

Why Do Members of Congress Support Agricultural Protection?

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Introduction

- ▶ Most developed countries subsidize agriculture heavily, even though their agricultural sectors have steadily declined in relative importance since the 1950s.
- ▶ In developing countries, by contrast, the agricultural sector often remains much more important, but governments tend to tax farmers and subsidize food consumers.
- ▶ Scholars have termed this the “developmental paradox” (Lindert, 1991; Barrett, 1999).

Introduction

- ▶ But why should countries be more likely to protect agriculture as their GDP per capita increases (Anderson and Hayami, 1986; World Bank, 1986)?
- ▶ In developing countries, it is often the case that urban elites pressure governments to subsidize food consumption, often via the threat of social unrest (Lipton, 1977; Bates, 1981; Bellemare, 2014).
- ▶ In developed countries, however, scholars have struggled to come to a consensus about why agricultural policy is tilted toward agricultural producers.

Introduction

Four explanations for agricultural protection have so far been suggested (de Gorter and Swinnen, 2002):

1. *Legislator Preferences*: Lawmakers vote according to their personal policy preferences.
2. *Electoral Incentives*: Voters prefer agricultural protection, and re-election-oriented policy makers follow their lead (Downs, 1957; Coughlin, 1992).
3. *Lobbying*: Interest groups representing agricultural producers lobby policy makers and contribute to the re-election campaigns of those who support agriculture (Olson, 1971; Becker, 1983).
4. *Institutions*: A country's political institutions encourage agricultural protection.

Introduction

- ▶ Scholars have found evidence to support most of these explanations: electoral incentives, lobbying, and institutions all seem to contribute to policy outcomes on agricultural issues.
- ▶ No one, however, has focused on preferences of lawmakers, as distinct from their ideology (i.e., Democrat or Republican).
- ▶ Moreover, previous research has typically focused on just one these factors at a time. Also, most have focused on aggregate-level measures: although each hypothesis is premised on micro-level theories about how politicians make decisions, scholars have seldom tested these theories with data on how individual politicians make decisions about agricultural policy.

Introduction

- ▶ In this paper, we explore how (i) preferences, (ii) electoral incentives, and (iii) lobbying can influence legislative action on agricultural policy in the United States Congress.
- ▶ We focus on the 106th through 110th Congresses (1999-2009), the period in US agricultural history during which lawmakers passed two of the most significant farm bills in the last few decades: the 2002 Farm Security and Rural Investment Act and the 2008 Food, Conservation, and Energy Act.
- ▶ Using data on how individual members voted on these farm bills and how they were rated by the Farm Bureau, we simultaneously test the micro-level underpinnings of several explanations for agricultural protection.

Introduction

- ▶ We analyze three sets of outcomes:
 1. The scores legislators receive from the Farm Bureau
 2. How legislators voted on the 2002 farm bill, and
 3. How legislators voted on the 2008 farm bill.

- ▶ We focus on three variables of interest:
 1. The proportion of a legislator's career spent working as a farm owner, which we use as a proxy for a legislator's *preference* for supporting agriculture,
 2. The proportion of a legislator's constituents who are themselves farmers, which we use to measure *electoral incentives*, and
 3. The amount of money a legislator received from agricultural political action committees (PACs), which we use to measure *lobbying*.

Introduction

- ▶ Popular opinion, pundits, and conventional wisdom often blame lobbying for policies that protect agriculture.
- ▶ In contrast, our results suggest that electoral incentives are what primarily drives legislative action on agricultural policy.
- ▶ We also find that lobbying and legislators' own preferences seem to matter, but to a much lesser extent.
- ▶ Lastly, we find that a legislator's preferences and electoral incentives appear to be substitutes for one another.

Estimation Strategy

We estimate the following equation:

$$y_{ijt} = \alpha + \beta_p p_{ijt} + \beta_e e_{ijt} + \beta_\ell \ell_{ijt} + \gamma x_{ijt} + \delta_s d_s + \delta_j d_j + \delta_t d_t + \epsilon_{ihvd}, \text{ where} \quad (1)$$

- ▶ $y = 1$ if member of Congress i in state j in Congress t voted “Yea” on a farm bill, = 0 otherwise;
- ▶ p is the % of a lawmaker’s career spent working as a farmer;
- ▶ e is the % of a lawmaker’s voters who are farmers;
- ▶ ℓ is the amount of money received by the lawmaker from agricultural PACs;
- ▶ δ are vectors of chamber, state, and Congress fixed effects;
- ▶ x is a vector of controls; and
- ▶ ϵ is an error term with mean zero.

Estimation Strategy

- ▶ As discussed, we look at how lawmakers voted on the 2002 and 2008 farm bills.
- ▶ We also look at whether they are classified as friends of the Farm Bureau and at the score assigned to them by the Farm Bureau, which measures how pro-agricultural protection they are.
- ▶ We estimate equation 1 by ordinary least squares. Because all but one of our dependent variables are binary, that means that we estimate linear probability models (LPMs) for most of our outcomes. We do so for a variety of technical reasons in addition to the cleaner identification allowed by the LPM (Angrist and Pischke, 2009).

Estimation Strategy

- ▶ One important limitation of our work is that on each of the five farm bill votes we examine, some legislators simply do not cast votes.
- ▶ As a result, many do not have Farm Bureau scores.
- ▶ Although there is a burgeoning area of research devoted to dealing with abstention from roll call votes (Rosas et al., 2012), the methods developed require data which we simply do not have.
- ▶ We thus assume that in this context, votes are missing at random, but that is a clear limitation of our approach.

Identification Strategy

Recall that in any application relying on observational data, there are three sources of statistical endogeneity, which can threaten the causal identification of a parameter of interest:

1. Reverse causality or simultaneity,
2. Omitted variables or unobserved heterogeneity, and
3. Measurement error.

Here, we cannot claim to have causally identified parameters. What we are after instead is to run a horserace between competing theories, which we do by looking at associations between our explanatory variables and the dependent variable.

Identification Strategy

Still, this paper is not completely devoid of identification. For starters, we have a relatively rich set of controls. For each congressional district, we have the poverty rate, the median income, whether the lawmaker is a member of his chamber's agricultural committee, whether he is a Republican, the proportion of Republican constituents in his district, whether the lawmaker is a woman, the lawmaker's age, and whether the lawmaker is a Senator.

Moreover, we use state fixed effects everywhere, and we use Congress fixed effects for those two dependent variables for which we pool all Congresses together (i.e., Farm Bureau score, friend of the Farm Bureau indicator).

Data

We use the Congressional Leadership and Social Status (CLASS) dataset (Carnes, 2011), the only existing database that contains detailed information about the professional backgrounds of a large sample of American legislators.

The CLASS dataset covers the years 1999 to 2009, or the 106th to the 110th Congresses, and it includes all of the data we need for this paper, save for PAC contributions.

The PAC contributions come from the Federal Elections Commission online database.

Estimation Results

We present three sets of results. First, we look at one dependent variable (i.e., whether one is a friend of the Farm Bureau), testing each hypothesis independently, and then simultaneously.

Second, we look at all dependent variables (five farm bill votes, and two Farm Bureau indicators), testing all three of our hypotheses in each case.

Lastly, we look at all dependent variables again, testing all three of our hypotheses and their interactions in each case, in order to see whether mechanisms are substitutes or complements.

Table 2. Descriptive Statistics

Variable	Mean	(Std. Dev.)	N
<i>Dependent Variables</i>			
Farm Bill 2002 Passage Vote (Indicator)	0.689	(0.463)	511
Farm Bill 2002 Conference Vote (Indicator)	0.662	(0.473)	518
Farm Bill 2008 Passage Vote (Indicator)	0.602	(0.490)	515
Farm Bill 2008 Conference Vote (Indicator)	0.767	(0.423)	520
Farm Bill 2008 Veto Vote (Indicator)	0.765	(0.424)	520
Farm Bureau Score	0.612	(0.269)	906
Friend of the Farm Bureau (Indicator)	0.483	(0.500)	2699
<i>Variables of Interest</i>			
Proportion of Career Spent in Agriculture	0.022	(0.091)	2715
Proportion of Agricultural Constituents	0.008	(0.011)	2715
Contributions from Agricultural PACs (\$1,000)	22.942	(33.590)	2715
<i>District Characteristics</i>			
Poverty Rate	0.123	(0.054)	2715
Median Income (\$1,000)	43.159	(10.301)	2715
Proportion of Republican Constituents	0.522	(0.079)	2680
<i>Legislator Characteristics</i>			
Republican (Indicator)	0.511	(0.500)	2714
Member of House Agricultural Committee (Indicator)	0.131	(0.337)	2676
Member of Senate Agricultural Committee (Indicator)	0.038	(0.190)	2715
Female (Indicator)	0.142	(0.349)	2715
Age (Years)	56.069	(10.050)	2715
106th Congress (Indicator)	0.200	(0.400)	2715
107th Congress (Indicator)	0.200	(0.400)	2715
108th Congress (Indicator)	0.199	(0.399)	2715
109th Congress (Indicator)	0.199	(0.399)	2715
110th Congress (Indicator)	0.202	(0.402)	2715

Table 3. OLS Estimation Results for Friends of the Farm Bureau

Variables	(1)	(2)	(3)	(4)
(Dependent Variable: = 1 if Friend of the Farm Bureau; = 0 Otherwise.)				
Proportion of Career in Agriculture	0.274*** (0.094)			0.149 (0.093)
Proportion of Farm Constituents		3.326*** (0.723)		2.487*** (0.753)
Log of Agricultural PAC Contributions			0.018*** (0.003)	0.016*** (0.003)
Poverty Rate in District	-0.764** (0.369)	-0.936** (0.376)	-0.723** (0.368)	-0.909** (0.367)
Median Income in District (\$1,000)	-0.006*** (0.002)	-0.006*** (0.002)	-0.006*** (0.002)	-0.006*** (0.002)
Member of House Agricultural Committee	0.129*** (0.033)	0.118*** (0.033)	0.126*** (0.033)	0.096*** (0.033)
Member of Senate Agricultural Committee	-0.030 (0.056)	-0.024 (0.056)	-0.053 (0.054)	-0.026 (0.055)
Republican	0.386*** (0.025)	0.389*** (0.025)	0.375*** (0.025)	0.374*** (0.025)
Proportion of Republican Constituents	-0.274 (0.179)	-0.149 (0.186)	-0.231 (0.178)	-0.120 (0.183)
Female	-0.007 (0.024)	-0.005 (0.024)	-0.012 (0.023)	-0.004 (0.023)
Age	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Senator	0.038 (0.024)	0.034 (0.024)	0.051** (0.024)	0.049** (0.024)
Constant	0.926*** (0.159)	0.648*** (0.179)	0.760*** (0.172)	0.672*** (0.174)
Observations	2,628	2,628	2,628	2,628
State Fixed Effects	Yes	Yes	Yes	Yes
Congress Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.387	0.389	0.395	0.398

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4. OLS Estimation Results for the 2002 and 2008 Farm Bills and for Farm Bureau Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2002 Farm Bill		2008 Farm Bill			Farm Bureau	
Variables	Pass	Conf.	Pass	Conf.	Veto	Score	Friend
Proportion of Career in Agriculture	-0.042	-0.217	0.081	0.200	0.348*	0.118	0.149
	(0.181)	(0.272)	(0.163)	(0.183)	(0.184)	(0.080)	(0.093)
Proportion of Farm Constituents	4.362*	2.811	1.660	3.961*	4.878**	1.854***	2.487***
	(2.305)	(3.284)	(1.020)	(2.213)	(2.456)	(0.571)	(0.753)
Log of Agricultural PAC Contributions	0.005	0.009	-0.008	-0.001	-0.006	0.008**	0.016***
	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.003)	(0.003)

Table 5. OLS Estimation Results for the 2002 and 2008 Farm Bills and for Farm Bureau Measures

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2002 Farm Bill		2008 Farm Bill			Farm Bureau	
	Pass	Conf.	Pass	Conf.	Veto	Score	Friend
Proportion of Career in Agriculture	1.005**	0.203	0.079	1.352***	1.432***	0.046	0.194
	(0.423)	(0.568)	(0.707)	(0.455)	(0.399)	(0.174)	(0.267)
Proportion of Farm Constituents	9.650***	11.679**	5.863*	13.147***	14.111***	2.293	3.116*
	(3.704)	(4.909)	(3.391)	(3.688)	(3.730)	(1.779)	(1.722)
Log of Agricultural PAC Contributions	0.007	0.014	-0.003	0.009	0.003	0.007*	0.017***
	(0.010)	(0.009)	(0.008)	(0.008)	(0.007)	(0.004)	(0.004)
Proportion of Career in Agriculture	-0.208**	-0.016	0.067	-0.152	-0.073	0.088	0.000
× Log of Agricultural PAC Contributions	(0.101)	(0.137)	(0.166)	(0.119)	(0.107)	(0.055)	(0.067)
Proportion of Career in Agriculture	-7.754**	-10.771**	-16.307	-31.903*	-48.222***	-14.385***	-1.674
× Proportion of Farm Constituents	(3.237)	(5.367)	(11.836)	(18.673)	(17.152)	(4.790)	(1.676)
Log of Agricultural PAC Contributions	-0.253	-0.969	-0.753	-1.637**	-1.404*	0.073	-0.041
× Proportion of Farm Constituents	(0.859)	(0.923)	(0.749)	(0.774)	(0.805)	(0.410)	(0.386)
Democrat in District	0.003	1.742**	0.003	1.004*	1.056**	0.067	0.004**
	(0.003)	(0.703)	(0.003)	(0.503)	(0.423)	(0.067)	(0.003)

Summary and Conclusions

- ▶ Starting from the observation that agricultural protection is an increasing function of GDP per capita, we have sought to answer the question “Why do members of Congress support agricultural protection?”
- ▶ To do so, we tested three hypotheses: (i) lawmaker preferences, (ii) electoral competition, and (iii) lobbying.
- ▶ The one hypothesis that almost always explains agricultural protection is electoral competition.

Summary and Conclusions

- ▶ Moreover, we find that a legislator's preferences for agricultural protection and the degree of electoral pressure he faces appear to be substitutes for one another.
- ▶ This isn't to say lobbying does not matter. It simply looks as though the marginal dollar of lobbying does not have a statistically significant impact on lawmaker behavior.
- ▶ Indeed, if lobbying did not matter, lobbies would most likely spend their money on other things.

Summary and Conclusions

- ▶ Our findings, however, suffer from a few important limitations. First, is our inability to make causal statements.
- ▶ Second, much of the action on any given farm bill occurs at the committee level, i.e., well before the vast majority of legislators cast a vote, and we do not observe what goes on at that level.
- ▶ An obvious direction for future research is to test each one of our hypotheses with the aim of making a causal statement, with the ultimate goal of improving agricultural policy making.

Appendix 1: LPM over Probit or Logit

In our application, the LPM is superior to probit or logit for a few important reasons. First, it prevents identification off of a functional form.

Second, it obviates the incidental parameter problem we would have to deal with given all of our fixed effects (Heckman, 1981).

Third, it allows interpreting coefficients directly as marginal effects.

Appendix 1: LPM over Probit or Logit

That said, the LPM does have its drawbacks. Its error term is heteroskedastic, but our use of robust standard errors allows controlling for general forms of heteroskedasticity.

Second, it is true that the LPM can lead to predicted probabilities outside of the $[0,1]$ interval, but here, we are not interested in forecasting—only in testing hypotheses about the explanatory variables.

Still, having estimated all three, it is generally the case that LPM estimates are a happy medium between probit and logit estimates.

Table 1. Findings in the Literature on the Political Economy of Agricultural Protection

Reference	Preferences of Politicians	Electoral Incentives	Lobbying	Notes
Alvarez (2005)			“Inconclusive evidence of correlation between money and favorable legislative behavior.”	No data analysis. Primarily a literature review. Also discusses the economic importance of the sector but does not directly discuss how this could affect voting behavior.
Abler (1991)	Campaign contributions are used to help elect people who are predisposed to support sugar and dairy programs.		Campaign contributions are used to help elect people predisposed to support sugar and dairy programs.	
Brooks, Cameron, Carter (1998)			Evidence that pro- and anti- sugar interests have been able to “buy” favorable votes.	
Lopez (2001)			Political contributions influence agricultural subsidies.	
de Gorter and Swinnen (2002)		Tendency for support to agriculture to decrease with the proportion of the population in agriculture.		Cross-country study.
Gawande and Hoekman (2006)			“Interest- group money bends agricultural policy in the United States.”	
Klomp and de Haan (2013)		Public agricultural spending increases under the influence of upcoming elections.		Cross-country analysis
Swinnen (2010)			Discusses literature that addresses	Literature review of food policies.

			lobbying.	
Mitra, Thomakos, and Ulubasoglu (2006)			This paper “estimates of the government’s weight on welfare relative to contributions and the proportion of the population that is politically organized.”	Uses data from US and Turkey to test the Grossman-Helpman model
Thies and Porche (2007)		“In federal systems where the upper house has a territorial constituency, the marginal effect on producer support is negative.”		This paper “analyze[s] the political economy of agricultural producer support in the OECD countries.”
Vesenka (1989)	“A senator’s personal ideological convictions is significant in explaining and predicting votes of US Senators.”		“Contributions from agricultural political action committees are insignificant in explaining and predicting the US Senate’s votes on eight 1981 and six 1985 Farm Bill amendments.”	
Swinnen and de Gorter (1993)		“Our model reconciles the apparent contradiction between models of self-interested politicians and of governments motivated by social concerns.”		