



January 2013

The Effects Of The State Agriculture Industry On Elections In South Dakota

Whitney Keleah Morsching

Follow this and additional works at: <https://commons.und.edu/theses>

Recommended Citation

Morsching, Whitney Keleah, "The Effects Of The State Agriculture Industry On Elections In South Dakota" (2013). *Theses and Dissertations*. 1459.

<https://commons.und.edu/theses/1459>

This Thesis is brought to you for free and open access by the Theses, Dissertations, and Senior Projects at UND Scholarly Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of UND Scholarly Commons. For more information, please contact zeinebyousif@library.und.edu.

THE EFFECTS OF THE STATE AGRICULTURE INDUSTRY ON ELECTIONS
IN SOUTH DAKOTA

by

Whitney Keleah Morsching
Bachelor of Science, Northern State University, 2011

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, North Dakota

May
2013

This thesis, submitted by Whitney K. Morsching in partial fulfillment of the requirements for the Degree of Master of Science in Applied Economics from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

Dr. David T. Flynn, Chairperson

Dr. Pradosh Simlai

Dr. Cullen F. Goenner

This thesis is being submitted by the appointed advisory committee as having met all of the requirements of the Graduate School at the University of North Dakota and is hereby approved.

Dr. Wayne Swisher

Date

PERMISSION

Title The Effects of the State Agriculture Industry on Elections in South
 Dakota

Department Applied Economics

Degree Master of Science in Applied Economics

In presenting this thesis in partial fulfillment of the requirements for a graduate degree from the University of North Dakota, I agree that the library of this University shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by the professor who supervised my thesis work or, in his absence, by the Chairperson of the department or the dean of the Graduate School. It is understood that any copying or publication or other use of this thesis or part thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of North Dakota in any scholarly use which may be made of any material in my thesis.

Whitney Morsching
May 1, 2013

TABLE OF CONTENTS

LIST OF FIGURES.....	v
LIST OF TABLES.....	vi
ACKNOWLEDGMENTS.....	vii
ABSTRACT.....	viii
CHAPTER	
I. INTRODUCTION.....	1
II. BACKGROUND.....	2
III. LITERATURE REVIEW.....	6
IV. DATA AND METHODOLOGY.....	10
V. RESULTS AND INTERPRETATION.....	15
VI. CONCLUSION.....	25
REFERENCES.....	28

LIST OF FIGURES

Figure	Page
1. Average earnings from farming, agricultural services, and mining as share of total state earnings, selected years.....	8

LIST OF TABLES

Table	Page
1. 2007 Census of Agriculture Historical Highlights.....	2
2. U.S. Dept of Labor, Bureau of Labor Statistics, Employment Hours and Earnings from the Current Employment Statistics Survey, December 1999 & 2009.....	3
3. OLS Estimations, using Only Incumbent Candidates' Vote Share as Dependent Variable.....	16
4. OLS Estimations, using All Candidates' Vote Share as Dependent Variable..	20
5. Probit Marginal Effects Estimations, using a Binary Variable of whether a Candidate Won as Dependent Variable.....	23

ACKNOWLEDGMENTS

Thank you to my professors at the University of North Dakota for all of your help and support during this process, especially to Professor Flynn for his advice and guidance. Thank you, Brennan Dyk, Doug Hart, Nathan Orwick, and Yi (Julia) Liu for all your feedback and suggestions and for being my comrades in the MSAE program.

ABSTRACT

Although South Dakota has traditionally been an agriculture-based state, the state's economy has diversified immensely over the past few decades. This paper examines if the state agriculture industry has an effect on the statewide election results since 1990. Three models are used to determine the impact of farm earnings, state and national economic factors, and other control variables on the vote share of a candidate. Two ordinary least squares models focus on elections with incumbent candidates and elections with all candidates. A third model uses a probit estimation to determine the impact of the previously stated variables on the probability of a candidate winning the statewide election. The results indicate that political party and incumbency have a much greater impact on a candidate's election and vote share than the economic variables. The results also indicate that farm earnings have no significant effect on the state's election results.

CHAPTER I INTRODUCTION

Although it came into existence under Republican Party dominance, South Dakota is not the predictable stronghold of conservatism that some assume. The state's political culture has repeatedly been described as agrarian conservatism, which came to being from traditional republicanism, agrarian populism, small-town culture, local institutions, personality politics, ethnic settlement patterns, and geographic isolation (Hogan, Lauck, & Miller, 2004). The electorate traditionally supports Republican candidates, but not if they are against preserving the agrarian economic order, according to Hogan et al. (2004) and Cohen (2012). In the past few decades, however, the state's economy has become more diverse, decreasing the overall impact of agriculture. This brings up the question: to what extent does agriculture still play a role in politics and election results in South Dakota? This paper will attempt to answer this question.

CHAPTER II BACKGROUND

South Dakota has historically been one of the nation's largest producers of agricultural products. Agriculture continues to be a substantial contributor to the state's economy and a way of life for many of its citizens. Today, agriculture generates more than \$21 billion in annual economic activity and contributes nearly \$3.1 billion to the state's gross domestic product (2011 South Dakota Profile). In addition, production agriculture and its value added industries employed over 80,000 South Dakotans in 2010 (South Dakota Department of Agriculture). However, the number of farms has been steadily decreasing over

Table 1: 2007 Census of Agriculture Historical Highlights.

	1982	1987	1992	1997	2002	2007
Farms (number)	37,148	36,376	34,057	33,284	31,736	31,169
Land in farms (acres)	43,810,988	44,157,503	44,828,124	44,354,880	43,785,079	43,666,403
Average size of farm (acres)	1,179	1,214	1,316	1,418	1,380	1,401

time, whereas the size of the average farm has increased. The number of farms has gone from 37,148 in 1982 to 31,169 in 2007 with the average size increasing from 1,149 to 1,401 acres (2007 Census of Agriculture). The historical number of farms, land in farms, and average farm size are shown below in Table 1 using data from the 2007 Census of Agriculture. Family farms, the traditional type of

farm, are becoming less common, perhaps impacting the influence of agriculture on the culture of the state as a whole.

While agriculture is still a major industry in South Dakota, the state's economy is becoming more diversified, with substantial health care, manufacturing, financial services, and tourism sectors. In fact, the number of nonfarm workers grew 5.96% from 1999-2009 compared to a decrease of 0.72% nation-wide (2011 South Dakota Profile). This growth in nonfarm workers is broken down by industry in Table 2. This diversification has happened more rapidly in the last 20 years and has had an impact on the state's population, urbanization, and demographics.

Table 2: U.S. Dept of Labor, Bureau of Labor Statistics, Employment Hours and Earnings from the Current Employment Statistics Survey, December 1999 & 2009

Industry	South Dakota	National
Natural Resources/Mining/Construction	8.47%	-12.74%
Manufacturing	-16.59%	-33.24%
Wholesale Trade	11.59%	-6.47%
Retail Trade	2.84%	-5.20%
Transportaiton/Warehousing/Utilities	4.92%	-4.81%
Information	-1.47%	-22.19%
Financial Activities	13.85%	-0.23%
Professional/Business Services	-5.24%	0.78%
Education/Health Services	25.44%	29.55%
Leisure/Hospitality	10.83%	10.98%
Other Services	-4.88%	3.43%
Government	8.47%	9.45%
Totals	5.96%	-0.72%

As touched on earlier, South Dakota has historically been a Republican state, especially when it comes to gubernatorial and presidential races. In fact,

the last Democratic presidential candidate to carry the state was Lyndon Johnson in 1964. A 2011 Gallup poll measuring the percentage of residents in each state identifying with either the Democratic or Republican Party ranked South Dakota the ninth most Republican state. However, South Dakota has several characteristics that allow candidates of other parties to win statewide elections, with the two most important characteristics being the state's small population and its agrarian roots. The relatively small population of the state enables campaigners to compensate for ideological differences between the candidate and the electorate. Even with the state's political climate described as "agrarian conservatism," the agrarian has usually taken precedence when the two conflict (Cohen, 2012). This focus on agricultural issues, particularly federal subsidies and grants, and the ability of candidates to connect personally with voters has made statewide elections, especially those for the U.S. House and Senate, particularly intriguing. During the last 50 years, South Dakota has always had at least one Democratic U.S. Senator or Representative, which is very surprising considering how supposedly conservative the state is.

This study will focus on the impact of agriculture on all statewide elections in South Dakota with the hypothesis that agriculture is of decreasing importance in how people vote, and, therefore, has had a decreasing effect on election results over time. In addition, the expectation is agriculture will have a greater impact on "premier races" (elections for Governor, Presidential Electors, U.S. Senate, and U.S. House) than other statewide races. The reasoning behind this

is that clarity of responsibility, the ability of citizens to assign responsibility for economic or other policy decisions to elected officials, is greater with higher-level officials. Therefore, it is more likely that citizens will vote for these candidates and/or their parties based on the economic conditions resulting from these decisions (Powell & Whitten, 1993).

CHAPTER III

LITERATURE REVIEW

There have been numerous studies looking at the effect of economic conditions on election results, most of which focus on presidential or gubernatorial elections. The research into economic voting (citizens voting based on the economic conditions in their local area/state/nation) has delved into more specific topics as well, such as the clarity of responsibility, the effects of multilevel governance, the effects of economic crises, states' economic structures, and the effects of the state economy vs. the national economy. A number of these studies are relevant for the study of South Dakota. There are mixed results on how big a role the condition of the economy has on voting results. Researchers have been less successful in efforts to detect a relationship between state-level economic conditions and state-level elections compared to national economic conditions on state- and national-level elections (Kenney, 1983). However, the effects of the agriculture industry on a state traditionally based in agriculture have not been specifically examined in previous research.

One of the first studies to examine sub-national elections was done by Sam Peltzman (1987). Looking at gubernatorial elections from 1949 – 1984, he was able to conclude that voters in gubernatorial elections seem to have the

ability to distinguish when national rather than local policies have a greater effect on their income. Also, he found that voters “punished” incumbent governors when the state budget was increased. All results in this paper show a connection between the economy and the vote.

Studies by Powell and Whitten (2001) and Cameron D. Anderson (2006) delve into the effects of multilevel governance and advance the clarity of responsibility argument. Powell and Whitten were one of the first to include a measure of political responsibility in the study of economic voting. Because their study was cross-national, their results were largely dependent on the political conditions in each country. Anderson combines the two ideas of multilevel governance and clarity of responsibility with the understanding that in multilevel governance, the process of correctly assigning responsibility for economic outcomes is difficult. Anderson looks at the effects of economic conditions in elections in 33 countries, concluding that the economic effects in elections to national governments or parliaments are weakened by the presence of multilevel governance. This strengthens the previous literature’s theory: where clarity of responsibility is high (low), economic effects on incumbent support are greater (less). These results could be significant in looking at data from South Dakota because of the different levels of government officials who are elected in its statewide elections.

Ebeid and Rodden (2006) hypothesize the connection between economic conditions and incumbents' vote share is mediated by the structure of the state economy. They postulate that economic voting (voting based on economic conditions) is more likely in modern, diversified economies than those with agricultural or extractive economies (like South Dakota). Figure 1 is from Ebeid and Rodden's paper and is a great indicator of how the agriculture industry and other primary product industries have decreased in importance not just in South

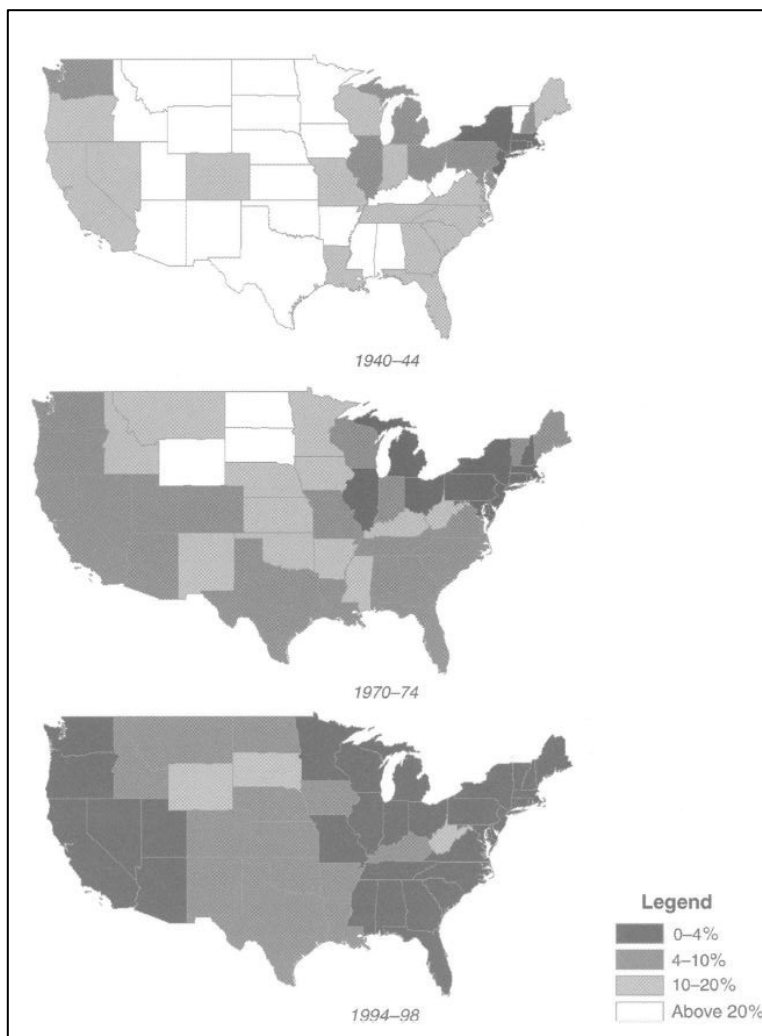


Figure 1. Average earnings from farming, agricultural services, and mining as share of total state earnings, selected years.

Dakota, but across the country. The percentages indicate the average earnings from farming, agricultural services and mining as a share of total state earnings for select years (Ebeid & Rodden, 2006). An important idea from Ebeid and Rodden in the context of this paper is that voters in these states likely understand that changes in

economic conditions are not easily traced to the performance of state officials, but rather are in the hands of federal officials. Their model uses the gubernatorial incumbent party's vote share as the dependent variable. It also uses a number of control variables, such as dummy variables for incumbent candidates, presidential election years, non-presidential election years, and whether the incumbent gubernatorial party is the same as the president's party. Their findings support their hypotheses, but are not totally consistent for all states whose economies are based in primary products and those with more diversified economies. They conclude that the signs of economic voting are the most discernible in states that rely least on farming and natural resources. Their results find little evidence that voters base their decisions on raw state-level macroeconomic aggregates. Rather, they appear to place greater relevance to comparing state-level economic conditions to national averages.

CHAPTER IV

DATA AND METHODOLOGY

This study uses South Dakota general election results from 1990 through 2010, separated into county-level results in order to ensure significant degrees of freedom. All statewide elections were taken into account, including Presidential electors, United States Senate, United States House, Governor and Lieutenant Governor (on the same ticket), Secretary of State, Attorney General, State Auditor, State Treasurer, Commissioner of Schools and Public Lands, and Public Utilities Commissioner. Premier races are defined as the races for Presidential electors, United States Senate, United States House, and Governor and Lieutenant Governor. All of the election results were retrieved from the South Dakota Secretary of State's website, www.sdsos.gov. Election results for each candidate are given as the percentage of total votes received in that specific race.

The central variable of interest is the condition of South Dakota's agriculture industry. Farm earnings, as reported annually by the United States Bureau of Economic Analysis, is the measure of the industry performance. SIC codes were used from 1990 through 2000 and NAICS industry codes were used from 2001 forward, all at the two-digit level. Although elected officials' terms are

of varying lengths, South Dakota general elections are held only every two years. The varying term lengths make it more difficult to assign responsibility for past economic conditions to current candidates and incumbents. Therefore, the election year's economic conditions are the most important for voters. As Powell and Whitten found, voters have short memories in terms of the economy. However, first lags, or previous year's value, of all economic variables were also retrieved to account for those voters who are more retrospective with economic conditions when making their voting decisions. The percentage change from the previous year of farm earnings is used in order to maintain consistency with the measure of election results.¹ Nonfarm earnings are also used for comparison to farm earnings in the state. Measures of the state and U.S. economy were also retrieved from the U.S. B.E.A. In keeping with previous literature, both state- and national-level personal income is used as a measure of the overall economy. It should be noted that economic variables for the year 2001 (the one-year lag for the 2002 elections) are not available because of the change in classification systems between the years 2000 and 2001.

A number of control variables are also used in keeping with previous literature and to control for South Dakota's specific political environment. To begin with, dummy variables were created to denote candidates of the Republican and Democratic Parties. All other candidates were grouped into the dummy variable "third party." These dummy variables equal one when the

¹ The percentage change is used for all data from this point forward unless otherwise specified.

candidate is of the indicated party and zero otherwise. The expectation is that there should be a high correlation between Republican candidates and vote share because South Dakota is very much a Republican state, as aforementioned. A dummy variable was also created to denote incumbent candidates. When an incumbent candidate runs, they typically enjoy a “well-known advantage” that makes such races notably different from open races (Ebeid & Rodden, 2006). A time trend variable is also included to capture any trends over time not caused by the variables already included.

This study employs three models, each with similar independent variables but different dependent variables. The first regression uses ordinary least squares and looks only at races with an incumbent candidate. The dependent variable in this regression is the percentage of vote received by the incumbent candidate. This type of regression is very common in the literature, which is why it is included in this study. The first OLS model is shown in Equation 1.

Equation 1

$$\text{Incumbent Vote} = \beta_1 \text{Personal Income} + \beta_2 \text{Farm Earnings} + \beta_3 \text{Nonfarm Earnings} \\ + \beta_4 \text{U.S. Income} + \beta_5 \text{Republican} + \beta_6 \text{Democrat} + \beta_7 \text{Time Trend} + \varepsilon$$

The second model is also an OLS model using the percentage of vote as the dependent variable. However, this model differs from the first in that this model examines all races, both those with incumbent candidates and open races. This provides a much broader picture of elections in South Dakota,

considering most statewide races are open because of term limits on many elected positions. This broader model is also more helpful in determining how much political party affiliations help candidates compared to just examining incumbents. This type of model is not as common in the literature because it is difficult for voters to assign responsibility to candidates who have not been in office. Another difference from the first model is that the dummy for an incumbent candidate is now included. This should discern the advantage/disadvantage held by an incumbent candidate as opposed to one newly seeking office. The second OLS model is shown in Equation 2.

Equation 2

$$\text{Vote} = \beta_1 \text{Personal Income} + \beta_2 \text{Farm Earnings} + \beta_3 \text{Nonfarm Earnings} + \beta_4 \text{U.S. Income} + \beta_5 \text{Republican} + \beta_6 \text{Democrat} + \beta_7 \text{Time Trend} + \beta_8 \text{Incumbent} + \varepsilon$$

The third model differs from the first two in that ordinary least squares estimation is no longer used. Because the data is broken down by county, the previous models do not take into account how well a candidate did in the statewide election. This model looks at whether or not a candidate won their respective race. Therefore, a binary variable was created equaling one if a candidate won the election and zero if they lost. Because this variable is being used as the dependent variable in the model, a probit estimation must be used. This estimation model uses the same independent variables as the second OLS model. The probit model is shown in Equation 3.

Equation 3

$$\begin{aligned} Pr(\text{Winner}=1 \mid \text{Personal Income, Farm Earnings, Nonfarm Earnings, U.S.} \\ \text{Income, Republican, Democrat, Time Trend, Incumbent}) = \Phi(\beta_1 \text{Personal Income} \\ + \beta_2 \text{Farm Earnings} + \beta_3 \text{Nonfarm Earnings} + \beta_4 \text{U.S. Income} + \beta_5 \text{Republican} \\ + \beta_6 \text{Democrat} + \beta_7 \text{Time Trend} + \beta_8 \text{Incumbent}) \end{aligned}$$

All three models are subjected to a number of different specifications, including regressions with all ten races and those with only the premier races. Also, the results of the two-party vote, including only Democrats and Republicans, are examined within the regressions in accordance to the literature. Many previous analyses have only looked at the two-party vote, including Peltzman and Ebeid and Rodden. Again, the results of the two-party vote are examined for all ten races and separately for the premier races. The lagged values of the economic factors are included in an additional set of regressions, for both the entire results and those of the two-party vote. By breaking down the models into these separate regressions, I hope to observe tendencies behind the way South Dakotans vote and how that reasoning differs depending on the race.

CHAPTER V

RESULTS AND INTERPRETATION

The results for all three estimations are shown with the descriptions of their results in this section. The first column (1) shows the results for all observations, including all ten races and candidates from Republican, Democratic, and Third Parties. Column two (2) shows results for candidates of all political parties, but only for premier races (Presidential electors, U.S. Senate, U.S. House, and Governor). The third column (3) shows results for all statewide races, but only includes candidates from the two major political parties – Republican and Democratic. The fourth column (4) then examines only two-party, premier race results. The next four columns (5-8) follow the same format as the first four columns and include lagged values for all the economic variables (South Dakota personal income, farm earnings, nonfarm earnings, and U.S. income).

Table 3 shows the results for the first model – using ordinary least squares for only incumbent candidates. What is immediately noticeable is the insignificance of farm earnings across all eight regressions. The values for the coefficients for farm earnings are close to zero and insignificant, which is an indicator that the condition of the state's agriculture industry may not be used by voters as a measure of an incumbent's performance. In fact, testing the

Table 3. OLS Estimations, using Only Incumbent Candidates' Vote Share as Dependent Variable.

	(1) All Observations	(2) Premier Races Only	(3) Two-Party Vote	(4) Premier, Two-Party	(5) All Observations	(6) Premier Races Only	(7) Two-Party Vote	(8) Premier, Two-Party
SD Income	-0.0538 [*] (0.0209)	-0.00940 (0.0268)	-0.0782 ^{**} (0.0286)	-0.00862 (0.0441)	-0.221 ^{***} (0.0238)	-0.0866 ^{**} (0.0302)	-0.217 ^{***} (0.0331)	-0.0216 (0.0504)
Farm Earnings	-0.0000724 (0.000381)	0.0000109 (0.000587)	-0.00000252 (0.000469)	0.000131 (0.000844)	-0.0000195 (0.000399)	-0.0000763 (0.000609)	0.0000187 (0.000502)	-0.0000717 (0.000888)
Nonfarm Earnings	-0.166 ^{***} (0.0445)	0.0173 (0.0570)	-0.0784 (0.0589)	0.251 ^{**} (0.0925)	0.0548 (0.0526)	0.110 (0.0674)	0.120 (0.0703)	0.248 [*] (0.108)
US Income	1.615 ^{***} (0.0845)	0.379 ^{***} (0.104)	3.860 ^{***} (0.110)	3.393 ^{***} (0.171)	-0.760 ^{***} (0.195)	0.0905 (0.208)	1.740 ^{***} (0.278)	3.618 ^{***} (0.358)
Republican	24.15 ^{***} (0.559)	20.18 ^{***} (0.701)	7.843 ^{***} (0.634)	-4.694 ^{***} (0.967)	30.77 ^{***} (0.634)	23.30 ^{***} (0.759)	11.48 ^{***} (0.732)	-3.133 ^{***} (1.065)
Democrat	14.03 ^{***} (0.565)	25.20 ^{***} (0.706)			18.54 ^{***} (0.645)	27.18 ^{***} (0.767)		
Time Trend	-0.714 ^{***} (0.0618)	-0.194 [*] (0.0808)	-0.137 (0.0782)	0.871 ^{***} (0.124)	0.378 ^{***} (0.0980)	0.0976 (0.110)	0.961 ^{***} (0.143)	0.830 ^{***} (0.182)
Lag of SD Income					-0.156 ^{***} (0.0252)	-0.0417 (0.0291)	-0.175 ^{***} (0.0362)	-0.0192 (0.0482)
Lag of Farm Earnings					-0.0000107 (0.000343)	0.0000815 (0.000360)	-0.000107 (0.000525)	0.0000939 (0.000599)
Lag of Nonfarm Earnings					0.0363 (0.0572)	-0.00768 (0.0713)	0.117 (0.0788)	0.0850 (0.119)
Lag of US Income					1.339 ^{***} (0.139)	-0.119 (0.171)	1.302 ^{***} (0.196)	-0.432 (0.272)
N	12738	6534	9108	3894	10956	5874	7788	3498
Adjusted R ²	0.365	0.371	0.399	0.384	0.409	0.393	0.421	0.390

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

hypothesis that the coefficient for farm earnings equals zero against the alternative of it not equaling zero, the results show that we accept the null hypothesis.

Other state economic factors have some significance in the percentage of the vote received by incumbent candidates. For instance, South Dakota's personal income is significant in all the regressions involving all ten races, but not when looking at only the four premier races. In all cases, the coefficient is negative, but not large in magnitude. Because the expectation is that the coefficients should be positive, this may mean that state personal income is not a strong factor influencing the re-election of incumbents. It is also contrary to the expectations of the clarity of responsibility argument because assigning responsibility for economic conditions to higher-level incumbents should be clearer than with lower-level incumbent officials. The expectations were that all economic conditions should have a greater influence on voting for the premier races. Nonfarm earnings are significant in the premier races when excluding third party candidates. As mentioned earlier, this is in accordance with expectations for economic conditions having a greater effect on the premier races and indicates that an increase in nonfarm earnings has a small positive influence on the vote share of incumbents in the state's premier races.

The coefficient for U.S. income is positive and significant across almost all the regressions in Table 3. The magnitudes of the coefficients are the largest of all the economic variables included, and are much larger when looking at the

two-party vote. Because state officials, especially those incumbents in the non-premier positions, have very little influence on national economic conditions, this is likely a sign of voters identifying incumbent candidates with their national political parties. This association is beneficial to state incumbents when their party presides over national prosperity, and vice versa when the national economy is performing poorly. This relationship is shown through the positive sign of the coefficients for U.S. income. Although it is fairly clear that local officials do not have much control over the nation's economy, this measure is clearly still relevant in determining voters' mindsets in the state's elections.

The most consistently significant variables in the first model, however, are the variables indicating political party. This is to be expected, especially for the Republican dummy variable since South Dakota traditionally votes Republican. What is interesting, though, is that the magnitude of the coefficient on the Republican dummy decreases when looking at the two-party vote share and the premier races. This indicates that, as mentioned in the background of South Dakota politics, that voters do not always vote strictly based on party lines. In fact, these results show that Democratic incumbents have a greater chance of being re-elected than Republican candidates in the state's premier races. This can be seen in columns (2) and (6) where the coefficient for the Democratic dummy variable is larger than that of for the Republican dummy variable. This also holds true when examining the results in columns (4) and (8), where the coefficient for the Republican dummy is negative and statistically significant.

The second model's results are shown in Table 4. This model is now taking into account all candidates for statewide office, not just races with incumbents. The expectations for the second model differ from the first in that economic factors should not have as big an influence. This is because most of the candidates are not incumbents, meaning it should be more difficult for voters to assign responsibility to candidates for the economic conditions of the state and nation. In this model, political affiliations should have a greater influence than economic factors because new candidates cannot be evaluated by their personal influence on economic conditions. Rather, their party's influence on these conditions is likely more important when it comes to economic voting.

Once again, the variable of interest, farm earnings, is insignificant across all regressions. The other state economic variables, personal income and nonfarm earnings, are significant in some of the regressions. Differing slightly from the first model, the coefficient for nonfarm earnings is positive when statistically significant. This is consistent with expectations because a positive change in nonfarm earnings from year to year should positively influence candidates' vote share. However, this is more difficult to interpret in the context of economic voting than in the first model because these results are for all candidates, not just incumbents. The coefficient for personal income continues to differ from expectations, with both negative and positive statistically significant coefficients in this model. Like nonfarm earnings, a positive change in personal income should positively influence candidates, especially those of the party in power. On the national level, U.S. income is significant in all regressions. There

Table 4. OLS Estimations, using All Candidates' Vote Share as Dependent Variable.

	(1) All Observations	(2) Premier Races Only	(3) Two-Party Vote	(4) Premier, Two-Party	(5) All Observations	(6) Premier Races Only	(7) Two-Party Vote	(8) Premier, Two-Party
SD Income	-0.0490 ^{***} (0.0101)	0.0125 ^{***} (0.0127)	-0.0756 ^{***} (0.0159)	0.0195 ^{***} (0.0234)	-0.0310 ^{***} (0.0111)	0.0537 ^{***} (0.0140)	0.116 ^{***} (0.0160)	0.219 ^{***} (0.0240)
Farm Earnings	0.000217 (0.000183)	0.000330 (0.000278)	0.000228 (0.000261)	0.000399 (0.000449)	0.0000580 (0.000186)	-0.0000210 (0.000281)	0.0000533 (0.000242)	-0.0000723 (0.000423)
Nonfarm Earnings	0.0225 (0.0215)	0.0568 ^{***} (0.0270)	0.364 ^{***} (0.0328)	0.343 ^{***} (0.0492)	0.00404 (0.0246)	-0.00560 (0.0311)	0.0968 ^{***} (0.0339)	0.0741 (0.0517)
US Income	-0.0948 ^{***} (0.0413)	-0.223 ^{***} (0.0496)	3.666 ^{***} (0.0663)	3.205 ^{***} (0.0964)	0.227 ^{***} (0.0910)	0.441 ^{***} (0.0961)	5.114 ^{***} (0.135)	4.619 ^{***} (0.174)
Incumbent	19.32 ^{***} (0.289)	19.63 ^{***} (0.377)	18.66 ^{***} (0.394)	21.42 ^{***} (0.545)	20.45 ^{***} (0.302)	20.90 ^{***} (0.390)	20.53 ^{***} (0.368)	22.22 ^{***} (0.520)
Republican	46.36 ^{***} (0.289)	42.77 ^{***} (0.354)	12.28 ^{***} (0.355)	9.472 ^{***} (0.517)	44.80 ^{***} (0.327)	41.15 ^{***} (0.379)	10.17 ^{***} (0.356)	6.998 ^{***} (0.509)
Democrat	37.14 ^{***} (0.283)	36.61 ^{***} (0.374)			35.40 ^{***} (0.318)	35.78 ^{***} (0.397)		
Time Trend	0.508 ^{***} (0.0301)	0.482 ^{***} (0.0384)	2.446 ^{***} (0.0437)	2.403 ^{***} (0.0662)	0.413 ^{***} (0.0458)	0.305 ^{***} (0.0508)	1.250 ^{***} (0.0688)	1.452 ^{***} (0.0868)
Lag of SD Income					-0.0565 ^{***} (0.0118)	-0.0132 (0.0134)	0.0368 ^{***} (0.0175)	0.0388 (0.0230)
Lag of Farm Earnings					-0.000106 (0.000160)	-0.000128 (0.000166)	-0.000216 (0.000253)	-0.000207 (0.000285)
Lag of Nonfarm Earnings					-0.0165 (0.0267)	0.00895 (0.0329)	0.0858 ^{***} (0.0380)	0.116 ^{***} (0.0569)
Lag of US Income					-0.105 (0.0653)	-0.610 ^{***} (0.0788)	-0.773 ^{***} (0.0944)	-0.901 ^{***} (0.130)
N	12738	6534	9108	3894	10956	5874	7788	3498
Adjusted R ²	0.922	0.921	0.901	0.902	0.923	0.923	0.919	0.917

Standard errors in parentheses
^{*} p < 0.05, ^{**} p < 0.01, ^{***} p < 0.001

is a more pronounced difference in magnitude between the results using all parties and those with only the two major parties, meaning this variable may have a greater influence on candidates of the two major political parties. Because this model is using all candidates, not just incumbents, this signals that voters understand that the two major parties have a greater influence on the national economy than any third parties.

Like the first model, the most meaningful results in this model are those of the party identifiers. They continue to be significant in all regressions, with the Republican Party's coefficients decreasing in magnitude in the premier races. What differs from this first model, which only encompassed incumbent candidates, is that the coefficients for the Republican Party dummy are greater than those of the Democratic Party in all cases. This implies that, in an open race, Republican candidates have the advantage over Democrats, regardless of whether it is a premier race or not. Because of South Dakota's historic support of Republican candidates for state officials, these results are consistent with expectations. However, the decreasing magnitude of the coefficient for Republicans in the premier races shows that these are the races in which Democrats have greater chances of winning. More results worth mentioning are those of the newly added incumbent variable. This is a dummy variable indicating whether a candidate is an incumbent or not. As expected, these results are positive and highly significant in every case. As previous research discerned, incumbents usually have "well-known advantages," which is consistent with the results here from South Dakota.

The third model differs significantly from the first two in its estimation method, using probit instead of ordinary least squares because the dependent variable (whether a candidate won the election or not) is binary. Therefore, the results must be interpreted differently. The results from the third model are shown as the marginal effects of each variable on the probability of a candidate being elected in Table 5. The marginal effects here are the expected change in the probability of a candidate being elected given a change in one of the independent variables. In keeping with the other models, farm earnings continue to be insignificant. South Dakota's personal income has decreased in significance compared to the other models in that only three of the eight regressions show any significance. These results indicate that the local economy does not have a significant effect on the probability of whether a candidate is actually elected to office. Nonfarm earnings are sporadically significant again and have a small negative marginal effect on the probability of a candidate being elected.

The results for U.S. income contrast from the previous models in that it has a negative marginal effect on candidates' elections in all regressions. This is indicating that an increase in the nation's income decreases a candidate's probability of being elected in South Dakota. A possible explanation for this is that South Dakota's economy does not usually follow the nation's economy as closely as other states. The state's economy is usually fairly steady compared to the ups and downs of the national economy. Another explanation could be that

Table 5. Probit Marginal Effects Estimations, using a Binary Variable of whether a Candidate Won as Dependent Variable.

	(1) All Observations	(2) Premier Races Only	(3) Two-Party Vote	(4) Premier, Two-Party	(5) All Observations	(6) Premier Races Only	(7) Two-Party Vote	(8) Premier, Two-Party
SD Income	-0.000482 (0.00126)	0.00153 (0.00192)	-0.00157 (0.00133)	-0.000103 (0.00202)	-0.00919*** (0.00145)	-0.00698** (0.00221)	-0.00374* (0.00147)	-0.00216 (0.00224)
Farm Earnings	0.0000114 (0.0000220)	-0.00000559 (0.0000377)	0.00000997 (0.0000223)	0.00000717 (0.0000382)	0.00000748 (0.0000220)	0.000000148 (0.0000383)	0.00000440 (0.0000223)	-0.00000403 (0.0000387)
Nonfarm Earnings	-0.0159*** (0.00272)	-0.0180*** (0.00421)	-0.00783** (0.00279)	-0.00930* (0.00438)	-0.00690* (0.00312)	-0.00909 (0.00487)	-0.00456 (0.00317)	-0.00668 (0.00497)
US Income	-0.245*** (0.00640)	-0.274*** (0.00995)	-0.152*** (0.00579)	-0.163*** (0.00922)	-0.318*** (0.0142)	-0.318*** (0.0179)	-0.146*** (0.0127)	-0.154*** (0.0167)
Incumbent	1.813*** (0.0352)	2.006*** (0.0555)	1.663*** (0.0354)	1.808*** (0.0541)	1.696*** (0.0355)	1.818*** (0.0556)	1.619*** (0.0354)	1.725*** (0.0544)
Republican	1.744*** (0.0435)	1.985*** (0.0682)	0.959*** (0.0301)	1.067*** (0.0499)	1.939*** (0.0595)	2.169*** (0.0871)	0.819*** (0.0329)	1.014*** (0.0527)
Democrat	0.685*** (0.0434)	0.763*** (0.0738)			1.060*** (0.0594)	1.072*** (0.0919)		
Time Trend	-0.0598*** (0.00395)	-0.0848*** (0.00620)	-0.0136*** (0.00370)	-0.0355*** (0.00595)	-0.0212*** (0.00611)	-0.0537*** (0.00828)	-0.000374 (0.00642)	-0.0240** (0.00826)
Lag of SD Income					-0.00711*** (0.00156)	-0.00336 (0.00209)	-0.00366* (0.00160)	-0.00184 (0.00214)
Lag of Farm Earnings					-0.00000159 (0.0000219)	-0.000000559 (0.0000259)	-0.00000407 (0.0000227)	-0.00000827 (0.0000263)
Lag of Nonfarm Earnings					-0.00927** (0.00348)	-0.00759 (0.00534)	-0.00604 (0.00355)	-0.00389 (0.00546)
Lag of US Income					0.0349*** (0.00854)	0.0128 (0.0119)	0.00736 (0.00880)	-0.00408 (0.0122)
N	12738	6534	9108	3894	10956	5874	7788	3498

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

national politics were largely dominated by Democrats throughout the 1990s and the late 2000s, the majority of the years this study encompasses. This may be showing that South Dakota voters tend to vote Republican despite another party's successes or failures with the national economy. Therefore the national economy likely has very little to do with who wins state elections.

Remaining consistent with the other models, major political parties clearly have an impact on the election of candidates. Being a Republican candidate has a very big influence on the probability of being elected, as is shown by the very high marginal effects of being a Republican as opposed to any other party. The marginal effects for Democratic candidates are also significant, but not as large in magnitude as those of Republican candidates. Although, in keeping with other results, the magnitude of the marginal effects for Republican candidates decreases when looking at only premier races. The marginal effects for incumbent candidates are also highly significant and large in magnitude, as is consistent with the second model.

CHAPTER VI

CONCLUSION

This study confirms the notion that South Dakota has a complex political culture. The results from this study indicate that South Dakota's voters seem unlikely to take into account the condition of the state's agriculture industry (as measured by farm earnings) when determining who to vote for, regardless of which race is being considered. Because the data here is only from 1990 forward, these results are in keeping with the hypothesis that agriculture's impact on elections has decreased over time. However, by only using farm earnings, this study may not take into account the economic impact of agriculture or the farming culture that the state has traditionally had. A more comprehensive study of the candidates involved and specific local and national farm policies is needed in order to examine more specific impact of the agriculture industry on particular elections. Data for these measures are more difficult to quantify, however, so the use of farm earnings is a reasonable starting point for studies on this topic. It may also be worth comparing elections earlier in history with these more recent elections to determine if there has been a change in the importance of agriculture on election results. This study's results do keep with previous literature in that economic voting is conditional upon the characteristics of each election's situation.

When it comes to the effects of candidate-specific variables, such as political party and incumbency, the results of this study are clearer. Belonging to a major political party is a clear advantage in South Dakota elections. This is especially apparent when looking at the smaller state office races (Secretary of State, Attorney General, State Auditor, State Treasurer, Commissioner of Public Schools, and Public Utilities Commissioner). In these cases, it is apparent that South Dakotans usually vote the party lines, with Republican candidates having a clear advantage in the results of all three models. This advantage appears to dissipate when looking only at the state's premier races. Any advantage Republican candidates enjoy in the smaller races decrease, and, in the cases of incumbent candidates, may even disappear altogether. This may indicate incumbents of other parties' ability to create a more widely recognized public image than the candidates in smaller races. It may also be an indication of the conflict mentioned earlier between the agrarian and conservative aspects of the state's political culture. However, any strong conclusions about this matter cannot be made based on the results shown here.

Overall, this study confirms the complexity of South Dakota's political atmosphere and its wide range of influences. There is a clear difference in the factors that influence the small versus premier statewide races, although farm earnings do not appear to impact any of these election results. Further research into more specific races, candidates, periods in time, and political influences

should be done in order to uncover more definitive conclusions about what aspects South Dakota voters take into account when casting their ballots.

REFERENCES

- Anderson, C. D. (2006). Economic voting and multilevel governance: A comparative individual-level analysis. *American Journal of Political Science*, 50(2), 449-463.
- Cohen, M. (2012, August 24). [Web log message]. Retrieved from <http://fivethirtyeight.blogs.nytimes.com/2012/08/24/in-south-dakota-only-the-farm-trumps-conservatism/>
- Ebeid, M., & Rodden, J. (2006). Economic geography and economic voting: Evidence from the us states. *British Journal of Political Science*, 36(3), 527-547.
- Hogan, E., Lauck, J., & Miller, J.E. (2004). The countours of South Dakota political culture. *South Dakota History*, 34(2), 157-178.
- Jones, J. M. (2012). More states move to GOP in 2011. *Gallup*, Retrieved from <http://www.gallup.com/poll/152438/states-move-gop-2011.aspx>
- Kenney, P. (1983). The effect of state economic conditions on the vote for governor. *Social Science Quarterly*, 64(1), 154-162.
- Lynch, P. (1999). Presidential elections and the economy 1872 to 1996: The times they are a 'changin or the song remains the same. *Political Research Quarterly*, 52(4), 825-845.

- Peltzman, S. (1987). Economic conditions and gubernatorial elections. *The American Economic Review*, 77(2), 293-297.
- Powell Jr., G., & Whitten, G. (1993). A cross-national analysis of economic voting: Taking account of political context. *American Journal of Political Science*, 37(2), 391-414.
- South Dakota Department of Agriculture, (2010). *South Dakota Agriculture - Facts & Impact*. Retrieved from website: <http://sdda.sd.gov/education-outreach/agriculture-industry/>
- South Dakota Governor's Office of Economic Development, South Dakota Ready to Work. (2012). *2011 South Dakota profile*. Retrieved from website: <http://www.sdreadytowork.com/media/docs/Misc/2011SD>
- South Dakota Secretary of State, (1990-2010). *General Election Results: Statewide Candidates by County*. Retrieved from website: <http://sdsos.gov/content/viewcontent.aspx?>
- U.S. Bureau of Economic Analysis, "Personal income by major source and earnings by NAICS industry 1," estimates from 2001 – 2010, Retrieved from website: www.bea.gov
- U.S. Bureau of Economic Analysis, "Personal income by major source and earnings by SIC industry 1," estimates from 1989 – 2000, Retrieved from website: www.bea.gov
- U.S. Bureau of Labor Statistics. *Current Employment Statistics Survey: Employment and Earnings*. 1999-2009. Web.

U.S. Department of Agriculture, National Agricultural Statistics Service. (2009).

2007 Census of Agriculture (AC-07-A-51). Retrieved from website:

http://www.agcensus.usda.gov/Publications/2007/Full_Report/usv1.pdf