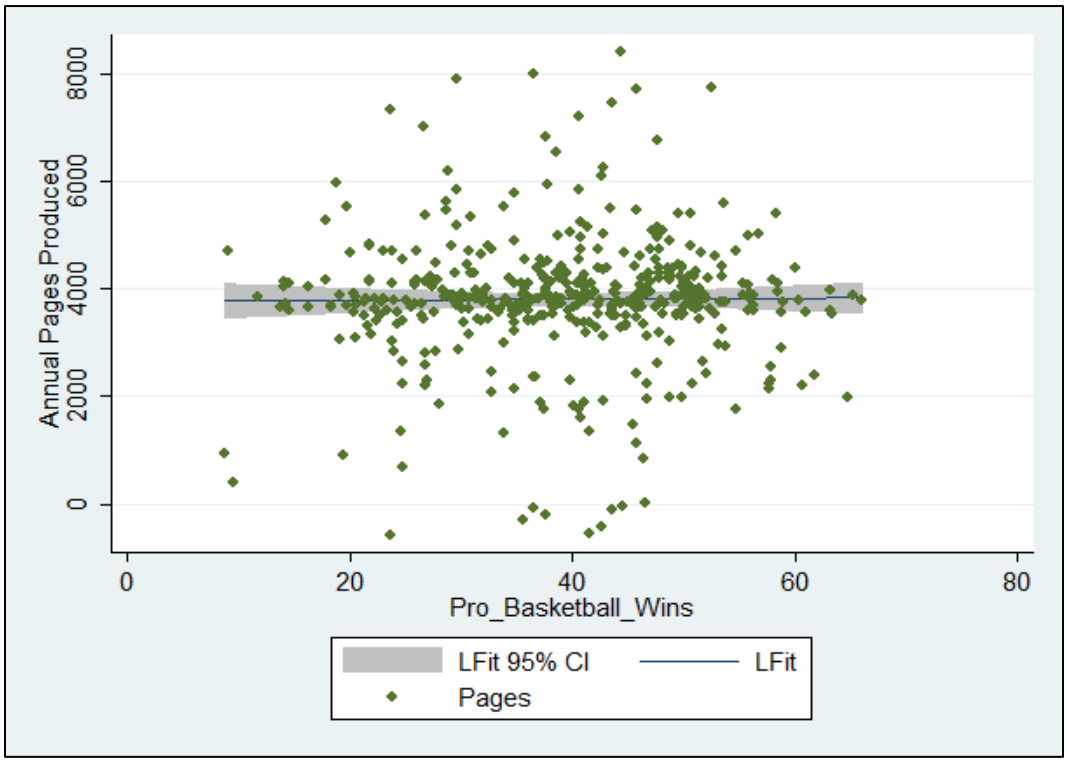

FIGURE 45: Pages vs NBA Wins (FE)

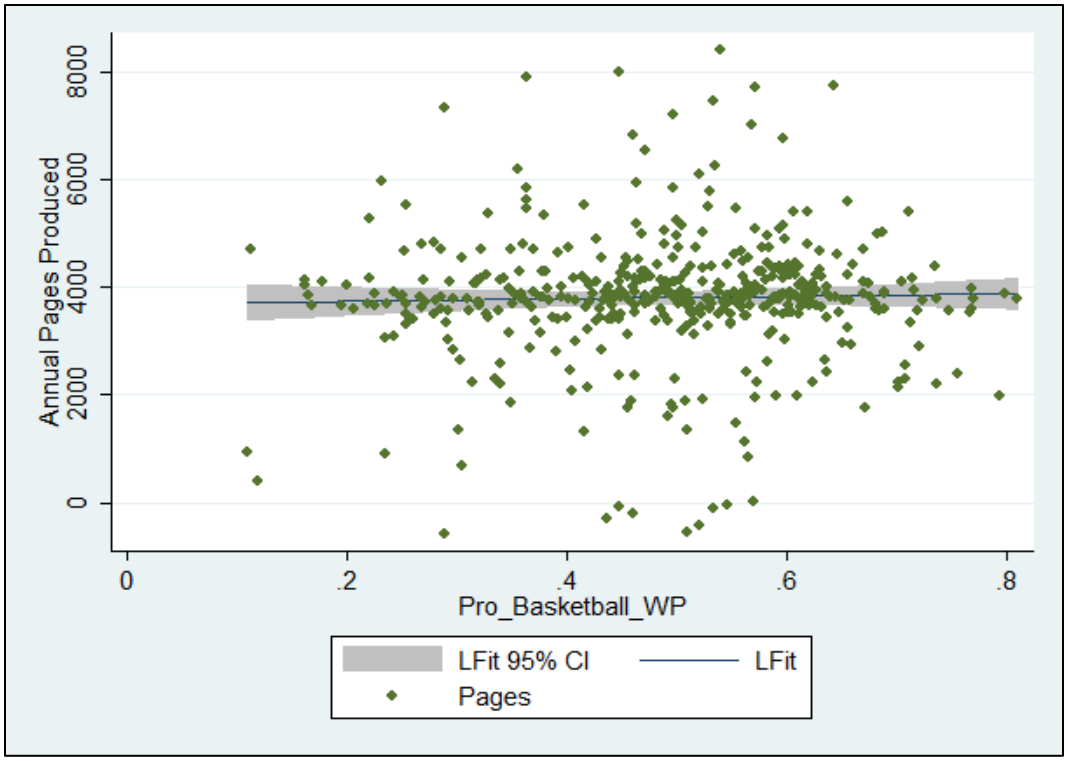

FIGURE 46: Pages vs NBA Win Percentage (FE)

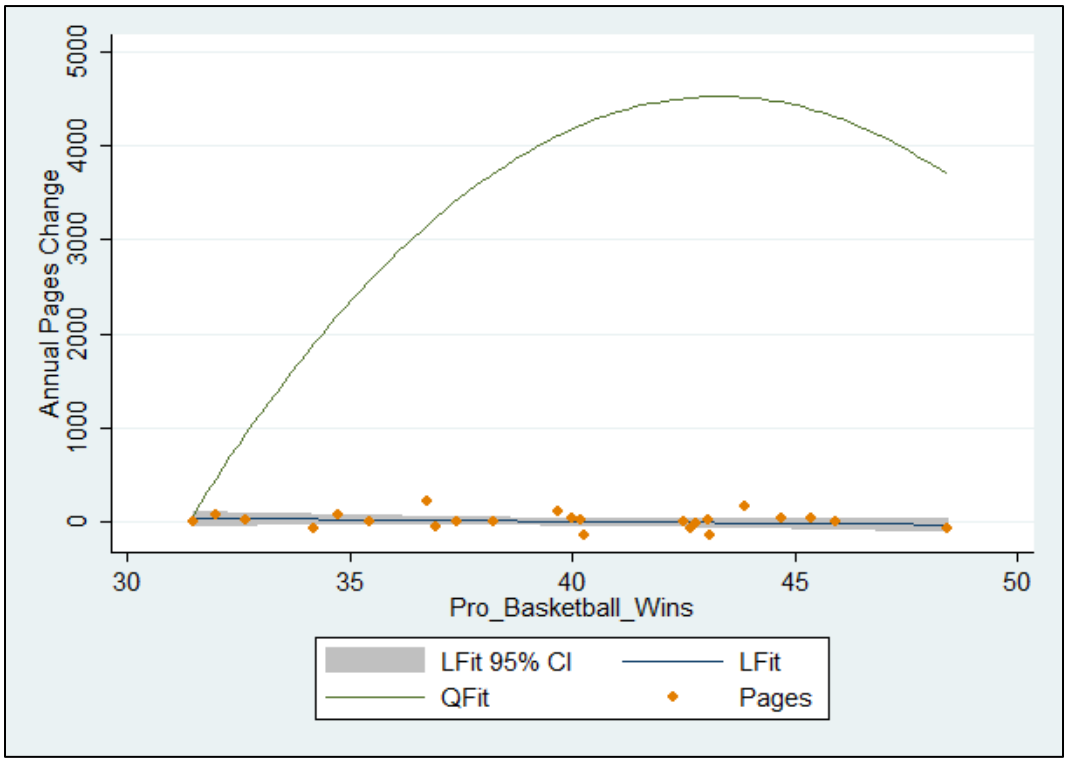

FIGURE 47: Pages Change vs NBA Wins (BE)

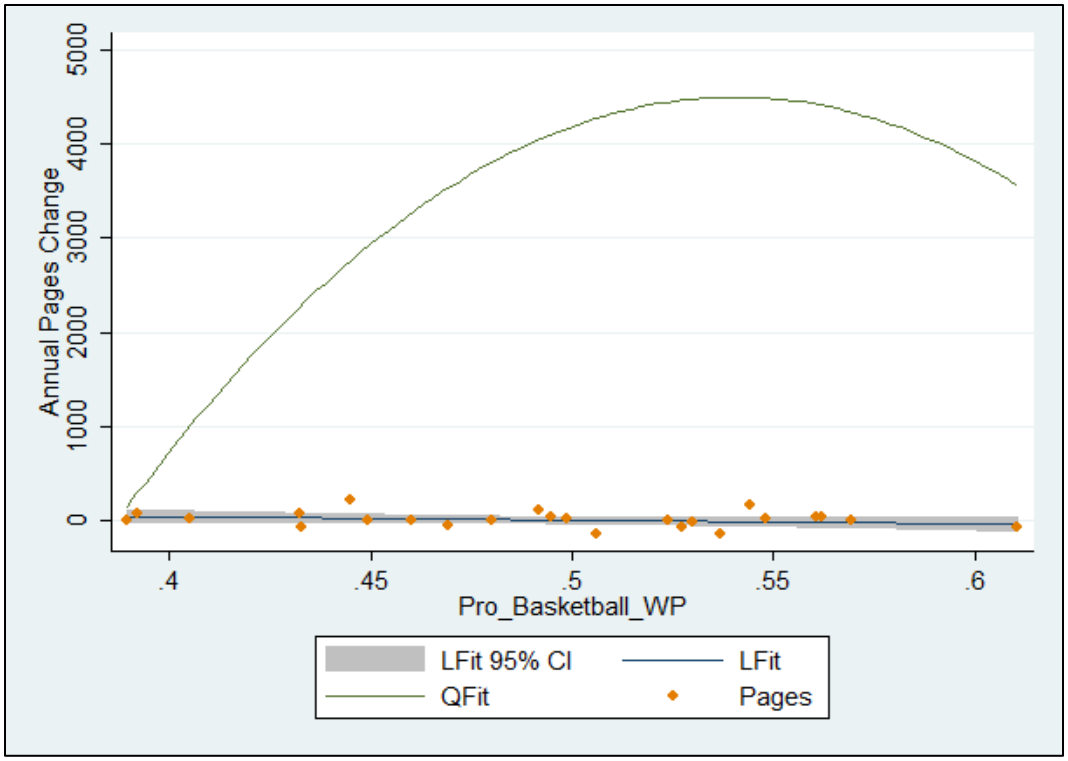

FIGURE 48: Pages Change vs NBA Win Percentage (BE)

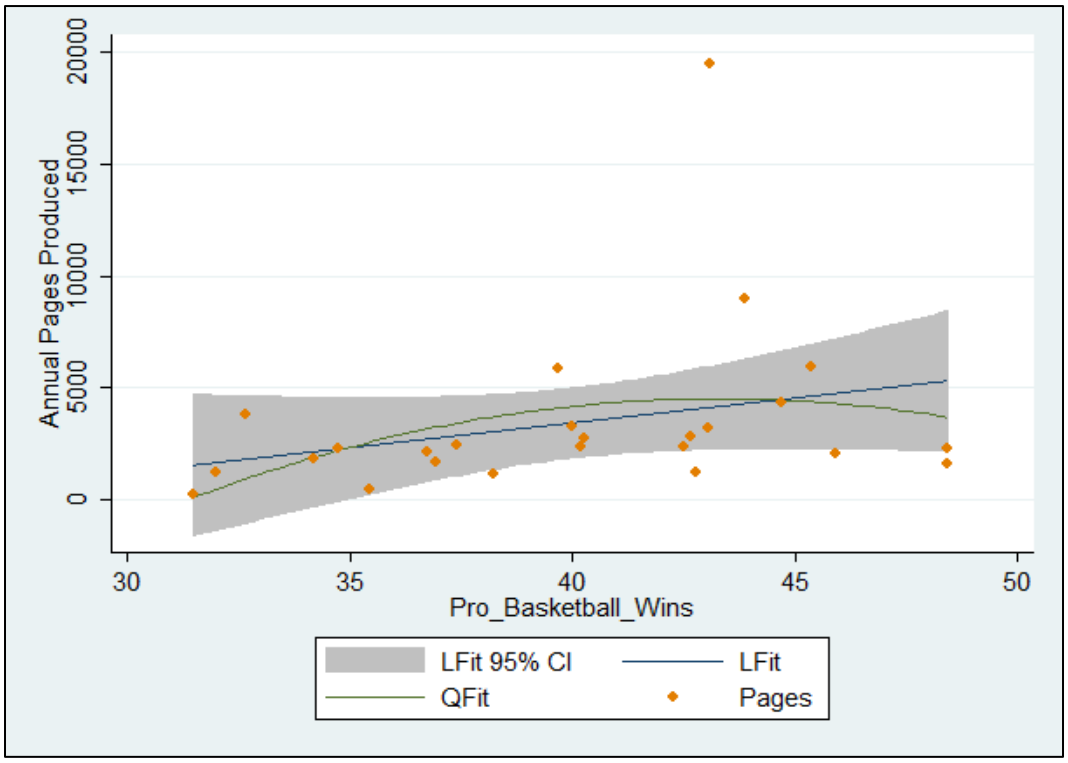

FIGURE 49: Pages vs NBA Wins (BE)

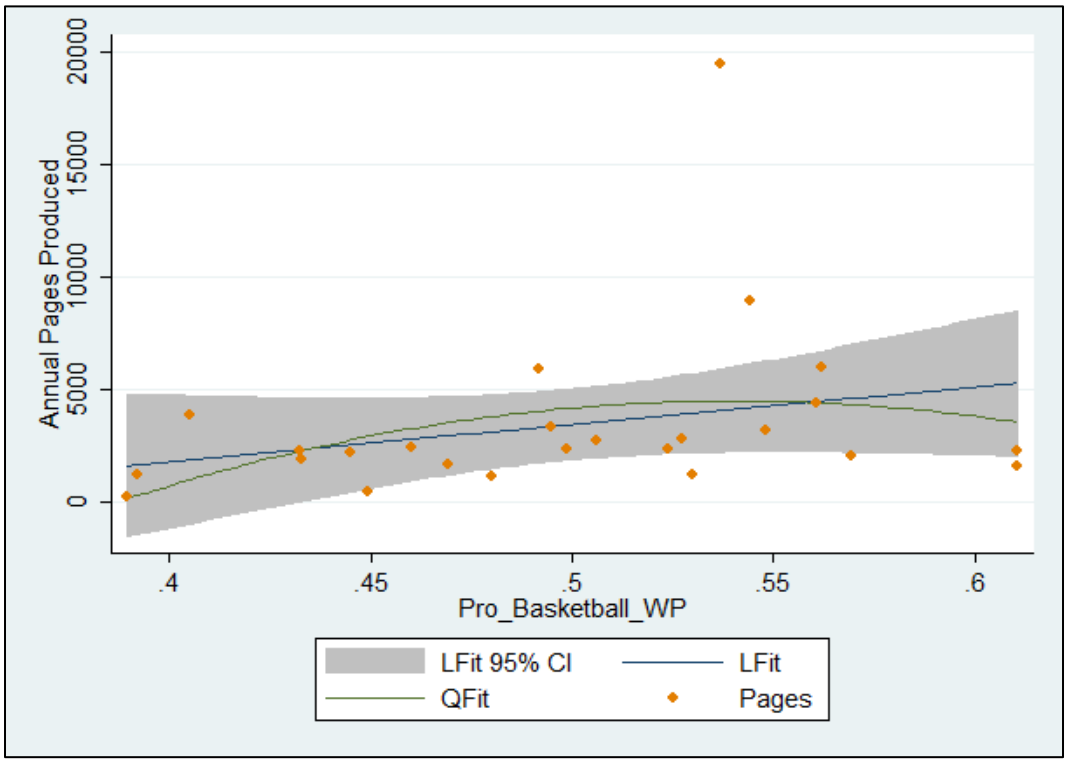

FIGURE 50: Pages vs NBA Win Percentage (BE)

NHL

In this section are the histograms of the NHL variables and scatter plots of pages and pages change vs NHL Wins and NHL Winning Percentage. The purpose of this section is to visualize the relationships between these hockey variables and the dependent variables, pages and pages change.

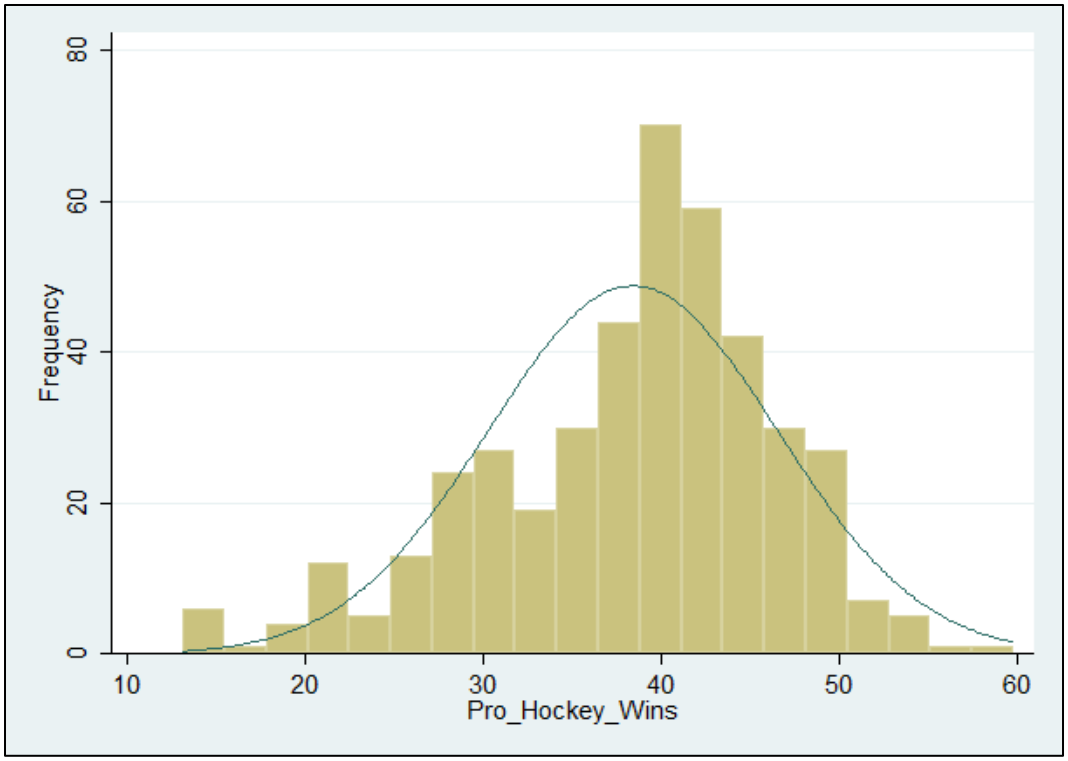

FIGURE 51: NHL Wins Histogram

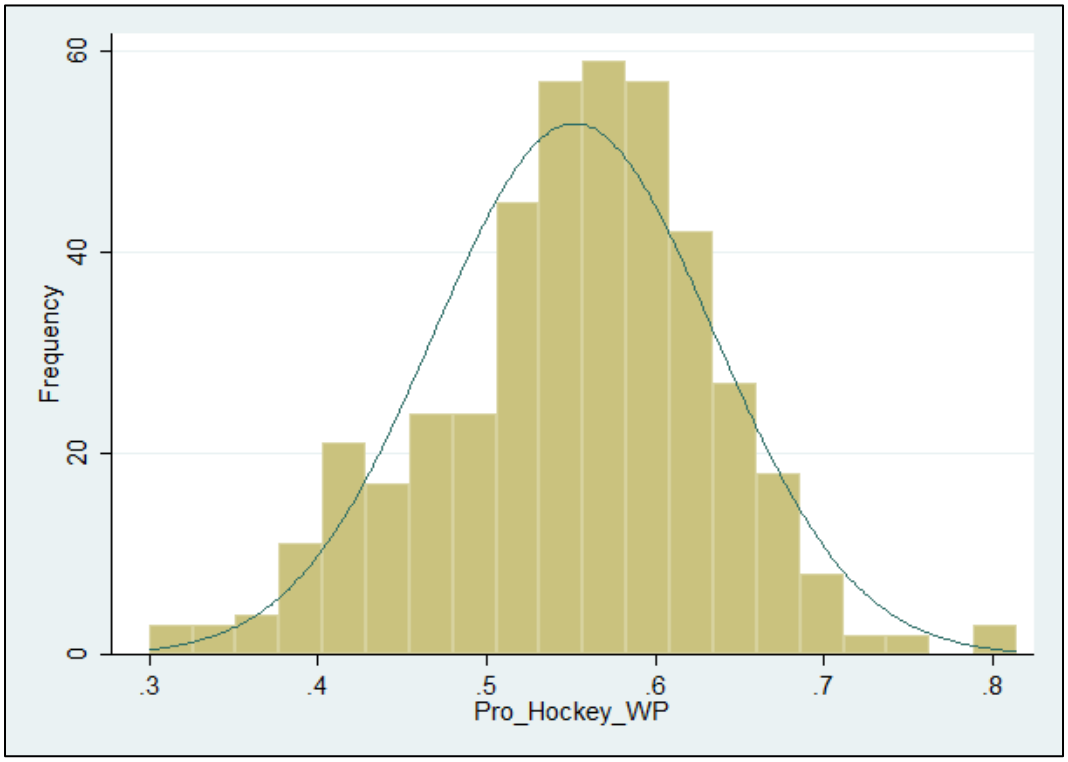

FIGURE 52: NHL Wins Percentage Histogram

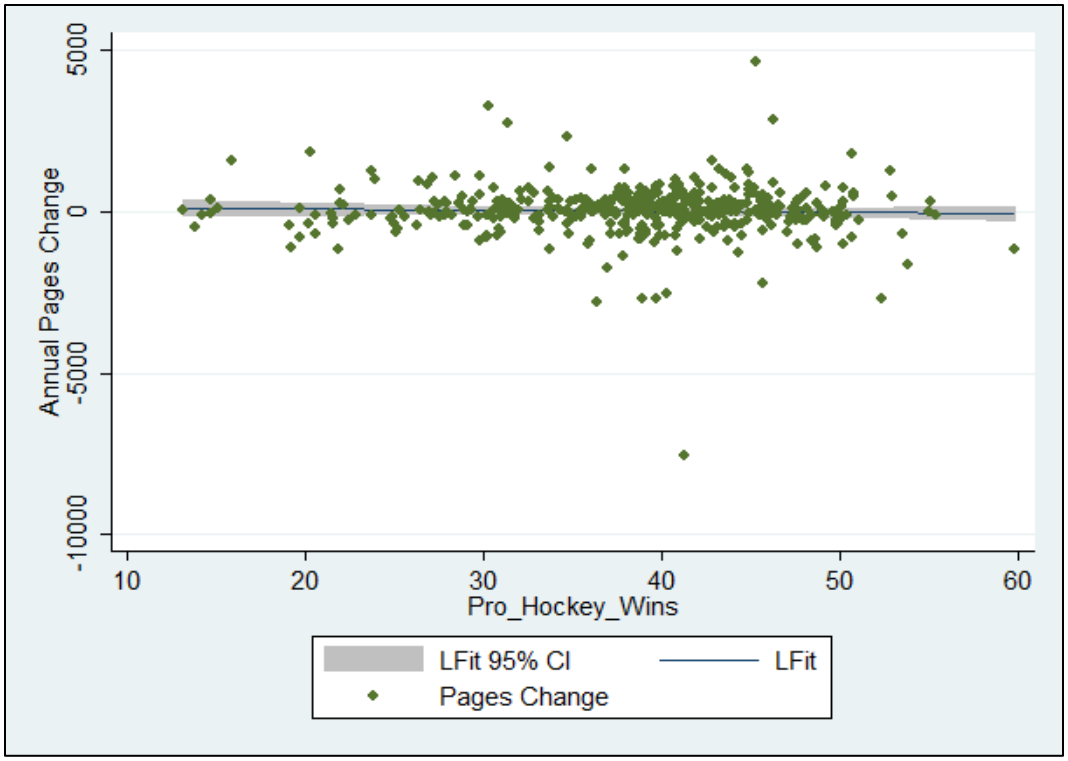

FIGURE 53: Pages Change vs NHL Wins (FE)

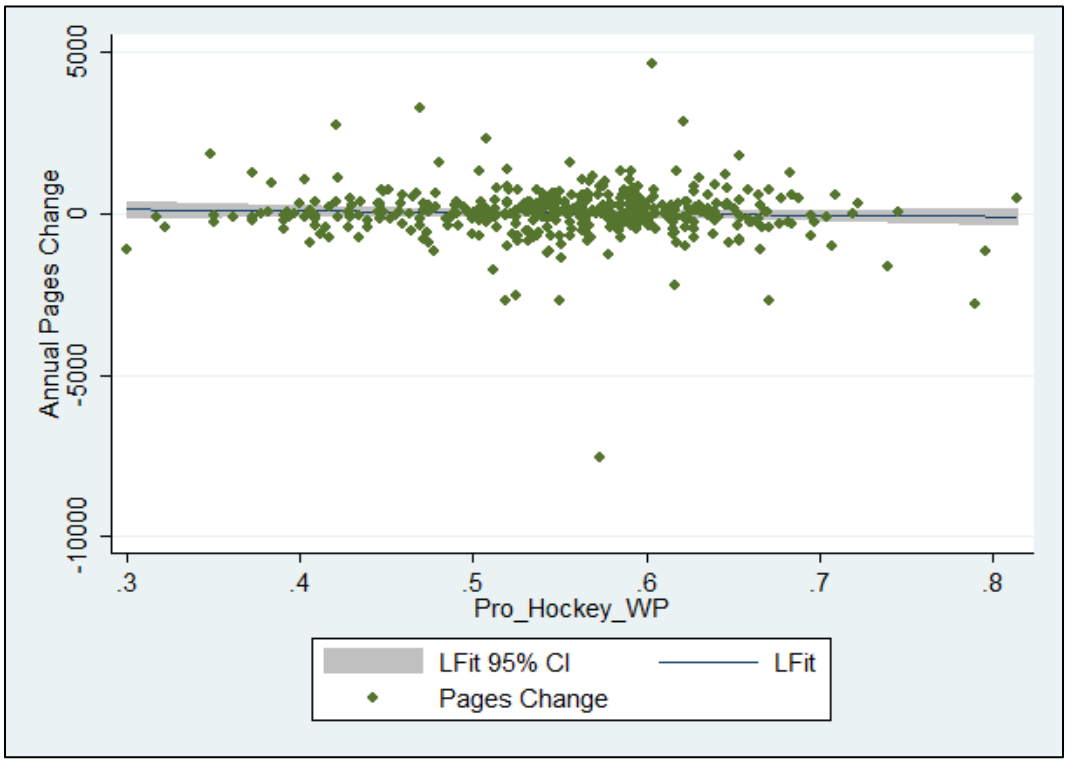

FIGURE 54: Pages Change vs NHL Win Percentage (FE)

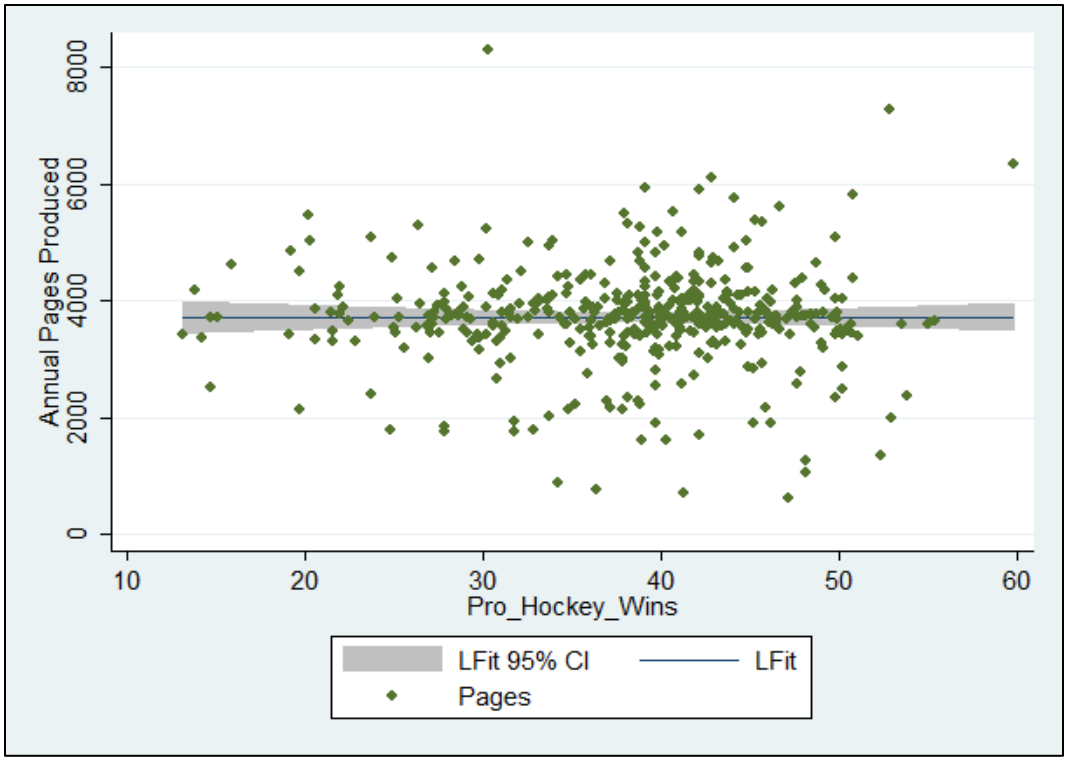

FIGURE 55: Pages vs NHL Wins (FE)

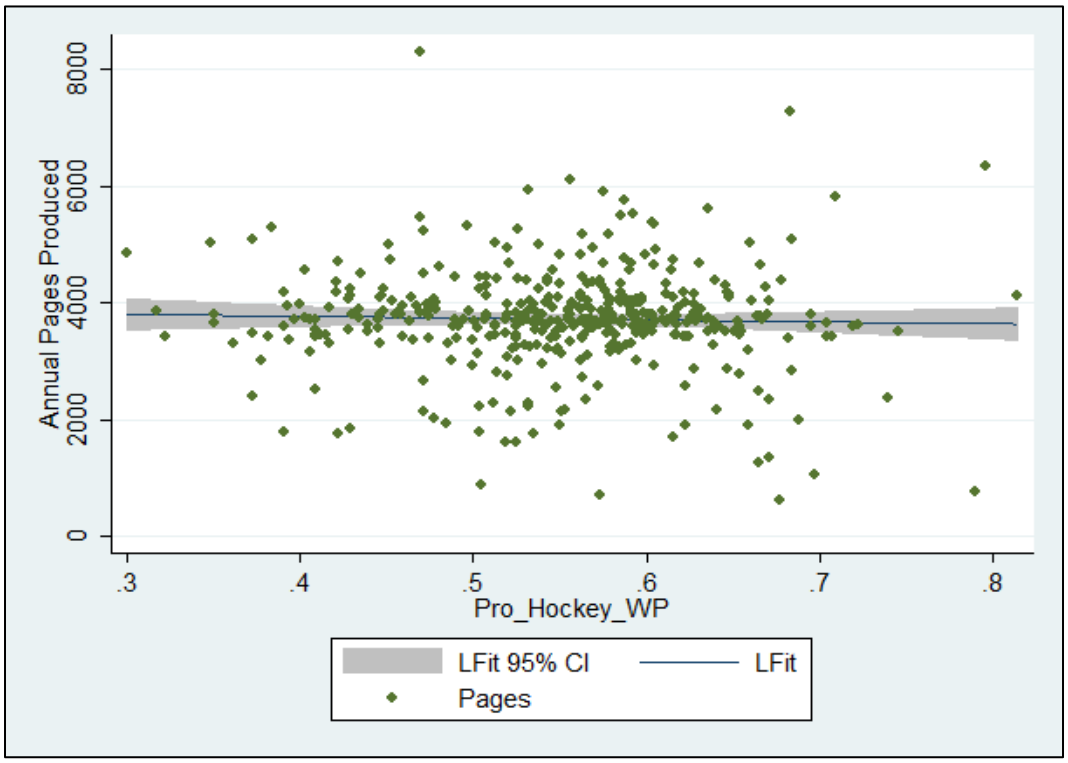

FIGURE 56: Pages vs NHL Win Percentage (FE)

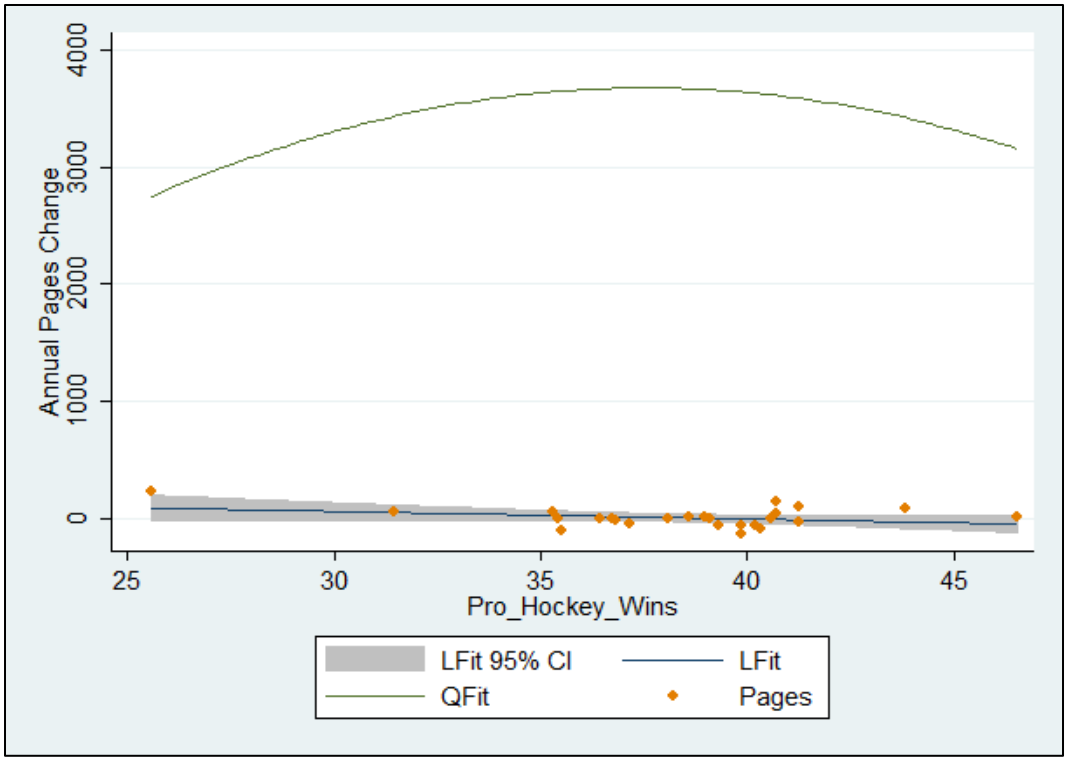

FIGURE 57: Pages Change vs NHL Wins (BE)

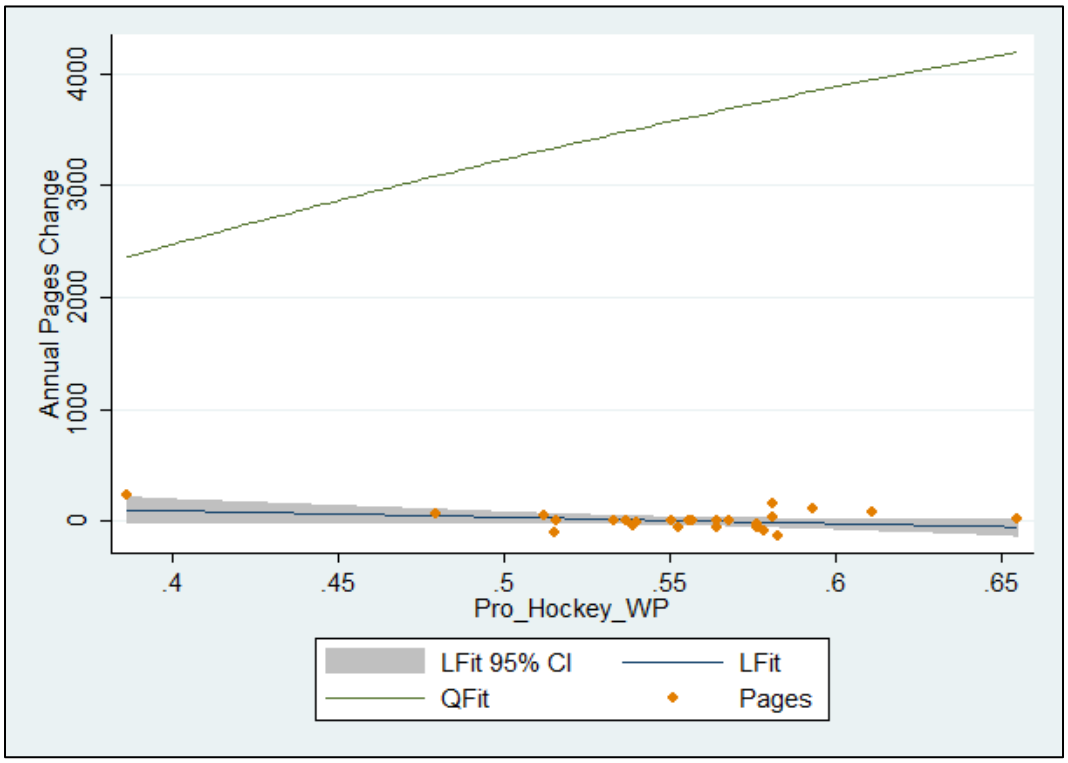

FIGURE 58: Pages Change vs NHL Win Percentage (BE)

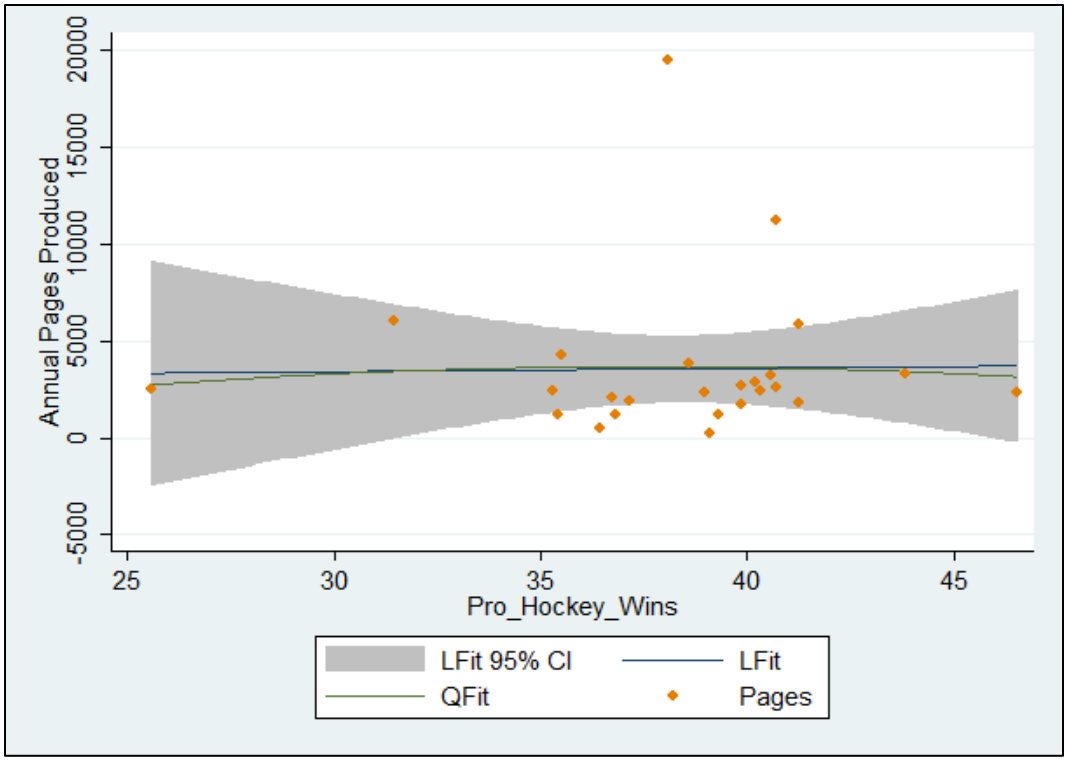

FIGURE 59: Pages vs NHL Wins (BE)

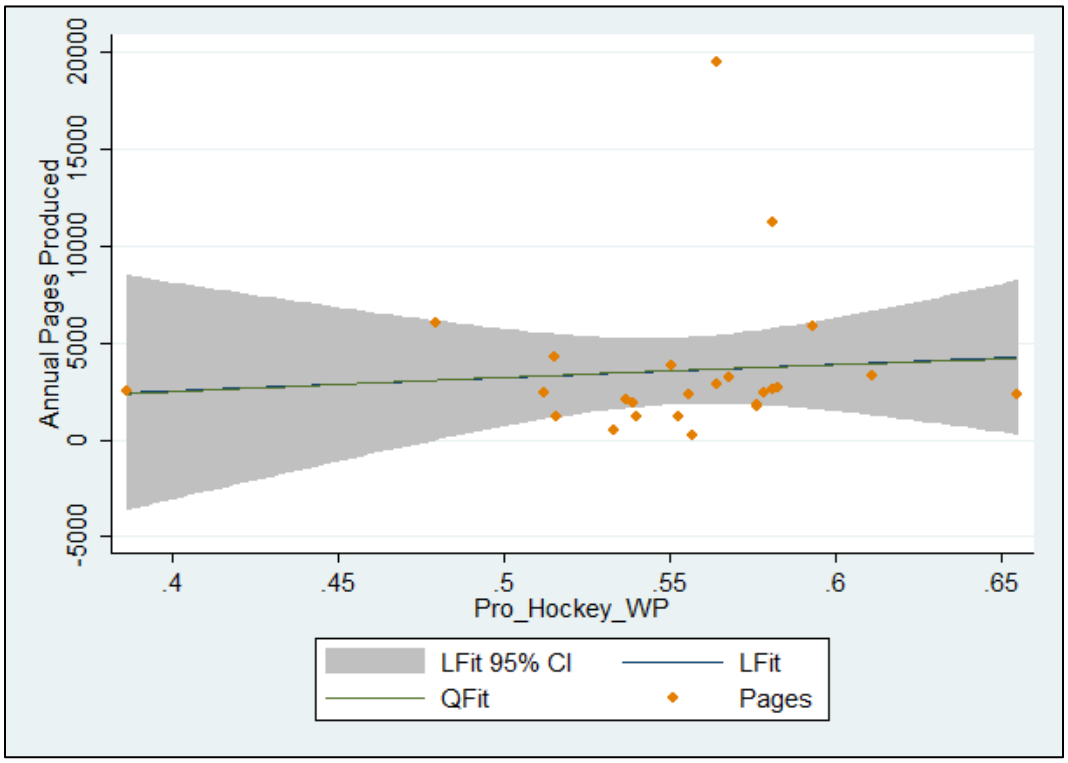

FIGURE 60: Pages vs NHL Win Percentage (BE)

College Football

In this section are the histograms of the NCAA variables and scatter plots of pages and pages change vs NCAA Wins and NCAA Winning Percentage. The purpose of this section is to visualize the relationships between these college football variables and the dependent variables, pages and pages change.

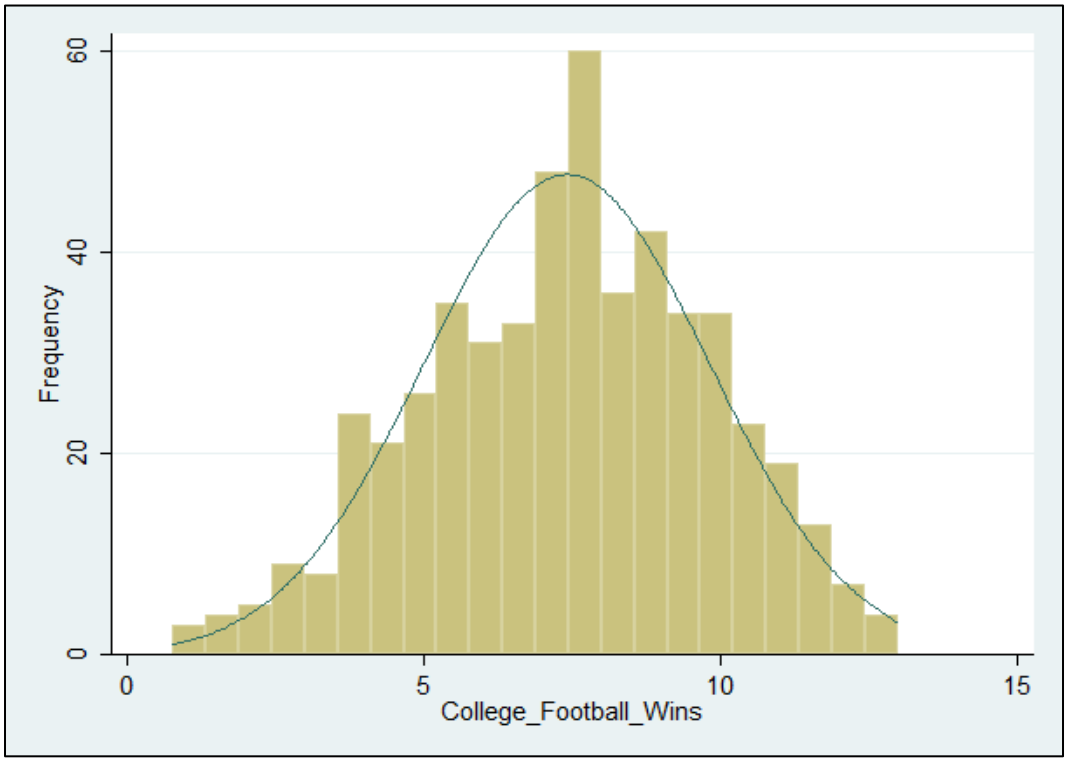

FIGURE 61: NCAA Wins Histogram

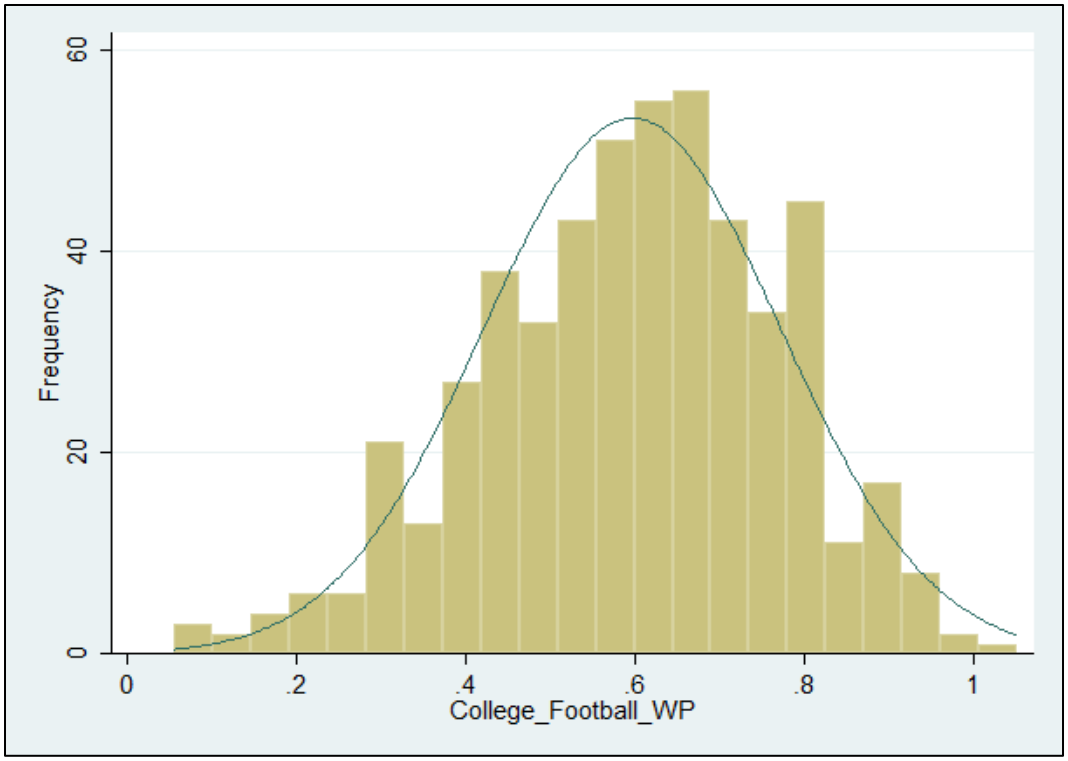

FIGURE 62: NCAA Win Percentage Histogram

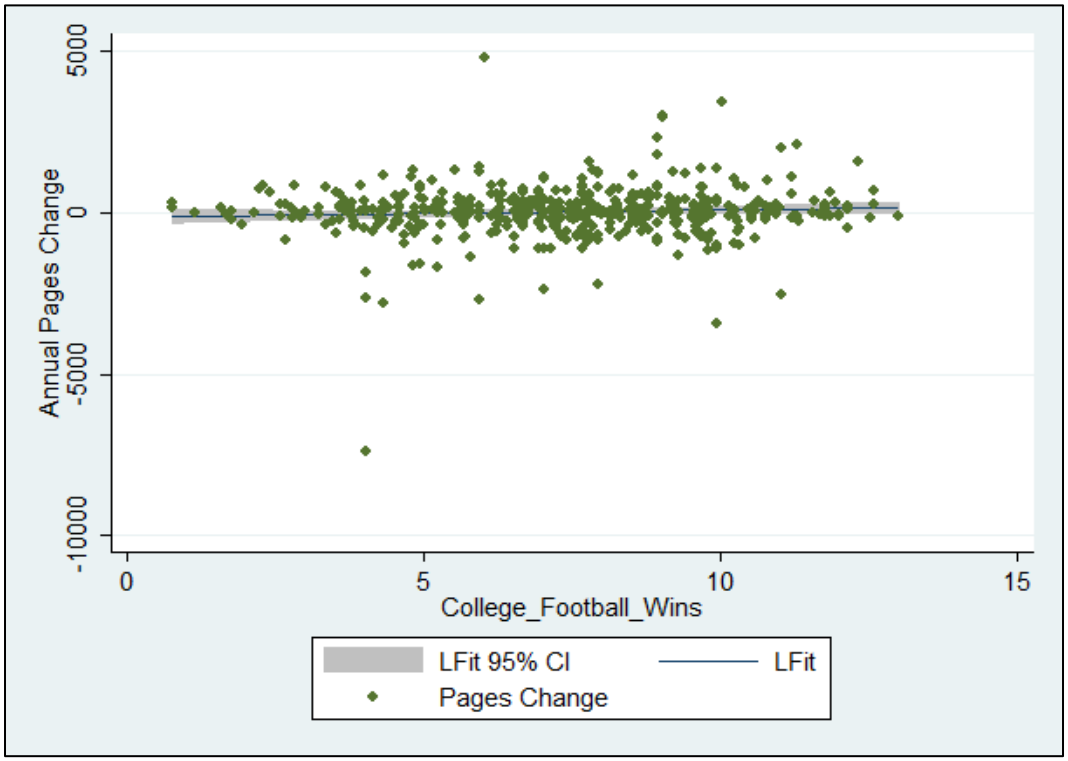

FIGURE 63: Pages Change vs NCAA Wins (FE)

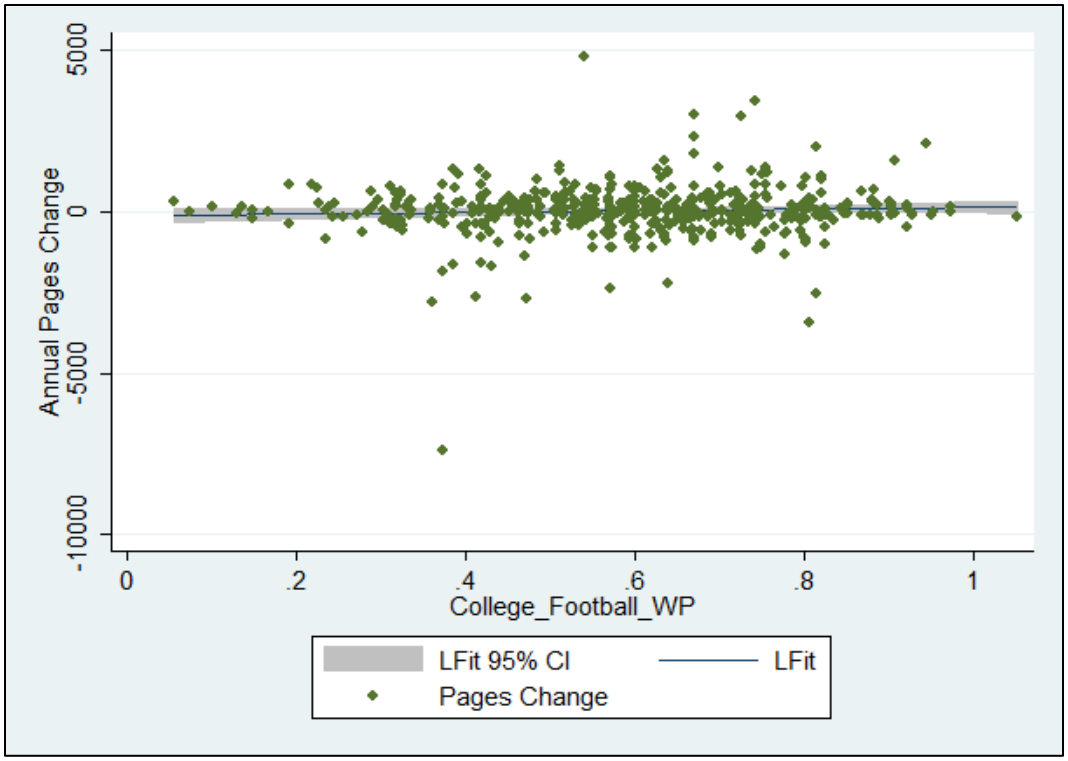

FIGURE 64: Pages Change vs NCAA Win Percentage (FE)

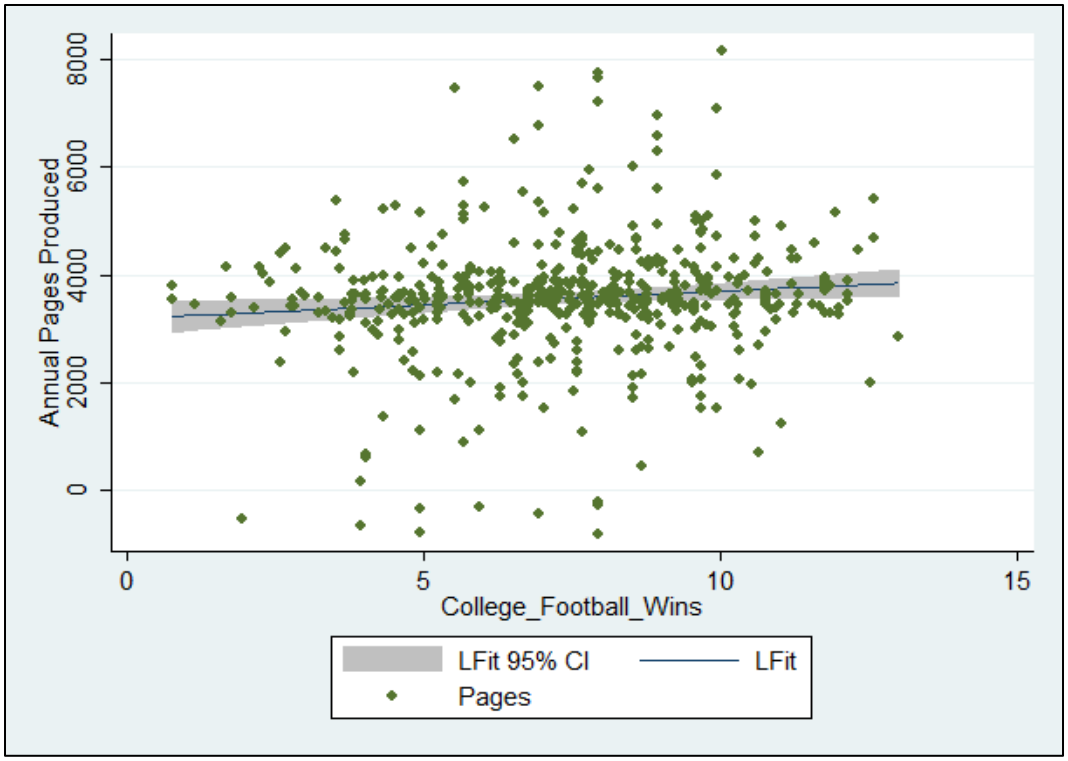

FIGURE 65: Pages vs NCAA Wins (FE)

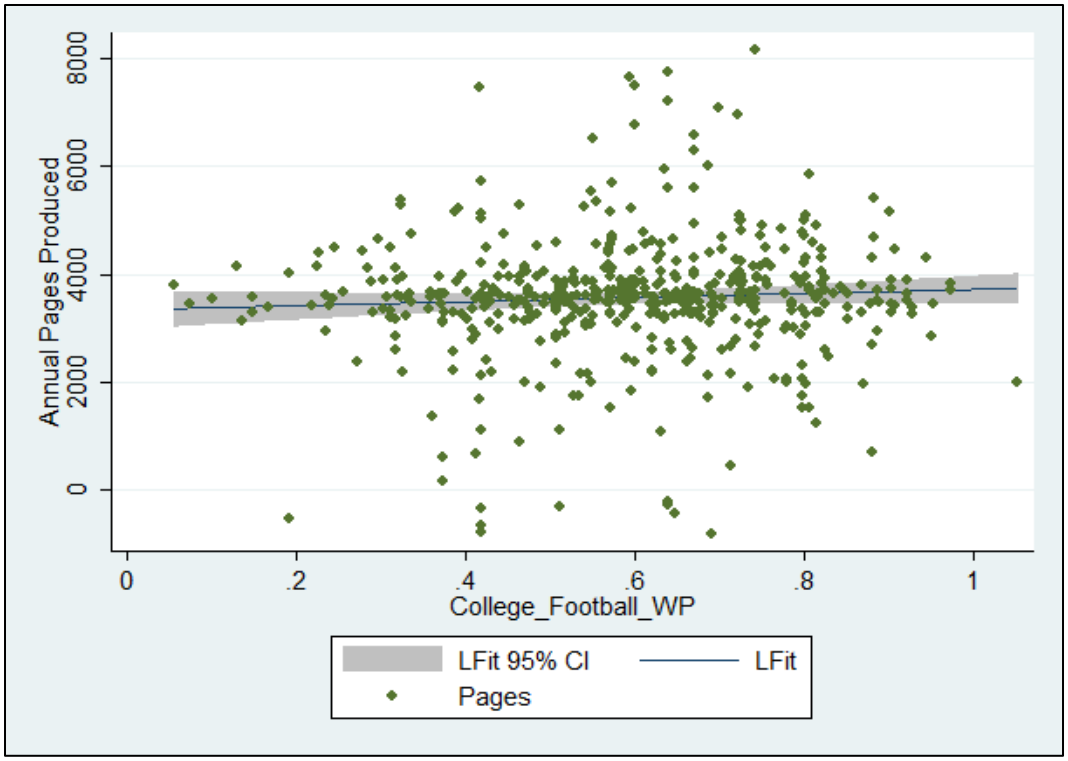

FIGURE 66: Pages vs NCAA Win Percentage (FE)

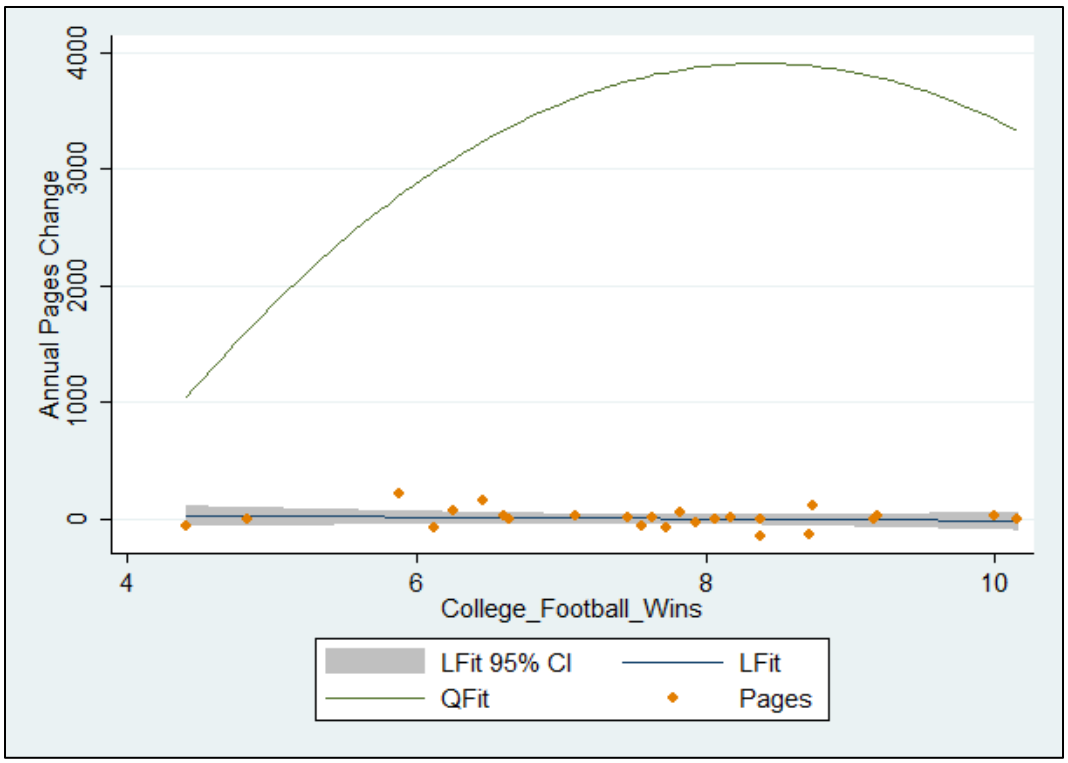

FIGURE 67: Pages Change vs NCAA Wins (BE)

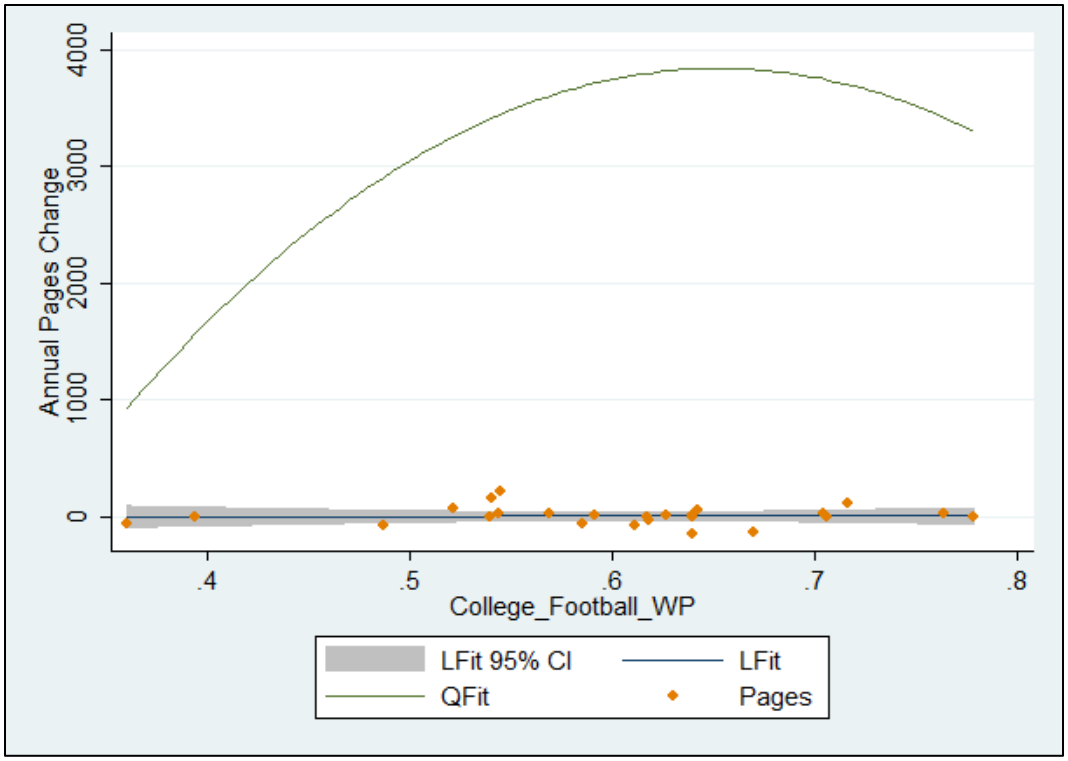

FIGURE 68: Pages Change vs NCAA Win Percentage (BE)

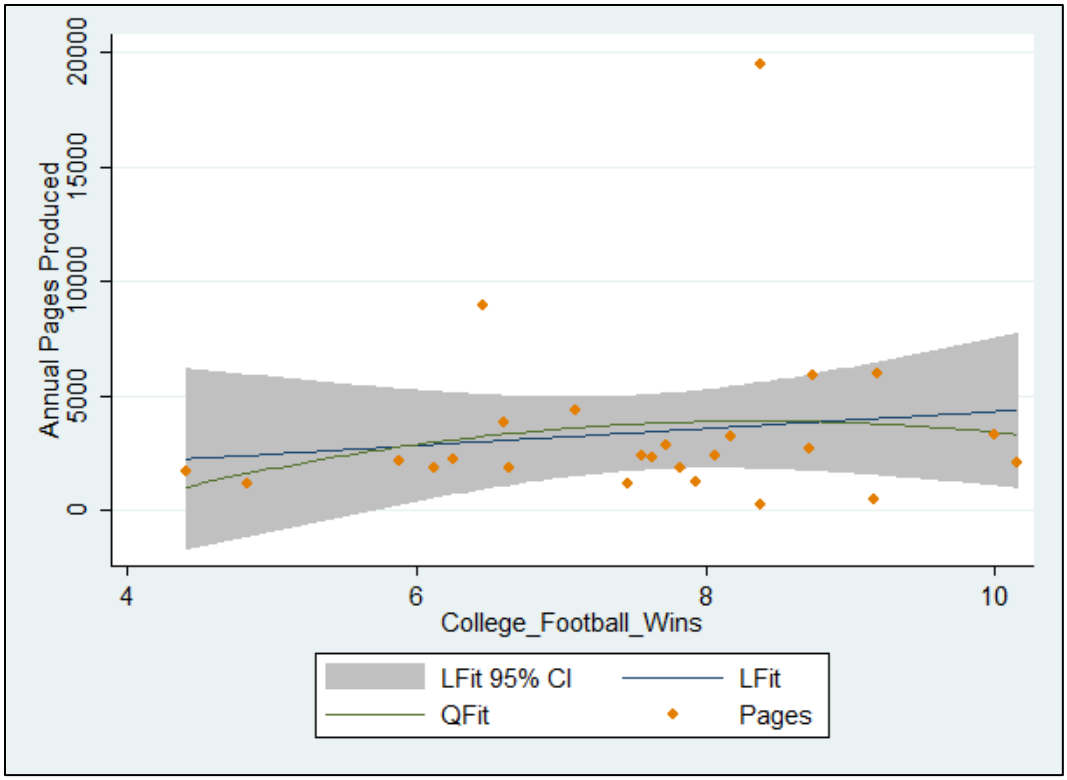

FIGURE 69: Pages vs NCAA Wins (BE)

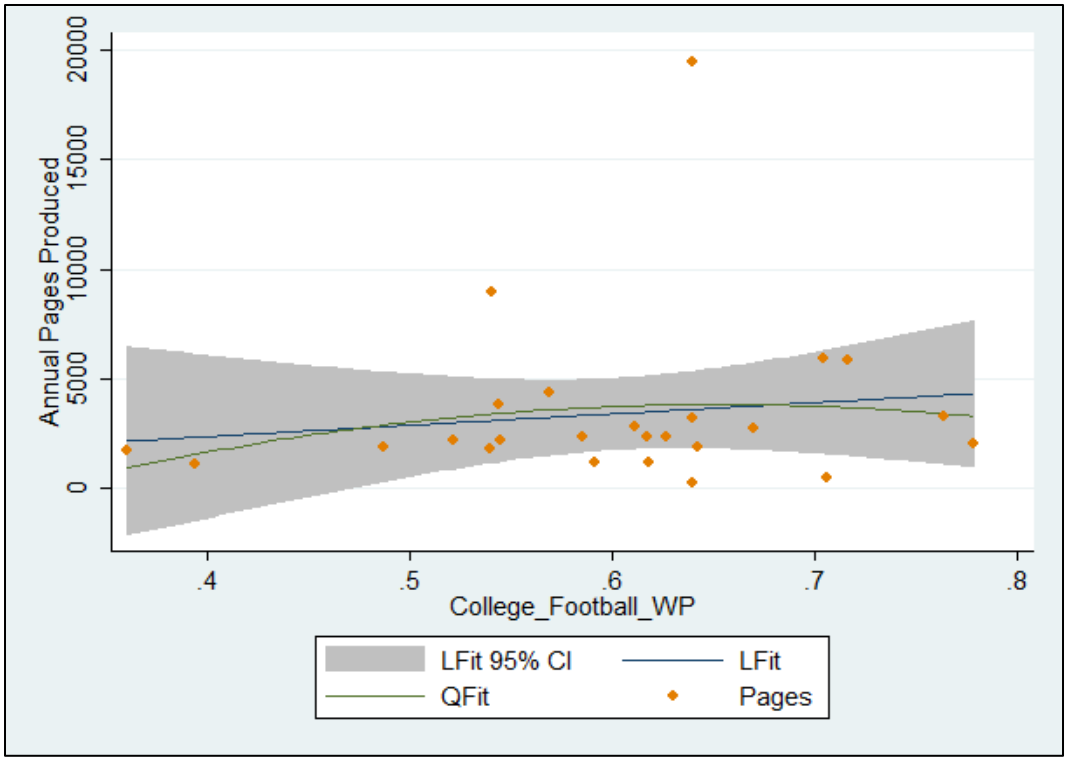

FIGURE 70: Pages vs NCAA Win Percentage (BE)

APPENDIX C: REGRESSION RESULTS

MLB

This section presents all the regression results for the individual MLB regressions. Each table represents one of the sports variables identified in section 3.3 for All Data, Sports States or Control States. Each table is comprised of four regressions, a fixed effects and random effects with the inclusion and exclusion of potentially confounding variables.

TABLE 28: Lagged MLB Championship Results – All Data

Baseball: MLB Championship- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000379	-0.000397		
	(0.000092)	(0.000277)		
State Senate Democrat Percentage	175.2	1.041		
	(189.30)	(398.10)		
Lag(1) MLB Championship	-131.9	-173	-129.6	-150
	(245.00)	(256.00)	(244.60)	(255.70)
Constant	-51.38	145	27.96	28.37
	(108.50)	(261.80)	(34.73)	(35.42)
Observations	496	496	496	496
R-squared		0.007		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7125		0.7835	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

Table 29: Lagged MLB Championship Results - Sports States

Baseball: MLB Championship- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000786	-0.000401		
	(0.000114)	(0.000328)		
State Senate Democrat Percentage	234.4	5.706		
	(271.70)	(503.20)		
Lag(1) MLB Championship	-150.3	-181.5	-145.4	-155.4
	(299.30)	(309.70)	(297.90)	(309.30)
Constant	-41.42	203.4	49.86	50.13
	(159.10)	(355.20)	(49.13)	(49.90)
Observations	331	331	331	331
R-squared		0.008		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7541		0.9045	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

Table 30: Lagged MLB Championship Results - Control States

Baseball: MLB Championship- Lag 1	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000933	0.000759		
	(0.000374)	(0.001950)		
State Senate Democrat Percentage	49.15	-40.67		
	(191.30)	(575.80)		
Lag(1) MLB Championship	-148.7	-98.94	-141	-102.6
	(460.10)	(489.30)	(454.70)	(480.20)
Constant	-50.07	-75.77	-15.05	-15.28
	(114.70)	(376.90)	(35.40)	(36.38)
Observations	165	165	165	165
R-squared		0.001		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.955		0.8035	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 31: Lagged MLB Playoffs Results – All Data

Baseball: MLB Playoffs- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000359	-0.000398		
	(0.000092)	(0.000278)		
State Senate Democrat Percentage	176.1	-15.2		
	(189.40)	(398.80)		
Lag(1) MLB Playoff Appearance	-0.556	15.57	-3.718	5.647
	(78.85)	(87.27)	(78.59)	(86.98)
Constant	-54.95	146.2	26.3	23.89
	(110.10)	(261.90)	(39.93)	(41.63)
Observations	496	496	496	496
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8147		0.8016	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

Table 32: Lagged MLB Playoffs Results – Sports States

Baseball: MLB Playoffs- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000692	-0.000386		
	(0.000114)	(0.000329)		
State Senate Democrat Percentage	244.8	2.817		
	(271.50)	(503.30)		
Lag(1) MLB Playoff Appearance	-66.6	-43.62	-69.17	-57.56
	(110.10)	(121.20)	(109.60)	(120.80)
Constant	-36.87	205.7	64.3	61.21
	(159.60)	(355.60)	(56.54)	(58.75)
Observations	331	331	331	331
R-squared		0.007		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7731		0.8192	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

Table 33: Lagged MLB Playoffs Results – Controls States

Baseball: MLB Playoffs- Lag 1	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000926	0.000644		
	(0.000371)	(0.001930)		
State Senate Democrat Percentage	71.13	-232.4		
	(189.70)	(574.60)		
Lag(1) MLB Playoff Appearance	133.1	147.2	130.6	140.5
	(82.57)	(93.43)	(81.74)	(91.18)
Constant	-94.39	-1.941	-47.55	-49.96
	(117.20)	(373.00)	(40.25)	(42.24)
Observations	165	165	165	165
R-squared		0.017		0.015
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8539		0.8056	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 34: Lagged MLB Wins Results – All Data

Baseball: MLB Wins- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000399	-0.00041		
	(0.000092)	(0.000277)		
State Senate Democrat Percentage	170.5	-51.9		
	(189.40)	(401.30)		
Lag(1) MLB Wins	2.22	2.468	2.244	2.37
	(2.88)	(3.20)	(2.87)	(3.18)
Constant	-228.5	-24.37	-154	-164.1
	(249.30)	(343.10)	(231.70)	(256.40)
Observations	496	496	496	496
R-squared		0.007		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8206		0.9268	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 35: Lagged MLB Wins Results – Sports States

Baseball: MLB Wins-Lag 1	**Sports States**			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000743	-0.000396		
	(0.000114)	(0.000329)		
State Senate Democrat Percentage	240.3	-2.861		
	(273.80)	(506.70)		
Lag(1) MLB Wins	-0.0136	0.0773	0.251	-0.00117
	(4.06)	(4.40)	(4.01)	(4.37)
Constant	-49.14	194.7	25.82	46
	(342.00)	(472.50)	(324.70)	(353.30)
Observations	331	331	331	331
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8492		0.8846	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 36: Lagged MLB Wins Results – Control States

Baseball: MLB Wins-Lag 1	**Controls States**			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001120	0.00087		
	(0.000369)	(0.001910)		
State Senate Democrat Percentage	100.3	-326.3		
	(189.40)	(569.40)		
Lag(1) MLB Wins	**6.570****	**8.263****	**6.348****	**7.795****
	(3.00)	(3.47)	(2.95)	(3.38)
Constant	-602.8**	-601.2	-522.0**	-637.4**
	(276.90)	(430.40)	(237.80)	(272.00)
Observations	165	165	165	165
R-squared		0.037		0.034
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.5874		0.3815	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 37: Lagged MLB Winning Percentage Results – All Data

Baseball: MLB Winning Percentage- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000396	-0.000403		
	(0.000092)	(0.000277)		
State Senate Democrat Percentage	163.2	-54.37		
	(189.70)	(401.20)		
Lag(1) MLB Winning Percentage	468	445.2	488.5	467.7
	(482.80)	(540.70)	(480.70)	(536.00)
Constant	-280.3	-49.66	-217.8	-207.5
	(256.30)	(353.90)	(241.80)	(269.10)
Observations	496	496	496	496
R-squared		0.007		0.002
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7996		0.9299	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 38: Lagged MLB Winning Percentage Results – Sports States

Baseball: MLB Winning Percentage- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000745	-0.000395		
	(0.000114)	(0.000329)		
State Senate Democrat Percentage	238.6	1.648		
	(275.30)	(506.70)		
Lag(1) MLB Winning Percentage	23.6	-44.23	107.2	2.119
	(689.00)	(751.30)	(678.40)	(745.90)
Constant	-61.08	220.2	-7.676	44.85
	(355.90)	(492.10)	(342.60)	(376.10)
Observations	331	331	331	331
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8224		0.7347	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 39: Lagged MLB Winning Percentage Results – Control States

Baseball: MLB Winning Percentage- Lag 1	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001220	0.000935		
	(0.000367)	(0.001900)		
State Senate Democrat Percentage	99.13	-355		
	(188.10)	(565.80)		
Lag(1) MLB Winning Percentage	**1,240****	**1,542*****	**1,207****	**1,458*****
	(492.10)	(567.50)	(486.10)	(553.70)
Constant	-691.3**	-696	-611.5**	-735.3***
	(279.00)	(432.40)	(242.40)	(275.50)
Observations	165	165	165	165
R-squared		0.048		0.043
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.5237		0.3436	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 40: MLB Championship Results – All Data

Baseball: MLB Championship	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000327	-0.000399		
	(0.000092)	(0.000276)		
State Senate Democrat Percentage	176	-33.93		
	(189.00)	(396.40)		
MLB Championship	226.7	200.6	221.9	222.1
	(233.80)	(243.80)	(233.10)	(243.70)
Constant	-58.78	157.9	22.58	22.58
	(108.40)	(260.70)	(34.64)	(35.33)
Observations	498	498	498	498
R-squared		0.008		0.002
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7613		0.9972	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 41: MLB Championship Results – Sports States

Baseball: MLB Championship	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000683	-0.000393		
	(0.000114)	(0.000328)		
State Senate Democrat Percentage	250.2	-13.57		
	(271.50)	(502.10)		
MLB Championship	247.7	231.2	244.3	255
	(284.60)	(293.60)	(282.60)	(293.20)
Constant	-63.42	199.7	40.25	39.92
	(159.20)	(354.30)	(49.04)	(49.83)
Observations	332	332	332	332
R-squared		0.009		0.002
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7715		0.8904	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 42: MLB Championship Results – Control States

Baseball: MLB Championship	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001720	0.000167		
	(0.000367)	(0.001880)		
State Senate Democrat Percentage	40.46	-145.6		
	(190.60)	(564.50)		
MLB Championship	-139.3	-105.2	-144.1	-102.6
	(458.40)	(483.70)	(455.20)	(480.50)
Constant	-51.22	43.9	-11.89	-12.14
	(114.60)	(364.10)	(35.33)	(36.30)
Observations	166	166	166	166
R-squared		0.001		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9087		0.7875	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 43: MLB Playoffs Results – All Data

Baseball: MLB Playoffs	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000258	-0.000375		
	(0.000092)	(0.000277)		
State Senate Democrat Percentage	168.6	-3.42		
	(188.70)	(397.10)		
MLB Playoff Appearance	-97.67	-93.73	-99.98	-106.1
	(77.45)	(85.54)	(77.00)	(85.05)
Constant	-25.51	164.9	54.59	56.24
	(109.40)	(260.50)	(40.09)	(41.82)
Observations	498	498	498	498
R-squared		0.009		0.003
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8857		0.8655	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 44: MLB Playoffs Results – Sports States

Baseball: MLB Playoffs	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000668	-0.000386		
	(0.000115)	(0.000330)		
State Senate Democrat Percentage	239.8	-3.346		
	(270.90)	(502.70)		
MLB Playoff Appearance	-87.79	-63.5	-92.42	-81.71
	(108.00)	(119.20)	(107.20)	(118.50)
Constant	-26.28	216.5	73.77	70.74
	(159.10)	(354.50)	(57.05)	(59.43)
Observations	332	332	332	332
R-squared		0.008		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7652		0.8317	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 45: MLB Playoffs Results – Control States

Baseball: MLB Playoffs	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001820	0.000382		
	(0.000364)	(0.001860)		
State Senate Democrat Percentage	22.26	42.56		
	(189.40)	(568.80)		
MLB Playoff Appearance	-124.9	**-159.9***	-124.8	**-157.7***
	(81.68)	(91.29)	(81.11)	(88.99)
Constant	-12.99	-36.42	18.06	26.19
	(116.50)	(363.20)	(40.31)	(42.03)
Observations	166	166	166	166
R-squared		0.02		0.02
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.6302		0.3683	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 46: MLB Wins Results – All Data

Baseball: MLB Wins	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000335	-0.000395		
	(0.000092)	(0.000277)		
State Senate Democrat Percentage	173.1	-1.964		
	(189.10)	(400.30)		
MLB Wins	-1.662	-1.834	-1.62	-1.929
	(2.88)	(3.18)	(2.87)	(3.16)
Constant	81.24	291.5	157.4	182.1
	(249.50)	(340.80)	(232.60)	(255.40)
Observations	498	498	498	498
R-squared		0.007		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8457		0.8144	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 47: MLB Wins Results – Sports States

Baseball: MLB Wins	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000738	-0.000397		
	(0.000114)	(0.000329)		
State Senate Democrat Percentage	244.7	2.619		
	(273.30)	(506.20)		
MLB Wins	-1.322	-1.062	-1.073	-1.198
	(4.05)	(4.39)	(4.01)	(4.36)
Constant	55.19	285.1	133.8	143.9
	(342.40)	(471.00)	(325.40)	(353.90)
Observations	332	332	332	332
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8497		0.9423	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 48: MLB Wins Results – Control States

Baseball: MLB Wins	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001690	0.000172		
	(0.000366)	(0.001870)		
State Senate Democrat Percentage	16.13	-25.47		
	(191.30)	(574.40)		
MLB Wins	-2.9	-3.512	-2.938	-3.546
	(3.05)	(3.47)	(3.01)	(3.37)
Constant	192.1	261.9	221.8	270.4
	(280.20)	(422.80)	(242.70)	(271.70)
Observations	166	166	166	166
R-squared		0.007		0.007
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8866		0.69	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 49: MLB Wins Change (YoY) Results – All Data

Baseball: MLB Wins Change (YoY)	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000351	-0.000391		
	(0.000092)	(0.000276)		
State Senate Democrat Percentage	177.2	-8.881		
	(189.10)	(397.40)		
MLB Wins Change	-3.483	-3.281	-3.481	-3.315
	(2.77)	(2.82)	(2.76)	(2.82)
Constant	-54.96	145.7	26.27	26.23
	(108.10)	(261.50)	(34.34)	(35.01)
Observations	496	496	496	496
R-squared		0.009		0.003
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.814		0.7764	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 50: MLB Wins Change (YoY) Results – Sports States

Baseball: MLB Wins Change (YoY)	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000742	-0.000395		
	(0.000114)	(0.000328)		
State Senate Democrat Percentage	240	-1.726		
	(271.50)	(503.20)		
MLB Wins Change	-1.065	-0.762	-1.092	-0.804
	(3.92)	(3.98)	(3.92)	(3.98)
Constant	-49.73	200.2	46.29	46.19
	(158.20)	(355.30)	(48.48)	(49.22)
Observations	331	331	331	331
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7744		0.6877	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 51: MLB Wins Change (YoY) Results – Control States

Baseball: MLB Wins Change (YoY)	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000955	0.000945		
	(0.000364)	(0.001890)		
State Senate Democrat Percentage	52.58	-40.83		
	(185.40)	(553.30)		
MLB Wins Change	**-8.236*** **	**-8.314*** **	**-8.225*** **	**-8.267*** **
	(2.76)	(2.85)	(2.74)	(2.83)
Constant	-52.11	-95.35	-15.06	-15.05
	(111.60)	(363.80)	(34.37)	(35.30)
Observations	165	165	165	165
R-squared		0.054		0.053
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9777		0.9522	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 52: MLB Winning Percentage Results – All Data

Baseball: MLB Winning Percentage	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000334	-0.00039		
	(0.000092)	(0.000276)		
State Senate Democrat Percentage	181.7	30.92		
	(189.70)	(401.80)		
MLB Winning Percentage	-379.2	-525.4	-346.2	-495.9
	(484.60)	(540.70)	(481.70)	(533.70)
Constant	132.9	388.7	200.4	275.2
	(255.80)	(347.50)	(243.10)	(268.90)
Observations	498	498	498	498
R-squared		0.008		0.002
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.6678		0.5147	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 53: MLB Winning Percentage Results – Sports States

Baseball: MLB Winning Percentage	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000734	-0.00039		
	(0.000114)	(0.000328)		
State Senate Democrat Percentage	264.3	38.61		
	(275.40)	(507.80)		
MLB Winning Percentage	-430.6	-512	-329.4	-470.7
	(690.20)	(754.70)	(677.90)	(746.60)
Constant	155	435.5	213.1	284
	(355.60)	(485.60)	(343.90)	(378.20)
Observations	332	332	332	332
R-squared		0.009		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8143		0.6515	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 54: MLB Winning Percentage Results – Control States

Baseball: MLB Winning Percentage	Controls States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001680	0.000158		
	(0.000366)	(0.001870)		
State Senate Democrat Percentage	23.19	-15.84		
	(190.80)	(578.70)		
MLB Winning Percentage	-440.7	-542.9	-449.8	-547.5
	(503.30)	(575.70)	(498.50)	(556.20)
Constant	175	246.4	209.5	257.8
	(282.60)	(422.90)	(248.80)	(277.20)
Observations	166	166	166	166
R-squared		0.006		0.006
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8838		0.692	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

NBA

This section presents all the regression results for the individual NBA regressions. Each table represents one of the sports variables identified in section 3.3 for All Data, Sports States or Control States. Each

table is comprised of four regressions, a fixed effects and random effects with the inclusion and exclusion of potentially confounding variables.

TABLE 55: Lagged NBA Championship Results – All Data

Basketball: NBA Championship- Lag 1	**All Data**			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000480	-0.000387		
	(0.000101)	(0.000298)		
State Senate Democrat Percentage	193.1	30.97		
	(226.90)	(461.80)		
Lag(1) NBA Championship	108.8	29.06	90.01	57.32
	(225.70)	(240.10)	(221.80)	(239.60)
Constant	-60.25	132.6	24.7	25.71
	(128.40)	(304.50)	(39.00)	(39.94)
Observations	453	453	453	453
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.5985		0.7178	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 56: Lagged NBA Championship Results – Sports States

Basketball: NBA Championship- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001040	-0.000408		
	(0.000136)	(0.000380)		
State Senate Democrat Percentage	278.2	-28.8		
	(377.70)	(656.00)		
Lag(1) NBA Championship	137.9	56.92	104.9	87.34
	(295.20)	(312.10)	(290.10)	(311.10)
Constant	-50.21	247.4	47.58	48.36
	(214.40)	(466.40)	(61.17)	(62.56)
Observations	270	270	270	270
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.6376		0.8757	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 57: Lagged NBA Championship Results – Control States

Basketball: NBA Championship- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001020	-0.000307		
	(0.000363)	(0.000798)		
State Senate Democrat Percentage	97.59	156		
	(195.70)	(529.80)		
Lag(1) NBA Championship	-91.32	-118.6	-104.1	-118
	(344.70)	(378.50)	(342.30)	(370.00)
Constant	-70.55	-52.16	-7.912	-7.76
	(120.20)	(328.50)	(35.79)	(36.69)
Observations	183	183	183	183
R-squared		0.003		0.001
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9654		0.9211	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 58: Lagged NBA Playoffs Results – All Data

Basketball: NBA Playoffs- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000402	-0.000391		
	(0.000100)	(0.000297)		
State Senate Democrat Percentage	194.3	30.48		
	(226.90)	(461.80)		
Lag(1) NBA Playoff Appearance	7.198	-7.887	3.973	2.27
	(77.72)	(83.24)	(77.25)	(83.05)
Constant	-63.95	139.4	25.28	26.23
	(134.30)	(306.70)	(57.50)	(60.48)
Observations	453	453	453	453
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7938		0.9555	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 59: Lagged NBA Playoffs Results – Sports States

Basketball: NBA Playoffs- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000914	-0.000428		
	(0.000135)	(0.000382)		
State Senate Democrat Percentage	281.6	-43.47		
	(378.70)	(656.90)		
Lag(1) NBA Playoff Appearance	-12.7	-52.15	-29.43	-34.85
	(122.90)	(131.30)	(121.50)	(130.50)
Constant	-43.99	297.3	69.58	72.77
	(229.00)	(479.60)	(93.26)	(98.12)
Observations	270	270	270	270
R-squared		0.008		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.5942		0.9092	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 60: Lagged NBA Playoffs Results – Control States

Basketball: NBA Playoffs- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001300	-0.000299		
	(0.000365)	(0.000790)		
State Senate Democrat Percentage	91.69	118.1		
	(195.90)	(531.90)		
Lag(1) NBA Playoff Appearance	39.21	49.97	39.18	54.24
	(72.35)	(77.72)	(71.14)	(75.89)
Constant	-91.47	-59.98	-28.75	-36.32
	(124.00)	(322.50)	(50.44)	(52.75)
Observations	183	183	183	183
R-squared		0.005		0.003
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8981		0.5689	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 61: Lagged NBA Wins Results – All Data

Basketball: NBA Wins- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000373	-0.000391		
	(0.000100)	(0.000297)		
State Senate Democrat Percentage	193	32.73		
	(227.10)	(461.80)		
Lag(1) NBA Wins	-0.504	-0.833	-0.772	-0.616
	(3.17)	(3.44)	(3.13)	(3.44)
Constant	-40.1	167	58.26	52.03
	(180.40)	(330.60)	(130.60)	(142.50)
Observations	453	453	453	453
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8816		0.9119	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 62: Lagged NBA Wins Results – Sports States

Basketball: NBA Wins-Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000854	-0.000423		
	(0.000135)	(0.000380)		
State Senate Democrat Percentage	270.6	-40.47		
	(379.70)	(656.00)		
Lag(1) NBA Wins	-1.722	-2.868	-2.633	-2.556
	(4.99)	(5.35)	(4.88)	(5.34)
Constant	21.54	379.2	159.3	156.2
	(302.80)	(522.70)	(207.30)	(225.50)
Observations	270	270	270	270
R-squared		0.008		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.6869		0.9714	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 63: Lagged NBA Wins Results – Control States

Basketball: NBA Wins-Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001480	-0.000281		
	(0.000370)	(0.000789)		
State Senate Democrat Percentage	98.38	132.4		
	(195.20)	(528.30)		
Lag(1) NBA Wins	1.685	2.058	1.5	2.253
	(3.01)	(3.25)	(2.93)	(3.19)
Constant	-142.5	-123.8	-66.99	-96.08
	(171.50)	(332.10)	(118.60)	(128.60)
Observations	183	183	183	183
R-squared		0.005		0.003
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9336		0.5542	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 64: Lagged NBA Winning Percentage Results – All Data

Basketball: NBA Winning Percentage- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000410	-0.00039		
	(0.000100)	(0.000297)		
State Senate Democrat Percentage	196	27.11		
	(227.30)	(461.90)		
Lag(1) NBA Winning Percentage	34.71	33.86	6.736	45.43
	(262.50)	(287.70)	(259.40)	(287.70)
Constant	-77.79	119.6	24.14	4.935
	(184.40)	(331.60)	(134.40)	(148.10)
Observations	453	453	453	453
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9125		0.7556	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 65: Lagged NBA Winning Percentage Results – Sports States

Basketball: NBA Winning Percentage- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000930	-0.000413		
	(0.000136)	(0.000380)		
State Senate Democrat Percentage	284.8	-30.91		
	(380.70)	(656.20)		
Lag(1) NBA Winning Percentage	1.919	-57.93	-88.91	-43.13
	(413.80)	(446.30)	(403.20)	(445.90)
Constant	-53.34	282.9	97.26	74.08
	(310.00)	(523.90)	(212.70)	(233.80)
Observations	270	270	270	270
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7597		0.81	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 66: Lagged NBA Winning Percentage Results – Control States

Basketball: NBA Winning Percentage-Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001460	-0.000283		
	(0.000371)	(0.000789)		
State Senate Democrat Percentage	99.56	134		
	(195.20)	(528.80)		
Lag(1) NBA Winning Percentage	126.8	161.7	109.7	178.1
	(250.40)	(273.30)	(243.30)	(268.30)
Constant	-138.9	-122.8	-61.9	-94.83
	(175.80)	(333.20)	(122.40)	(134.20)
Observations	183	183	183	183
R-squared		0.004		0.003
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9272		0.5453	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 67: NBA Championship Results – All Data

Basketball: NBA Championship	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000633	-0.00038		
	(0.000100)	(0.000297)		
State Senate Democrat Percentage	178	-4.269		
	(225.90)	(465.30)		
NBA Championship	370.7	303.6	349.1	328.3
	(240.40)	(254.10)	(237.60)	(253.70)
Constant	-52.01	143.1	20.12	20.67
	(127.20)	(305.00)	(38.54)	(39.45)
Observations	456	456	456	456
R-squared		0.01		0.004
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.655		0.8152	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 68: NBA Championship Results – Sports States

Basketball: NBA Championship	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001140	-0.000411		
	(0.000133)	(0.000379)		
State Senate Democrat Percentage	260.7	-97.85		
	(375.70)	(663.40)		
NBA Championship	390.6	332.7	363	357.3
	(302.50)	(319.00)	(299.80)	(318.10)
Constant	-45.59	272.7	38.03	38.26
	(211.50)	(467.50)	(60.18)	(61.51)
Observations	273	273	273	273
R-squared		0.011		0.005
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.6825		0.9573	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 69: NBA Championship Results – Control States

Basketball: NBA Championship	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001120	-0.000294		
	(0.000362)	(0.000792)		
State Senate Democrat Percentage	94.97	199.4		
	(195.20)	(524.00)		
NBA Championship	36.66	27.64	25.66	28.71
	(485.00)	(512.30)	(482.30)	(506.80)
Constant	-68.01	-74.08	-5.665	-5.681
	(119.70)	(323.70)	(35.65)	(36.51)
Observations	183	183	183	183
R-squared		0.003		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9705		0.9844	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 70: NBA Playoffs Results – All Data

Basketball: NBA Playoffs	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000454	-0.000392		
	(0.000099)	(0.000298)		
State Senate Democrat Percentage	178.3	-4.312		
	(226.50)	(466.10)		
NBA Playoff Appearance	38.42	23.4	36.86	35.2
	(76.89)	(82.37)	(76.43)	(82.09)
Constant	-68.66	142.3	9.502	10.4
	(132.20)	(310.00)	(56.02)	(58.84)
Observations	456	456	456	456
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8088		0.9556	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 71: NBA Playoffs Results – Sports States

Basketball: NBA Playoffs	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000965	-0.000428		
	(0.000133)	(0.000385)		
State Senate Democrat Percentage	278.8	-88.64		
	(377.30)	(668.70)		
NBA Playoff Appearance	38.86	-0.587	26.16	22.44
	(120.50)	(129.30)	(119.70)	(127.50)
Constant	-69.4	289	37.52	39.67
	(225.30)	(488.80)	(91.08)	(95.30)
Observations	273	273	273	273
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.6307		0.9325	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 72: NBA Playoffs Results – Control States

Basketball: NBA Playoffs	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001230	-0.000357		
	(0.000363)	(0.000792)		
State Senate Democrat Percentage	81.03	131.3		
	(196.80)	(530.20)		
NBA Playoff Appearance	36.65	52.14	38.99	53.93
	(72.37)	(78.00)	(71.14)	(76.25)
Constant	-79.32	-56.02	-24.06	-31.16
	(121.70)	(322.10)	(49.05)	(51.34)
Observations	183	183	183	183
R-squared		0.005		0.003
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.818		0.5862	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 73: NBA Wins Results – All Data

Basketball: NBA Wins	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000388	-0.000402		
	(0.000100)	(0.000297)		
State Senate Democrat Percentage	180.8	-5.218		
	(226.50)	(466.10)		
NBA Wins	-0.529	-0.912	-0.754	-0.647
	(3.15)	(3.43)	(3.12)	(3.43)
Constant	-30.49	194.3	59.08	54.86
	(177.90)	(334.70)	(129.00)	(140.80)
Observations	456	456	456	456
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8597		0.9398	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 74: NBA Wins Results – Sports States

Basketball: NBA Wins	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000861	-0.000448		
	(0.000134)	(0.000380)		
State Senate Democrat Percentage	254	-111.7		
	(378.90)	(665.20)		
NBA Wins	-2.089	-3.332	-2.846	-2.819
	(4.88)	(5.25)	(4.80)	(5.23)
Constant	45.8	444.6	168.1	167
	(299.70)	(528.70)	(203.40)	(220.50)
Observations	273	273	273	273
R-squared		0.009		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.6489		0.9896	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 75: NBA Wins Results – Control States

Basketball: NBA Wins	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001450	-0.000347		
	(0.000366)	(0.000788)		
State Senate Democrat Percentage	86.78	138.4		
	(195.20)	(525.40)		
NBA Wins	2.001	2.755	1.92	2.831
	(3.04)	(3.31)	(2.99)	(3.26)
Constant	-143.4	-140.6	-78.34	-112.9
	(166.10)	(331.40)	(118.70)	(129.00)
Observations	183	183	183	183
R-squared		0.007		0.004
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8087		0.4884	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 76: NBA Wins Change (YoY) Results – All Data

Basketball: NBA Wins Change (YoY)	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000401	-0.000399		
	(0.000100)	(0.000299)		
State Senate Democrat Percentage	189.3	2.353		
	(229.50)	(470.00)		
NBA Wins Change	-0.235	-0.372	-0.218	-0.307
	(3.23)	(3.31)	(3.22)	(3.31)
Constant	-55.36	154.1	29.27	29.26
	(129.40)	(308.20)	(38.61)	(39.47)
Observations	450	450	450	450
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8941		0.9076	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 77: NBA Wins Change (YoY) Results – Sports States

Basketball: NBA Wins Change (YoY)	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000954	-0.000427		
	(0.000134)	(0.000383)		
State Senate Democrat Percentage	283.8	-77.15		
	(385.40)	(672.60)		
NBA Wins Change	-0.868	-0.902	-0.778	-0.717
	(4.99)	(5.11)	(4.98)	(5.11)
Constant	-48.33	286	53.96	53.96
	(217.30)	(475.10)	(60.20)	(61.42)
Observations	268	268	268	268
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.807		0.9581	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 78: NBA Wins Change (YoY) Results – Control States

Basketball: NBA Wins Change (YoY)	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001050	-0.000296		
	(0.000364)	(0.000791)		
State Senate Democrat Percentage	96.79	197.9		
	(195.70)	(523.20)		
NBA Wins Change	0.369	0.448	0.466	0.323
	(3.05)	(3.13)	(3.02)	(3.11)
Constant	-69.12	-74.09	-6.594	-6.676
	(120.10)	(322.60)	(35.77)	(36.64)
Observations	182	182	182	182
R-squared		0.003		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9753		0.8414	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 79: NBA Winning Percentage Results – All Data

Basketball: NBA Winning Percentage	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000366	-0.000403		
	(0.000100)	(0.000297)		
State Senate Democrat Percentage	178.4	-5.97		
	(226.60)	(466.00)		
NBA Winning Percentage	-90.64	-114.8	-112.1	-98.47
	(260.60)	(285.30)	(258.10)	(285.40)
Constant	-6.293	215.4	84.41	77.7
	(181.80)	(337.00)	(132.40)	(145.60)
Observations	456	456	456	456
R-squared		0.007		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8784		0.9107	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 80: NBA Winning Percentage Results – Sports States

Basketball: NBA Winning Percentage	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000828	-0.000451		
	(0.000134)	(0.000380)		
State Senate Democrat Percentage	242.1	-123.2		
	(379.90)	(665.60)		
NBA Winning Percentage	-236.7	-332.5	-305.1	-298.1
	(404.40)	(435.90)	(396.30)	(434.20)
Constant	85.05	484.2	206.4	202.9
	(307.00)	(533.50)	(208.30)	(227.00)
Observations	273	273	273	273
R-squared		0.009		0.002
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.6706		0.9686	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 81: NBA Winning Percentage Results – Control States

Basketball: NBA Winning Percentage	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001450	-0.000346		
	(0.000366)	(0.000789)		
State Senate Democrat Percentage	88.28	137.6		
	(195.20)	(526.20)		
NBA Winning Percentage	150.4	218.2	142.1	225.3
	(252.30)	(277.20)	(247.40)	(273.00)
Constant	-139.4	-139	-72.73	-112.1
	(169.70)	(332.10)	(122.20)	(134.10)
Observations	183	183	183	183
R-squared		0.007		0.004
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8011		0.4715	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

NFL

This section presents all the regression results for the individual NFL regressions. Each table represents one of the sports variables identified in section 3.3 for All Data, Sports States or Control States. Each table is comprised of four regressions, a fixed effects and random effects with the inclusion and exclusion of potentially confounding variables.

TABLE 82: Lagged NFL Championship Results – All Data

Football: NFL Championship- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000346	-0.000359		
	(0.000092)	(0.000276)		
State Senate Democrat Percentage	159.3	27.16		
	(190.20)	(392.90)		
Lag(1) NFL Championship	171.2	124.3	179.1	152.8
	(185.20)	(194.30)	(184.80)	(193.40)
Constant	-53.22	111.1	18.38	19.3
	(108.20)	(258.30)	(34.68)	(35.39)
Observations	511	511	511	511
R-squared		0.007		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7109		0.6436	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 83: Lagged NFL Championship Results – Sports States

Football: NFL Championship- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000741	-0.000393		
	(0.000116)	(0.000336)		
State Senate Democrat Percentage	203.5	-31.1		
	(280.80)	(520.60)		
Lag(1) NFL Championship	111.2	13.97	126.9	58.75
	(288.60)	(303.60)	(287.70)	(301.40)
Constant	-35.36	212.8	39.69	41.78
	(160.80)	(364.20)	(50.38)	(51.24)
Observations	326	326	326	326
R-squared		0.006		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.5727		0.4486	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 84: Lagged NFL Championship Results – Control States

Football: NFL Championship- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001300	-0.000107		
	(0.000359)	(0.000788)		
State Senate Democrat Percentage	97.24	213.6		
	(193.20)	(517.40)		
Lag(1) NFL Championship	257.5	263.9	255.8	269.1
	(173.20)	(182.50)	(172.30)	(179.80)
Constant	-85.33	-117.6	-19.67	-20.24
	(118.50)	(320.20)	(35.82)	(36.71)
Observations	185	185	185	185
R-squared		0.014		0.013
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9682		0.7953	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 85: Lagged NFL Playoffs Results – All Data

Football: NFL Playoffs- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000376	-0.000373		
	(0.000092)	(0.000275)		
State Senate Democrat Percentage	163.5	20.16		
	(190.30)	(393.00)		
Lag(1) NFL Playoff Appearance	23.62	18.6	25.19	23.72
	(69.72)	(74.55)	(69.62)	(74.48)
Constant	-57.91	115.8	14.63	15.22
	(111.10)	(260.80)	(43.99)	(45.73)
Observations	511	511	511	511
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9102		0.9554	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 86: Lagged NFL Playoffs Results – Sports States

Football: NFL Playoffs- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000764	-0.000398		
	(0.000116)	(0.000335)		
State Senate Democrat Percentage	210.1	-36.96		
	(280.60)	(521.60)		
Lag(1) NFL Playoff Appearance	19.26	-11.12	13.59	-3.345
	(102.90)	(109.70)	(102.50)	(109.10)
Constant	-41.67	222.3	38.5	44.83
	(165.50)	(369.80)	(62.72)	(64.87)
Observations	326	326	326	326
R-squared		0.006		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.6774		0.6507	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 87: Lagged NFL Playoffs Results – Control States

Football: NFL Playoffs- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001420	-0.000247		
	(0.000363)	(0.000784)		
State Senate Democrat Percentage	84.67	159		
	(195.00)	(519.70)		
Lag(1) NFL Playoff Appearance	54.56	65.49	54.23	68.83
	(72.22)	(76.48)	(70.84)	(75.88)
Constant	-93.31	-90.52	-32.64	-39.11
	(121.90)	(320.60)	(47.17)	(49.28)
Observations	185	185	185	185
R-squared		0.007		0.005
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8955		0.591	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 88: Lagged NFL Wins Results – All Data

Football: NFL Wins- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000384	-0.000375		
	(0.000092)	(0.000275)		
State Senate Democrat Percentage	164.3	25.44		
	(190.30)	(393.70)		
Lag(1) NFL Wins	2.559	3.89	2.552	3.453
	(11.25)	(12.16)	(11.22)	(12.14)
Constant	-69.33	89.64	4.073	-3.208
	(139.20)	(281.90)	(96.86)	(104.00)
Observations	511	511	511	511
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8502		0.8453	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 89: Lagged NFL Wins Results – Sports States

Football: NFL Wins- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000710	-0.000398		
	(0.000117)	(0.000334)		
State Senate Democrat Percentage	208	-51.91		
	(280.50)	(522.20)		
Lag(1) NFL Wins	-4.465	-6.523	-5.94	-7.454
	(16.11)	(17.31)	(15.94)	(17.21)
Constant	-0.443	276.8	90.21	102.1
	(201.90)	(397.80)	(134.60)	(144.20)
Observations	326	326	326	326
R-squared		0.007		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8303		0.8151	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 90: Lagged NFL Wins Results – Control States

Football: NFL Wins- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0002490	-0.0000305		
	(0.000365)	(0.000787)		
State Senate Democrat Percentage	74.77	224.2		
	(192.80)	(515.30)		
Lag(1) NFL Wins	**24.28***	**25.06***	**22.90***	**25.31***
	(12.56)	(13.25)	(12.20)	(13.01)
Constant	-282.6*	-333.3	-202.8*	-223.3*
	(160.20)	(346.10)	(109.20)	(116.00)
Observations	185	185	185	185
R-squared		0.023		0.021
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9457		0.5927	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 91: Lagged NFL Winning Percentage Results – All Data

Football: NFL Winning Percentage- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000387	-0.000372		
	(0.000092)	(0.000275)		
State Senate Democrat Percentage	162.2	26.01		
	(190.40)	(393.40)		
Lag(1) NFL Winning Percentage	70.82	77.11	74.45	79.68
	(181.90)	(196.70)	(181.50)	(196.40)
Constant	-83.6	80.71	-13.27	-15.94
	(139.30)	(282.50)	(98.60)	(106.00)
Observations	511	511	511	511
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9084		0.9445	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 92: Lagged NFL Winning Percentage Results – Sports States

Football: NFL Winning Percentage- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000735	-0.000399		
	(0.000117)	(0.000334)		
State Senate Democrat Percentage	209.5	-46.11		
	(280.60)	(521.50)		
Lag(1) NFL Winning Percentage	-35.69	-86.53	-51.82	-88.62
	(260.90)	(281.50)	(258.90)	(280.40)
Constant	-17.54	266.4	69.37	87.68
	(202.20)	(399.20)	(138.00)	(148.40)
Observations	326	326	326	326
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8011		0.7331	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 93: Lagged NFL Winning Percentage Results – Control States

Football: NFL Winning Percentage- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0002500	-0.0000248		
	(0.000365)	(0.000788)		
State Senate Democrat Percentage	73.22	223.7		
	(192.80)	(515.30)		
Lag(1) NFL Winning Percentage	**388.3***	**399.9***	**366.2***	**403.9***
	(200.80)	(211.80)	(195.00)	(207.80)
Constant	-282.2*	-333.7	-203.2*	-223.2*
	(160.00)	(346.30)	(109.40)	(116.10)
Observations	185	185	185	185
R-squared		0.023		0.021
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9465		0.6006	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 94: NFL Championship Results – All Data

Football: NFL Championship	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000364	-0.000385		
	(0.000092)	(0.000276)		
State Senate Democrat Percentage	158.4	-1.147		
	(190.50)	(392.60)		
NFL Championship	151.1	98.56	161.6	132.6
	(190.70)	(199.60)	(190.10)	(198.60)
Constant	-49.2	136.5	21.33	22.29
	(108.30)	(257.70)	(34.65)	(35.35)
Observations	512	512	512	512
R-squared		0.007		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.6421		0.6148	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 95: NFL Championship Results – Sports States

Football: NFL Championship	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000757	-0.000395		
	(0.000116)	(0.000335)		
State Senate Democrat Percentage	185.7	-54.17		
	(281.10)	(518.90)		
NFL Championship	310.4	211.8	332.4	265.9
	(304.00)	(318.60)	(302.40)	(316.00)
Constant	-27.71	222.7	37.52	39.35
	(160.60)	(362.20)	(50.17)	(51.04)
Observations	327	327	327	327
R-squared		0.008		0.002
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.5578		0.4693	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 96: NFL Championship Results – Control States

Football: NFL Championship	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001060	-0.00028		
	(0.000361)	(0.000791)		
State Senate Democrat Percentage	99.28	178.4		
	(194.30)	(521.00)		
NFL Championship	-18.39	-24.43	-19.75	-17.14
	(174.20)	(183.10)	(173.30)	(180.90)
Constant	-71.64	-66.5	-7.751	-7.864
	(119.20)	(322.30)	(36.04)	(36.95)
Observations	185	185	185	185
R-squared		0.002		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9769		0.96	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 97: NFL Playoffs Results – All Data

Football: NFL Playoffs	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000380	-0.000393		
	(0.000092)	(0.000275)		
State Senate Democrat Percentage	164.8	-1.192		
	(190.40)	(392.80)		
NFL Playoff Appearance	26.6	25.37	27.96	32.56
	(69.35)	(74.01)	(69.25)	(73.91)
Constant	-57.96	131.4	15.17	13.27
	(111.90)	(260.60)	(44.46)	(46.20)
Observations	512	512	512	512
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8897		0.8587	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 98: NFL Playoffs Results – Sports States

Football: NFL Playoffs	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000798	-0.000413		
	(0.000116)	(0.000335)		
State Senate Democrat Percentage	212.7	-52.81		
	(280.70)	(521.20)		
NFL Playoff Appearance	44.64	19.11	40.42	31.02
	(102.30)	(108.70)	(102.10)	(108.00)
Constant	-48.4	227.8	31.33	34.9
	(166.10)	(369.80)	(62.89)	(64.90)
Observations	327	327	327	327
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7119		0.7895	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 99: NFL Playoffs Results – Control States

Football: NFL Playoffs	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001190	-0.000272		
	(0.000363)	(0.000785)		
State Senate Democrat Percentage	95.64	164.4		
	(194.70)	(521.60)		
NFL Playoff Appearance	20.79	32.33	20.65	35.17
	(71.62)	(76.29)	(70.61)	(75.66)
Constant	-81.89	-76.49	-18.32	-25.14
	(123.10)	(320.60)	(48.42)	(50.68)
Observations	185	185	185	185
R-squared		0.003		0.001
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8851		0.5933	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 100: NFL Wins Results – All Data

Football: NFL Wins	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000387	-0.000402		
	(0.000092)	(0.000274)		
State Senate Democrat Percentage	166.5	-12.87		
	(190.40)	(393.30)		
NFL Wins	-4.184	-3.282	-4.057	-3.155
	(11.40)	(12.25)	(11.39)	(12.24)
Constant	-13.54	177.4	59.82	52.46
	(141.80)	(281.90)	(99.03)	(105.80)
Observations	512	512	512	512
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8287		0.8406	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 101: NFL Wins Results – Sports States

Football: NFL Wins	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000806	-0.000418		
	(0.000117)	(0.000334)		
State Senate Democrat Percentage	209.8	-53.94		
	(280.60)	(521.30)		
NFL Wins	3.526	2.584	2.441	2.501
	(16.27)	(17.35)	(16.19)	(17.29)
Constant	-57.55	216.8	27.34	26.86
	(204.60)	(398.00)	(137.50)	(145.80)
Observations	327	327	327	327
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.835		0.992	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 102: NFL Wins Results – Control States

Football: NFL Wins	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000180	-0.000364		
	(0.000368)	(0.000787)		
State Senate Democrat Percentage	108.4	171.6		
	(193.80)	(518.20)		
NFL Wins	-15.01	-15.64	-14.69	-14.76
	(12.82)	(13.45)	(12.46)	(13.31)
Constant	62.43	80.47	117.8	118.4
	(165.30)	(344.80)	(112.80)	(120.00)
Observations	185	185	185	185
R-squared		0.01		0.007
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9768		0.9886	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 103: NFL Wins Change (YoY) Results – All Data

Football: NFL Wins Change (YoY)	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000390	-0.000378		
	(0.000092)	(0.000275)		
State Senate Democrat Percentage	164.7	17.62		
	(190.20)	(392.60)		
NFL Wins Changes	-4.677	-4.463	-4.579	-4.139
	(9.63)	(9.81)	(9.61)	(9.81)
Constant	-48.24	126.6	25.1	25.06
	(108.30)	(257.20)	(34.10)	(34.75)
Observations	511	511	511	511
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9092		0.8249	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 104: NFL Wins Change (YoY) Results – Sports States

Football: NFL Wins Change (YoY)	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000731	-0.000392		
	(0.000116)	(0.000334)		
State Senate Democrat Percentage	208.7	-34.19		
	(280.40)	(519.60)		
NFL Wins Changes	6.064	6.292	6.477	6.884
	(13.87)	(14.09)	(13.83)	(14.08)
Constant	-35.48	213.9	43.12	43.09
	(160.80)	(361.90)	(49.61)	(50.39)
Observations	326	326	326	326
R-squared		0.007		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8551		0.8759	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 105: NFL Wins Change (YoY) Results – Control States

Football: NFL Wins Change (YoY)	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001050	-0.000187		
	(0.000355)	(0.000773)		
State Senate Democrat Percentage	89.18	206.6		
	(191.10)	(511.70)		
NFL Wins Changes	**-25.02****	**-24.69****	**-25.12****	**-24.79****
	(10.01)	(10.29)	(9.96)	(10.23)
Constant	-63.93	-90.08	-5.483	-5.524
	(117.00)	(315.30)	(34.67)	(35.53)
Observations	185	185	185	185
R-squared		0.035		0.033
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9558		0.8871	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 106: NFL Winning Percentage Results – All Data

Football: NFL Winning Percentage	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000390	-0.000403		
	(0.000092)	(0.000275)		
State Senate Democrat Percentage	167.3	-12.17		
	(190.50)	(393.10)		
NFL Winning Percentage	-53.19	-53.39	-47.55	-42.84
	(184.30)	(198.10)	(184.10)	(197.90)
Constant	-20.63	178.1	51.16	48.74
	(142.00)	(282.70)	(100.70)	(107.60)
Observations	512	512	512	512
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8669		0.9483	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 107: NFL Winning Percentage Results – Sports States

Football: NFL Winning Percentage	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000805	-0.000417		
	(0.000116)	(0.000334)		
State Senate Democrat Percentage	208.1	-55.32		
	(280.60)	(520.90)		
NFL Winning Percentage	69.73	37.56	60.03	48.38
	(263.70)	(282.00)	(262.70)	(281.10)
Constant	-63.71	218.9	16.61	22.44
	(204.90)	(399.60)	(140.60)	(149.50)
Observations	327	327	327	327
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8253		0.9073	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 108: NFL Winning Percentage Results – Control States

Football: NFL Winning Percentage	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000221	-0.000365		
	(0.000368)	(0.000787)		
State Senate Democrat Percentage	108.9	172.4		
	(193.90)	(518.40)		
NFL Winning Percentage	-228	-238.5	-222.9	-223.5
	(205.10)	(215.10)	(199.20)	(212.70)
Constant	55.46	74.07	111.6	111.9
	(165.30)	(345.10)	(113.00)	(120.20)
Observations	185	185	185	185
R-squared		0.009		0.006
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9755		0.9936	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

NHL

This section presents all the regression results for the individual MLB regressions. Each table represents one of the sports variables identified in section 3.3 for All Data, Sports States or Control States. Each

table is comprised of four regressions, a fixed effects and random effects with the inclusion and exclusion of potentially confounding variables.

TABLE 109: Lagged NHL Championship Results – All Data

Hockey: NHL Championship- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001120	-0.000414		
	(0.000100)	(0.000354)		
State Senate Democrat Percentage	74.07	-211.5		
	(247.00)	(551.70)		
Lag(1) NHL Championship	**453.3*** **	**540.1*** **	**446.3*** **	**539.4*** **
	(168.60)	(179.70)	(167.90)	(178.20)
Constant	-26.62	202.8	-24.79	-30.13
	(130.80)	(326.60)	(40.23)	(41.12)
Observations	418	418	418	418
R-squared		0.026		0.023
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.3726		0.1201	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 110: Lagged NHL Championship Results – Sports States

Hockey: NHL Championship- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001830	-0.00044		
	(0.000136)	(0.000445)		
State Senate Democrat Percentage	101.2	-545.7		
	(474.00)	(868.10)		
Lag(1) NHL Championship	**775.3*** **	**910.0*** **	**747.3*** **	**895.2*** **
	(266.40)	(282.70)	(263.50)	(278.90)
Constant	1.889	414.3	-31.62	-40.14
	(230.30)	(517.90)	(63.25)	(64.35)
Observations	243	243	243	243
R-squared		0.048		0.043
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.3259		0.106	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 111: Lagged NHL Championship Results – Control States

Hockey: NHL Championship- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000741	-0.000375		
	(0.000381)	(0.000809)		
State Senate Democrat Percentage	104	150.6		
	(201.20)	(547.40)		
Lag(1) NHL Championship	27.39	39.67	25.02	45.78
	(161.40)	(171.20)	(159.50)	(169.80)
Constant	-78.12	-49.8	-15.32	-16.5
	(124.60)	(335.70)	(38.13)	(39.16)
Observations	175	175	175	175
R-squared		0.003		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9656		0.721	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 112: Lagged NHL Playoff Results – All Data

Hockey: NHL Playoffs- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000967	-0.000408		
	(0.000101)	(0.000358)		
State Senate Democrat Percentage	117.1	-25.8		
	(250.10)	(554.80)		
Lag(1) NHL Playoff Appearance	0.562	8.021	8.324	12.37
	(56.46)	(60.89)	(55.71)	(60.32)
Constant	-26.62	136	-4.23	-6.752
	(133.30)	(328.70)	(52.42)	(55.01)
Observations	419	419	419	419
R-squared		0.004		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9217		0.8611	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 113: Lagged NHL Playoff Results – Sports States

Hockey: NHL Playoffs- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001460	-0.000414		
	(0.000138)	(0.000454)		
State Senate Democrat Percentage	252.2	-190.7		
	(475.20)	(873.90)		
Lag(1) NHL Playoff Appearance	59.56	76.81	66.03	86.2
	(126.00)	(145.10)	(125.50)	(143.40)
Constant	-75.21	244.6	-26.02	-37.51
	(246.30)	(527.20)	(94.70)	(103.40)
Observations	244	244	244	244
R-squared		0.005		0.002
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8305		0.7712	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 114: Lagged NHL Playoff Results – Control States

Hockey: NHL Playoffs- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000594	-0.000377		
	(0.000379)	(0.000809)		
State Senate Democrat Percentage	121.9	188.8		
	(205.40)	(549.70)		
Lag(1) NHL Playoff Appearance	-17.6	-17.05	-12.82	-13.1
	(41.56)	(43.34)	(40.39)	(42.68)
Constant	-71.81	-55.19	-4.948	-4.755
	(124.10)	(335.30)	(46.51)	(48.22)
Observations	175	175	175	175
R-squared		0.004		0.001
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9888		0.984	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 115: Lagged NHL Wins Results – All Data

Hockey: NHL Wins-Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000975	-0.00041		
	(0.000101)	(0.000358)		
State Senate Democrat Percentage	117.2	-23.56		
	(247.80)	(554.20)		
Lag(1) NHL Wins	-1.263	0.523	-1.172	0.61
	(4.31)	(4.98)	(4.30)	(4.94)
Constant	22.32	120.4	45.87	-22.44
	(212.00)	(365.60)	(169.40)	(193.60)
Observations	419	419	419	419
R-squared		0.004		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7679		0.4645	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 116: Lagged NHL Wins Results – Sports States

Hockey: NHL Wins-Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001490	-0.000427		
	(0.000138)	(0.000454)		
State Senate Democrat Percentage	238.5	-147.6		
	(479.40)	(870.30)		
Lag(1) NHL Wins	-0.837	1.138	-1.326	1.279
	(6.53)	(7.84)	(6.47)	(7.81)
Constant	-1.602	230.6	61.73	-36.74
	(360.10)	(600.30)	(252.30)	(302.10)
Observations	244	244	244	244
R-squared		0.004		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8102		0.5522	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 117: Lagged NHL Wins Results – Control States

Hockey: NHL Wins- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000658	-0.000362		
	(0.000379)	(0.000812)		
State Senate Democrat Percentage	108.7	180.7		
	(202.50)	(560.90)		
Lag(1) NHL Wins	-0.903	-0.711	-0.644	-0.316
	(4.47)	(4.82)	(4.42)	(4.66)
Constant	-42.76	-36.93	11.23	-1.564
	(204.90)	(353.60)	(176.50)	(185.80)
Observations	175	175	175	175
R-squared		0.003		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9659		0.8242	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 118: Lagged NHL Winning Percentage Results – All Data

Hockey: NHL Winning Percentage- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000968	-0.000411		
	(0.000101)	(0.000358)		
State Senate Democrat Percentage	117.6	-39.96		
	(248.00)	(552.50)		
Lag(1) NHL Winning Percentage	6.867	267.2	-1.303	273.1
	(406.40)	(490.30)	(405.70)	(488.60)
Constant	-30.27	1.75	1.673	-149.6
	(263.80)	(412.00)	(227.00)	(272.20)
Observations	419	419	419	419
R-squared		0.004		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.63		0.3135	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 119: Lagged NHL Winning Percentage Results – Sports States

Hockey: NHL Winning Percentage- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001530	-0.000414		
	(0.000138)	(0.000453)		
State Senate Democrat Percentage	281.5	-142.1		
	(480.80)	(868.40)		
Lag(1) NHL Winning Percentage	288.5	769.1	214.7	791.8
	(612.70)	(790.50)	(604.40)	(788.20)
Constant	-209.7	-155.4	-105.9	-421.7
	(434.70)	(684.20)	(336.60)	(436.00)
Observations	244	244	244	244
R-squared		0.008		0.004
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.5624		0.254	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 120: Lagged NHL Winning Percentage Results – Control States

Hockey: NHL Winning Percentage- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000719	-0.000286		
	(0.000378)	(0.000813)		
State Senate Democrat Percentage	118.5	260.3		
	(201.10)	(555.40)		
Lag(1) NHL Winning Percentage	-417.5	-407.4	-399	-375.2
	(424.90)	(458.10)	(421.70)	(446.50)
Constant	148.5	111.7	208.1	194.9
	(259.40)	(382.70)	(237.50)	(251.30)
Observations	175	175	175	175
R-squared		0.008		0.004
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9384		0.8712	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 121: NHL Championship Results – All Data

Hockey: NHL Championship	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000198	-0.000344		
	(0.000099)	(0.000345)		
State Senate Democrat Percentage	155.6	180.3		
	(240.80)	(535.70)		
NHL Championship	**-349.7****	**-369.4****	**-342.1****	**-350.6***
	(169.90)	(181.50)	(169.20)	(179.80)
Constant	-43.92	58.16	38.4	38.86
	(128.20)	(319.60)	(39.31)	(40.35)
Observations	426	426	426	426
R-squared		0.013		0.009
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9525		0.8894	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 122: NHL Championship Results – Sports States

Hockey: NHL Championship	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000123	-0.000394		
	(0.000133)	(0.000435)		
State Senate Democrat Percentage	259.4	-20.07		
	(448.90)	(824.60)		
NHL Championship	**-474.8***	**-503.5***	**-464.0***	**-483.8***
	(272.00)	(287.00)	(269.30)	(284.30)
Constant	-50.09	253.9	66.79	67.81
	(222.10)	(500.50)	(61.30)	(62.77)
Observations	251	251	251	251
R-squared		0.016		0.012
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8479		0.8276	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 123: NHL Championship Results – Control States

Hockey: NHL Championship	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000131	-0.000227		
	(0.000375)	(0.000800)		
State Senate Democrat Percentage	133.8	462		
	(198.90)	(548.70)		
NHL Championship	-182.2	-197.2	-179.6	-172.3
	(159.20)	(172.10)	(157.80)	(169.20)
Constant	-73.24	-213.9	-2.533	-2.948
	(122.90)	(335.70)	(37.71)	(38.81)
Observations	175	175	175	175
R-squared		0.014		0.006
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8112		0.9053	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 124: NHL Playoffs Results – All Data

Hockey: NHL Playoffs	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000068	-0.000344		
	(0.000099)	(0.000346)		
State Senate Democrat Percentage	142.5	73.19		
	(243.50)	(536.90)		
NHL Playoff Appearance	-24.1	-25.66	-19.98	-19.52
	(55.34)	(59.61)	(54.45)	(59.00)
Constant	-37.56	106.5	32.2	31.91
	(130.20)	(320.30)	(50.75)	(53.30)
Observations	427	427	427	427
R-squared		0.003		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9851		0.9836	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 125: NHL Playoffs Results – Sports States

Hockey: NHL Playoffs	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000341	-0.000387		
	(0.000134)	(0.000438)		
State Senate Democrat Percentage	197	-140		
	(448.80)	(825.20)		
NHL Playoff Appearance	-35.44	-56.01	-34.41	-41
	(121.60)	(138.50)	(120.40)	(136.70)
Constant	-15.71	312.6	62	65.69
	(236.90)	(508.10)	(90.10)	(97.90)
Observations	252	252	252	252
R-squared		0.004		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8199		0.9188	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 126: NHL Playoffs Results – Control States

Hockey: NHL Playoffs	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000469	-0.000289		
	(0.000375)	(0.000801)		
State Senate Democrat Percentage	146.7	391.7		
	(204.70)	(549.70)		
NHL Playoff Appearance	-15.67	-18.42	-9.239	-11.7
	(41.27)	(43.14)	(40.00)	(42.38)
Constant	-83.63	-168.8	-6.459	-4.773
	(123.00)	(334.10)	(45.86)	(47.60)
Observations	175	175	175	175
R-squared		0.007		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8886		0.8605	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 127: NHL Wins Results – All Data

Hockey: NHL Wins	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000091	-0.00033		
	(0.000099)	(0.000346)		
State Senate Democrat Percentage	121	79.37		
	(241.00)	(535.30)		
NHL Wins	-3.867	-3.435	-3.94	-3.389
	(4.24)	(4.84)	(4.23)	(4.82)
Constant	106.1	215.6	171.3	150.1
	(210.80)	(357.90)	(166.80)	(189.20)
Observations	427	427	427	427
R-squared		0.004		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.982		0.8119	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 128: NHL Wins Results – Sports States

Hockey: NHL Wins	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000271	-0.000377		
	(0.000133)	(0.000436)		
State Senate Democrat Percentage	140.5	-188.7		
	(454.40)	(824.60)		
NHL Wins	-5.112	-5.285	-5.452	-5.159
	(6.39)	(7.51)	(6.28)	(7.48)
Constant	181.9	500.1	249.4	238.3
	(354.90)	(590.20)	(245.40)	(290.10)
Observations	252	252	252	252
R-squared		0.005		0.002
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8896		0.9426	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 129: NHL Wins Results – Control States

Hockey: NHL Wins	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000520	-0.000243		
	(0.000375)	(0.000813)		
State Senate Democrat Percentage	133.7	418.3		
	(200.80)	(570.50)		
NHL Wins	-0.88	-1.796	-0.568	-0.807
	(4.47)	(4.91)	(4.42)	(4.65)
Constant	-53.81	-130.4	9.433	18.76
	(204.50)	(344.20)	(176.70)	(185.70)
Observations	175	175	175	175
R-squared		0.006		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8632		0.8689	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 130: NHL Wins Change (YoY) Results – All Data

Hockey: NHL Wins Change (YoY)	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000039	-0.000328		
	(0.000099)	(0.000356)		
State Senate Democrat Percentage	126.6	54.07		
	(245.10)	(547.10)		
NHL Wins Changes	-1.504	-1.506	-1.516	-1.583
	(3.76)	(3.87)	(3.75)	(3.86)
Constant	-40.11	99.5	23.22	23.24
	(130.30)	(326.80)	(38.86)	(39.85)
Observations	419	419	419	419
R-squared		0.003		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9891		0.9409	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 131: NHL Wins Change (YoY) Results – Sports States

Hockey: NHL Wins Change (YoY)	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000452	-0.00036		
	(0.000136)	(0.000451)		
State Senate Democrat Percentage	221.7	-175.7		
	(469.20)	(863.20)		
NHL Wins Changes	-2.668	-2.896	-2.684	-2.912
	(6.21)	(6.39)	(6.19)	(6.36)
Constant	-35.01	294.7	48.93	48.99
	(229.90)	(521.70)	(61.38)	(62.86)
Observations	244	244	244	244
R-squared		0.004		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8593		0.8753	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 132: NHL Wins Change (YoY) Results – Control States

Hockey: NHL Wins Change (YoY)	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000518	-0.000293		
	(0.000375)	(0.000803)		
State Senate Democrat Percentage	129.5	354		
	(199.70)	(543.20)		
NHL Wins Changes	-0.14	-0.0521	-0.141	-0.0614
	(3.37)	(3.48)	(3.36)	(3.46)
Constant	-85.97	-161.4	-12.74	-12.77
	(122.90)	(334.20)	(36.78)	(37.73)
Observations	175	175	175	175
R-squared		0.006		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8892		0.9228	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 133: NHL Winning Percentage Results – All Data

Hockey: NHL Winning Percentage	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000108	-0.000334		
	(0.000099)	(0.000346)		
State Senate Democrat Percentage	114.2	75.28		
	(241.10)	(534.00)		
NHL Winning Percentage	-449	-447.2	-458.5	-440.5
	(398.20)	(474.40)	(396.90)	(473.20)
Constant	208.3	333.6	273.1	263.1
	(259.80)	(403.40)	(222.40)	(264.10)
Observations	427	427	427	427
R-squared		0.005		0.002
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9966		0.9442	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 134: NHL Winning Percentage Results – Sports States

Hockey: NHL Winning Percentage	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000245	-0.000386		
	(0.000133)	(0.000436)		
State Senate Democrat Percentage	130.3	-192.2		
	(454.60)	(824.00)		
NHL Winning Percentage	-541.9	-641.5	-573.5	-613.5
	(595.90)	(751.70)	(584.70)	(748.60)
Constant	288.6	657	356.9	378.8
	(423.60)	(667.10)	(325.80)	(414.50)
Observations	252	252	252	252
R-squared		0.006		0.003
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8699		0.9318	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 135: NHL Winning Percentage Results – Control States

Hockey: NHL Winning Percentage	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0000548	-0.000208		
	(0.000375)	(0.000814)		
State Senate Democrat Percentage	136.8	431.1		
	(200.10)	(558.30)		
NHL Winning Percentage	-212	-268.2	-190.4	-209.3
	(424.30)	(461.40)	(421.20)	(444.90)
Constant	28.11	-61.78	93.5	104
	(259.40)	(374.80)	(238.00)	(251.20)
Observations	175	175	175	175
R-squared		0.008		0.001
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8524		0.8951	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

NCAA

This section presents all the regression results for the individual NCAA regressions. Each table represents one of the sports variables identified in section 3.3 for All Data, Sports States or Control States. Each table is comprised of four regressions, a fixed effects and random effects with the inclusion and exclusion of potentially confounding variables.

TABLE 136: Lagged NCAA Bowl Win Results – All Data

College Football: NCAA Bowl Win- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000260	-0.000398		
	(0.000093)	(0.000273)		
State Senate Democrat Percentage	150.3	-44.46		
	(189.60)	(391.40)		
Lag(1) College Bowl Win	-62.17	-55.46	-75.8	-73.87
	(74.27)	(79.80)	(71.85)	(77.74)
Constant	-21.14	185.5	53.56	52.93
	(112.80)	(261.10)	(41.00)	(42.64)
Observations	519	519	519	519
R-squared		0.007		0.002
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.6963		0.9481	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 137: Lagged NCAA Bowl Win Results – Sports States

College Football: NCAA Bowl Win- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000638	-0.000419		
	(0.000118)	(0.000330)		
State Senate Democrat Percentage	191.6	-99.62		
	(276.60)	(516.90)		
Lag(1) College Bowl Win	-64.27	-56.79	-90.74	-81.82
	(107.80)	(114.90)	(102.90)	(110.50)
Constant	-3.642	281.8	80.07	77.08
	(165.70)	(366.70)	(59.60)	(61.72)
Observations	334	334	334	334
R-squared		0.008		0.002
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.3305		0.8248	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 138: Lagged NCAA Bowl Win Results – Control States

College Football: NCAA Bowl Win- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001020	-0.000272		
	(0.000361)	(0.000784)		
State Senate Democrat Percentage	79.76	147.5		
	(196.80)	(522.30)		
Lag(1) College Bowl Win	-47.31	-54.42	-52.55	-58.49
	(77.66)	(84.46)	(76.25)	(83.54)
Constant	-47.26	-35.83	7.586	9.416
	(125.90)	(324.70)	(42.32)	(44.30)
Observations	185	185	185	185
R-squared		0.005		0.003
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9282		0.8619	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 139: Lagged NCAA Wins Results – All Data

College Football: NCAA Wins- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000346	-0.000412		
	(0.000093)	(0.000273)		
State Senate Democrat Percentage	164.2	-36.39		
	(190.30)	(396.60)		
Lag(1) College Football Wins	-4.313	-6.225	-7.225	-8.086
	(12.74)	(14.83)	(12.28)	(14.38)
Constant	-14.25	213.1	82.31	88.68
	(151.40)	(301.90)	(96.88)	(111.80)
Observations	519	519	519	519
R-squared		0.007		0.001
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7219		0.9083	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 140: Lagged NCAA Wins Results – Sports States

College Football: NCAA Wins- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000736	-0.000431		
	(0.000118)	(0.000331)		
State Senate Democrat Percentage	205.7	-85.26		
	(277.70)	(526.30)		
Lag(1) College Football Wins	-4.657	-5.414	-9.916	-7.907
	(18.44)	(20.68)	(17.57)	(19.76)
Constant	6.252	300.5	124.1	109
	(221.10)	(428.50)	(140.60)	(156.40)
Observations	334	334	334	334
R-squared		0.007		0.001
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.4151		0.8243	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 141: Lagged NCAA Wins Results – Control States

College Football: NCAA Wins- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001020	-0.00032		
	(0.000362)	(0.000791)		
State Senate Democrat Percentage	92.66	143.7		
	(197.80)	(525.30)		
Lag(1) College Football Wins	-2.413	-8.588	-3.756	-8.516
	(13.43)	(16.93)	(13.11)	(16.62)
Constant	-51.18	16.87	18.41	52.67
	(168.30)	(364.20)	(100.70)	(124.90)
Observations	185	185	185	185
R-squared		0.004		0.002
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9349		0.6413	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 142: Lagged NCAA Winning Percentage Results – All Data

College Football: NCAA Winning Percentage- Lag 1	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000438	-0.000406		
	(0.000093)	(0.000274)		
State Senate Democrat Percentage	180.8	-0.987		
	(188.50)	(393.70)		
Lag(1) College Football Winning Percentage	39.69	-8.817	6.627	-14.19
	(173.00)	(200.80)	(169.40)	(197.00)
Constant	-75.76	152.4	24.92	37.36
	(154.00)	(305.40)	(106.70)	(122.60)
Observations	519	519	519	519
R-squared		0.006		0
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8066		0.8358	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 143: Lagged NCAA Winning Percentage Results – Sports States

College Football: NCAA Winning Percentage- Lag 1	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000849	-0.000424		
	(0.000117)	(0.000332)		
State Senate Democrat Percentage	224.9	-42.56		
	(274.80)	(520.60)		
Lag(1) College Football Winning Percentage	51.56	11.61	-6.616	1.092
	(250.70)	(279.30)	(244.50)	(271.50)
Constant	-65.8	227.7	53.68	48.98
	(226.00)	(433.30)	(156.90)	(172.90)
Observations	334	334	334	334
R-squared		0.007		0
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.5044		0.948	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 144: Lagged NCAA Winning Percentage Results – Control States

College Football: NCAA Winning Percentage- Lag 1	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001090	-0.000306		
	(0.000362)	(0.000799)		
State Senate Democrat Percentage	101	163.9		
	(196.10)	(525.10)		
Lag(1) College Football Winning Percentage	11.88	-58.85	-3.477	-49.94
	(181.90)	(231.60)	(179.10)	(225.90)
Constant	-80.52	-23.24	-6.609	20.07
	(170.00)	(371.70)	(108.70)	(134.70)
Observations	185	185	185	185
R-squared		0.003		0
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.9018		0.7359	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 145: NCAA Bowl Win Results – All Data

College Football: NCAA Bowl Win	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000673	-0.000395		
	(0.000092)	(0.000271)		
State Senate Democrat Percentage	231.8	157.3		
	(188.40)	(389.70)		
College Football Bowl Win	**152.0****	**178.8****	**131.0***	**158.3****
	(73.22)	(78.57)	(71.70)	(77.17)
Constant	-121.1	3.696	-13.77	-22.65
	(112.20)	(260.80)	(40.91)	(42.43)
Observations	519	519	519	519
R-squared		0.017		0.008
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7825		0.3391	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 146: NCAA Bowl Win Results – Sports States

College Football: NCAA Bowl Win	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001200	-0.000413		
	(0.000116)	(0.000328)		
State Senate Democrat Percentage	284.8	163.1		
	(274.00)	(513.90)		
College Football Bowl Win	**193.8***	**225.7****	158.4	**194.4***
	(105.40)	(112.40)	(102.70)	(109.40)
Constant	-117	48.19	-3.459	-15.53
	(164.20)	(366.20)	(59.45)	(61.33)
Observations	334	334	334	334
R-squared		0.02		0.01
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.7551		0.3409	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 147: NCAA Bowl Win Results – Control States

College Football: NCAA Bowl Win	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001340	-0.000214		
	(0.000361)	(0.000784)		
State Senate Democrat Percentage	136.4	247.1		
	(196.60)	(521.80)		
College Football Bowl Win	85.1	91.5	74.81	87.67
	(77.69)	(84.30)	(76.15)	(83.37)
Constant	-121.1	-139.1	-31.66	-35.62
	(126.50)	(325.50)	(42.27)	(44.22)
Observations	185	185	185	185
R-squared		0.009		0.006
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.7664		0.705	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 148: NCAA Wins Results – All Data

College Football: NCAA Wins	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000643	-0.000378		
	(0.000093)	(0.000272)		
State Senate Democrat Percentage	223.3	146		
	(189.40)	(393.60)		
College Football Wins	19.28	**25.01***	15.28	21.84
	(12.63)	(14.58)	(12.27)	(14.23)
Constant	-210.9	-122.3	-84.24	-132.8
	(150.00)	(297.90)	(96.87)	(110.80)
Observations	519	519	519	519
R-squared		0.012		0.005
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.8143		0.363	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 149: NCAA Wins Results – Sports States

College Football: NCAA Wins	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001120	-0.000398		
	(0.000117)	(0.000330)		
State Senate Democrat Percentage	278.6	137.9		
	(276.50)	(520.80)		
College Football Wins	23.04	29.45	16.01	24.48
	(18.23)	(20.44)	(17.52)	(19.71)
Constant	-224.7	-89.94	-70.61	-134.3
	(219.30)	(421.50)	(140.30)	(156.10)
Observations	334	334	334	334
R-squared		0.014		0.005
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8649		0.3486	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 150: NCAA Wins Results – Control States

College Football: NCAA Wins	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001540	-0.000121		
	(0.000362)	(0.000797)		
State Senate Democrat Percentage	134.7	261.2		
	(196.50)	(524.90)		
College Football Wins	14.41	16.2	12.41	15.84
	(13.44)	(16.57)	(13.13)	(16.14)
Constant	-200.3	-246	-98.11	-122.8
	(168.10)	(366.20)	(101.00)	(121.80)
Observations	185	185	185	185
R-squared		0.008		0.006
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.7458		0.7149	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 151: NCAA Wins Change (YoY) Results – All Data

College Football: NCAA Wins Change (YoY)	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000372	-0.000405		
	(0.000091)	(0.000272)		
State Senate Democrat Percentage	170.4	-9.789		
	(186.60)	(384.40)		
College Football Wins Change	**23.88***	**24.48***	**24.17***	**24.71***
	(12.70)	(12.93)	(12.69)	(12.94)
Constant	-48.82	151.2	28.65	28.64
	(106.90)	(253.80)	(33.59)	(34.21)
Observations	519	519	519	519
R-squared		0.014		0.007
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.7759		0.8327	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 152: NCAA Wins Change (YoY) Results – Sports States

College Football: NCAA Wins Change (YoY)	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000771	-0.00043		
	(0.000114)	(0.000329)		
State Senate Democrat Percentage	214.4	-66.56		
	(272.10)	(504.50)		
College Football Wins Change	28	28.85	28.42	28.95
	(18.34)	(18.61)	(18.31)	(18.61)
Constant	-32.05	249.6	49.47	49.47
	(157.90)	(354.70)	(48.47)	(49.21)
Observations	334	334	334	334
R-squared		0.015		0.008
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.3321		0.873	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 153: NCAA Wins Change (YoY) Results – Control States

College Football: NCAA Wins Change (YoY)	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001260	-0.000218		
	(0.000360)	(0.000783)		
State Senate Democrat Percentage	94.25	188.5		
	(193.50)	(517.90)		
College Football Wins Change	16.61	16.76	16.57	17.05
	(13.33)	(13.69)	(13.26)	(13.61)
Constant	-72.5	-80.39	-8.874	-8.882
	(118.40)	(319.20)	(35.10)	(35.95)
Observations	185	185	185	185
R-squared		0.011		0.009
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.8596		0.8758	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 154: NCAA Winning Percentage Results – All Data

College Football: NCAA Winning Percentage	All Data			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0000580	-0.000367		
	(0.000092)	(0.000274)		
State Senate Democrat Percentage	202.8	98.04		
	(187.80)	(391.60)		
College Football Winning Percentage	246.8	265	212.5	256
	(171.90)	(198.10)	(169.40)	(195.00)
Constant	-206.5	-73.41	-97.85	-123.8
	(152.60)	(302.10)	(106.50)	(121.20)
Observations	519	519	519	519
R-squared		0.01		0.003
Number of Statenum	25	25	25	25
Hausman Prob>chi2	0.9371		0.6529	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 155: NCAA Winning Percentage Results – Sports States

College Football: NCAA Winning Percentage	Sports States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	-0.0001000	-0.000389		
	(0.000116)	(0.000331)		
State Senate Democrat Percentage	249.1	67.6		
	(273.90)	(517.10)		
College Football Winning Percentage	273.8	291.8	215.2	272.4
	(248.40)	(276.90)	(243.80)	(270.70)
Constant	-207.5	-13.19	-81.28	-116.1
	(224.00)	(427.90)	(156.10)	(171.90)
Observations	334	334	334	334
R-squared		0.011		0.003
Number of Statenum	14	14	14	14
Hausman Prob>chi2	0.8711		0.6263	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

TABLE 156: NCAA Winning Percentage Results – Control States

College Football: NCAA Winning Percentage	Control States			
Model Number	(1)	(2)	(3)	(4)
VARIABLES	Random Effects	Fixed Effects	Random Effects	Fixed Effects
State GDP	0.0001570	-0.0000773		
	(0.000363)	(0.000808)		
State Senate Democrat Percentage	124.4	255.9		
	(195.10)	(524.30)		
College Football Winning Percentage	199.3	219.7	178.3	219.1
	(182.80)	(228.40)	(179.70)	(220.10)
Constant	-205.9	-257.8	-111	-134.5
	(170.30)	(373.90)	(109.00)	(131.40)
Observations	185	185	185	185
R-squared		0.008		0.006
Number of Statenum	11	11	11	11
Hausman Prob>chi2	0.7538		0.7484	
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				

APPENDIX D: SPORTS VS CONTROL STATE SEGMENTATION

As the data was being collected a clear distinction developed, some of the states are not home to any professional sports teams but they did have state register data. The creation of these segmentations was the result of the opportunity to compare two fundamentally different types of states. The sports states are fundamentally different in many ways starting with a higher population as the result of larger cities which also are home to a specific industry or many larger companies. These fundamental qualities create the demand for professional sports as well as other forms of entertainment or opportunities to increase utility (restaurants, fine arts, etc.). As mentioned in section 5.2, the threshold of being home to two professional sports teams for a sports state was subjective and could be increased or decreased.