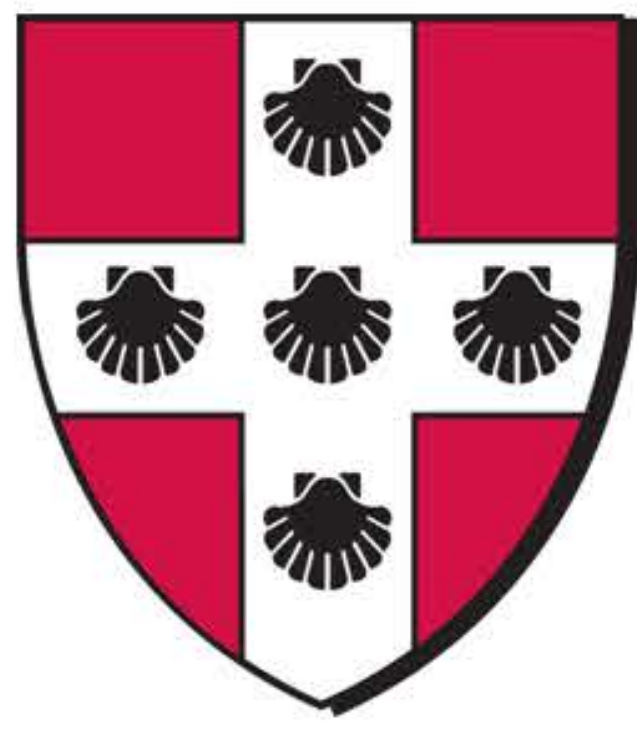# Global Governance: An Analysis of Codex Alimentarius Attendance

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Introduction

What drives countries with different types of governments, a range of levels of economic development, and various degrees of internal stability to attend a single annual meeting conducted by an international organization?

A surprisingly small amount of research has been done in the fields of global governance, and attendance by states in international organization. Guzman and Simmons (2005) examine the level of participation by developing countries in the WTO dispute process. Their model attempts to explain why some states are more likely to be involved in a WTO case than others by using proxy variables for power and capacity. In this project, we use a similar approach as Guzman and Simmons' and attempt to identify the factors at play when a state decides to either attend, or not attend, a meeting of an international organization. We hypothesized that variables correlated with a state's interest that fall under the domain of the international organization will have the largest impact on attendance, followed closely by variables dealing with power, and internal stability. We employed logit analysis, proxy variables for states' interests, power, and internal stability, as well as, the attendance data of states in the annual meetings of the Codex Alimentarius commission from the year 1987 until 2009 to model for our hypotheses. Codex Alimentarius is an international organization that deals with international standards on food safety and food production.

Data

The information regarding a country's attendance was derived by analyzing the Codex meeting reports. The variables, such as food exports, GDP, and government expenditure were acquired from the World Bank database. The economic variables are represented as percent of total GDP in constant 2008 U.S. dollars. The governance indicators were obtained from Freedom House, and World Bank and Polity. Finally, information on the development status of a country was attained from the U.N. database.

Number of Members vs. Number of Countries in Attendance
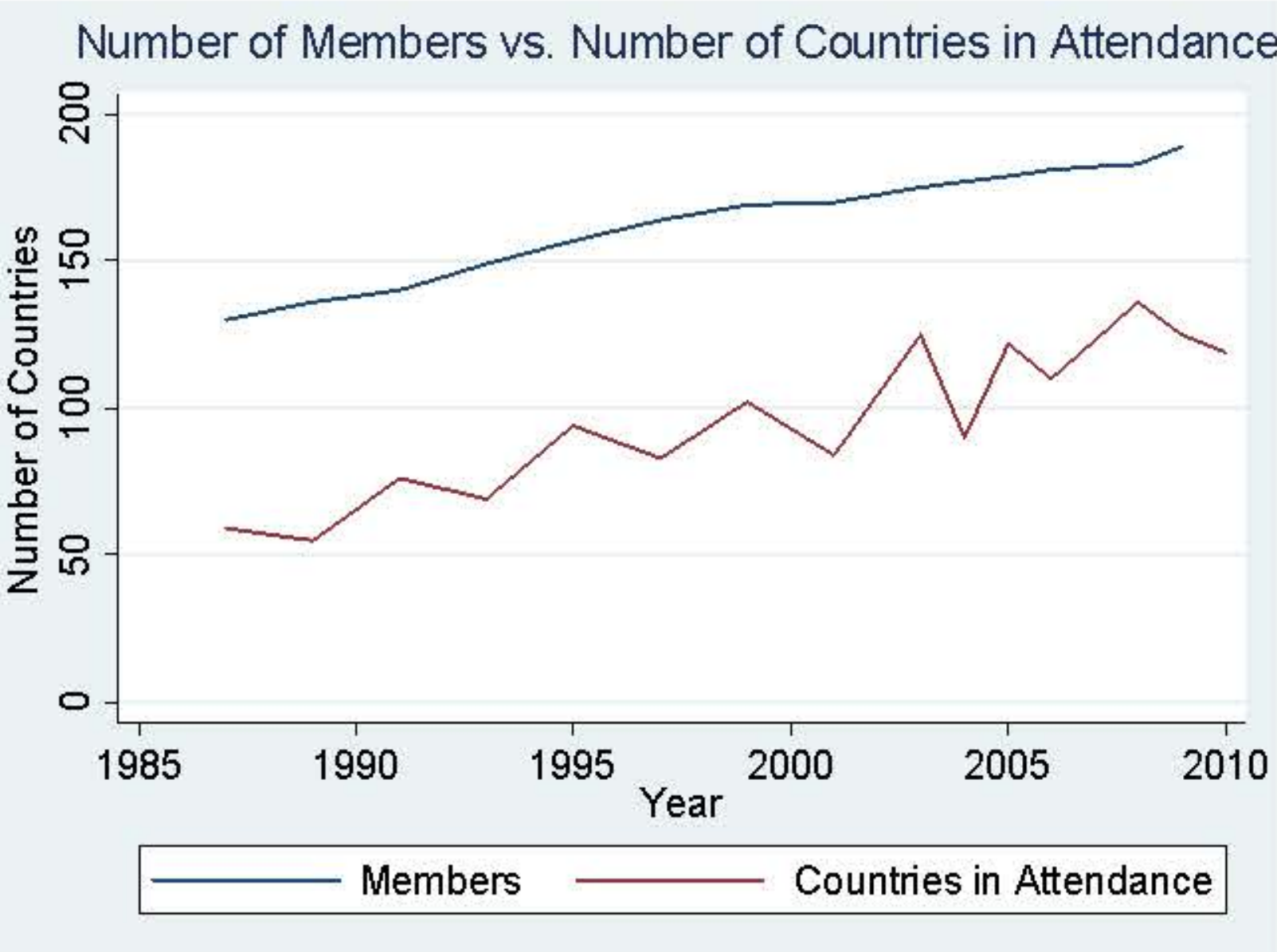
Methodology

Empirical Logistic Analysis

$$\ln\left[\frac{P(y=1)}{1-P(y=1)}\right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3(X_1 \bullet X_2) + \beta_4 X_3 + \beta_5 X_4 + \beta_6 X_5 + \beta_7 X_6$$

y	is attendance in a Codex meeting (dummy variable)
X_1	is the log of GDP
X_2	is government expenditure (percent of GDP)
X_3	is military expenditure (percent of GDP)
X_4	is transitional country (dummy variable)
X_5	is food exports (percent of GDP)
X_6	is trade (percent of GDP)

Results

Dependent variable: Codex Alimentarius Attendance			
Model	1A Coeff. S.E.	1B	1C
Log of GDP	1.222*** 0.113	1.256*** 0.134	1.379*** 0.135
Government Expenditure	0.053*** 0.020	0.055** 0.024	0.054** 0.023
Interaction Term (Log of GDP and military expenditure)	-0.065*** 0.020	-0.055** 0.025	-0.062** 0.025
Military Expenditure	1.344*** 0.444	1.137** 0.567	1.266** 0.567
Transition Country (Dummy)	-1.407*** 0.458	-1.354*** 0.508	-1.107*** 0.493
Food Exports		0.013** 0.006	0.014*** 0.006
Trade			0.006** 0.003
Polity Democracy Rating	0.068** 0.032		
Polity Executive Recruitment		0.242* 0.125	
Constant	-28.095*** 2.575	-29.377*** 3.154	-32.288*** 3.266
McFadden's Pseudo R²	0.152	0.140	0.146
Observations	1634	1349	1380

Significance can be determined by the asterisks. Significance at 90% is indicated by a "*", significance at 95% is indicated by "**", and significance at 99% is indicated by "***".

The proxies for capacity and power (log of GDP, government expenditure, and military expenditure) proved to have the largest effect on a country's attendance in Codex. This was followed by the proxies for internal stability (transition country, polity executive recruitment, and polity democracy rating), which also had a significantly large influence on attendance. Finally, the food related interest proxy variables (food exports and trade), while significant, had a relatively small effect on a state's attendance.

If we can utilize the "divide by 4 rule" we can further obtain support for the theory that capacity and power are more significant to attendance than food related proxy variables by attaining the upper bounds of the impact a unit change in an independent variable will produce. For example, a unit increase in food exports will produce no more than a 0.45% change in the probability of attending a meeting, and a unit change in military expenditure will produce no more than a 29.48% change in the probability of attending a meeting.

Results (Cont.)

Probability of Attendance vs. log of GDP

Probability of Attendance vs. Food Exports
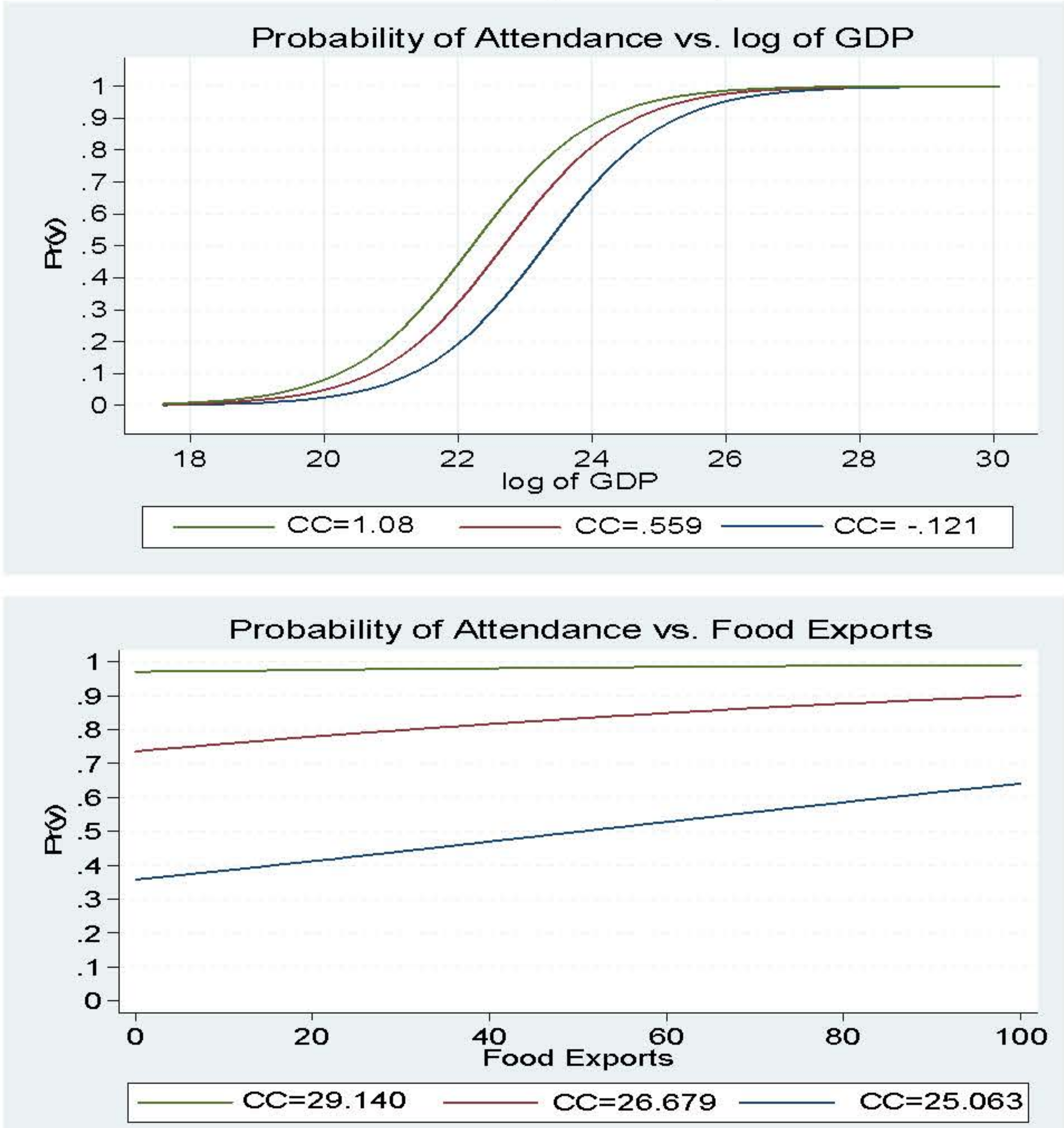
Conclusion and Future Research

Our results support the hypotheses that a country's power, political stability, and interests all have a significant effect on whether a country attends a meeting. However, the food related interests of the country play a substantially less significant role in the decision to attend than expected. A number of factors not included here in the interest of space, did not appear significant, including population size, gross percent of tertiary education, food imports, air transport capabilities, and CO_2 emissions, .

The results the logit model produced, while interesting, not the ultimate goal for our research topic. We have begun conducting preliminary Poisson analysis in order to analyze the variables that affect the number of representatives each country sent to a Codex meeting. Future research will primarily focus on developing a Poisson model, and comparing and contrasting the variables that affect general attendance, and the level of participation. Lastly, a major goal that we are working towards is creating a hierarchical model which will utilize region specific variables and analyze the effects a state's surroundings have on participation.

References

Abbott, Kenneth W., and Duncan Snidal. 1998. Why States Act through Formal International Organizations. The Journal of Conflict Resolution.

Davis, CL, and SB Bermeo. 2009. Who Files? Developing Country Participation in GATT/WTO Adjudication. The Journal of Politics.

Dunoff, J.L. 2007. Developing States and the WTO: What's Wrong with Inactivity? WTO Law and Developing Countries.

Guzman, Andrew, and Beth A. Simmons. 2005. Power Plays and Capacity Restraints: The Selection of Defendants in World Trade Organization Disputs. The Journal of Legal Studies.

Page, S. 2003. Developing Countries: Victims or Participants-Their Changing Role in International Negotiations. J Overseas Development Institute. http://www. odi.org.uk/iedg/publications/dev_countries_web. pdf.