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Delegate Voting at the 1787 Constitutional Convention:

The Entanglement of Economic Interests and the Great Compromise

How did the economic interests of the delegates to the 1787 Constitutional Convention impact delegate voting before and after the resolution of the Great Compromise? This research introduces the use of a delegate's deviation from his state's majority as the dependent variable in a model that divides the Convention into two periods around the Compromise. Covariates include several measures of a delegate's economic interest, proxies for his personal ideology, and controls for his place of origin. Results indicate that three economic interests (owning a greater number of slaves, a home county further from navigable water, and holding public securities) significantly impacted the likelihood of a delegate voting contrary to the majority position of his state in a way that was not the same before and after the Compromise. These results imply not only that personal economic interests were significant players during the creation of the U.S. Constitution, but that the structure of the legislative branch and these three economic interests go hand in hand.

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1 Introduction

The delegates to the Constitutional Convention, a room full of demi-gods, conspirers in a Devil's Bargain—all ascriptions given throughout the lifetime of the United States to a group of nothing more and nothing less than an assortment of humans charged with the impressive mission of creating the United States. The results of the debates of the 1787 Constitutional Convention continue to have critical significance on the lives of people within the United States and beyond; thus, studying these roots of our political system remains relevant when thinking critically about the current political reality. I contribute an empirical perspective to the litany of qualitative and quantitative literature on the topic of the Constitution by posing these questions: How might economic interests have affected delegates' voting behavior at the 1787 Constitutional Convention in Philadelphia? Are these interests reflected by a change in voting patterns after the Great Compromise? Might these interests have led delegates to deviate from their states' majority positions?

Charles Beard's 1913 work *An Economic Interpretation of the Constitution* introduced the notion that the Constitution is an economic document—that it can be viewed as a contention between the various economic interests of the Founders, instead of as an untarnished emblem of Enlightenment principles. While Beard's specific hypothesis has not withstood over a century of critical review, his idea of an "Economic Constitution" lives on. Empirical work testing a wide range of hypotheses regarding how economic and ideological interests may have informed voting at the Convention consistently suggests that delegate-specific economic characteristics were significant influencers of voting at the Convention, especially on issues related to those interests.

My research stands apart from the existing empirical literature on delegate voting by its unique combination of three specific components: a dependent variable that is free of researcher-imposed subjectivity, a model that encompasses, rather than bypasses, the temporal dimension of the

convention, and the utilization of a recently compiled dataset that is arguably the most comprehensive, yet still true to its primary source, as is feasible.

I use two datasets in this paper. Professor Keith Dougherty of the University of Georgia provided a full range of descriptive data for each of the fifty-five delegates to the Convention and for each of the twelve attending states (Rhode Island chose not to attend the Convention). I obtained a second dataset giving state votes and inferring delegate positions (“yea” or “nay”) on the 620 substantive roll calls throughout the Convention from the Constitutional Convention Research Group (CCRG). The positions of the individual men are crucial to understanding voting at the delegate level, but these positions are difficult or in some cases impossible to know; the delegates did not vote as individuals during the Convention. Instead, they each voted within their state’s delegation, and each state voiced its position to the general assembly. Official Convention records therefore list only the state votes, not those of the delegates. This fact required an extensive examination of primary source records by Dougherty et al (2012), who have produced the most exhaustive collection of the individual delegate positions currently feasible. These data are relatively new in the empirical literature on the Convention, and so advantage my analysis over earlier studies of the Convention.

It is on Dougherty’s compilation of individual delegate positions that I base the binary dependent variable of my logistic regression model—an indicator that equals one if a delegate deviates from his state’s majority on any particular vote, and zero if he votes with his state’s majority. Through a slight alteration to the theoretical model presented by McGuire (2003), the event of a delegate deviating from his state’s majority is a powerful indicator of a delegate’s personal interests in voting. McGuire’s model and my own cast a delegate’s voting as a function of two broad categories of interest: delegate-specific interests (such as the number of slaves owned by a delegate or his religion) and state-specific interests (such as state population and the number of slaves per

capita). To tailor McGuire's general model to the dependent variable here, I construe an increase in the likelihood of a delegate's deviating from his state's majority position to indicate an increase in the influence of some characteristic he does not necessarily share with his fellow state delegates. For the purposes of this paper, I am particularly focusing on the delegate-specific interests that are economic in nature.

No other author has directly measured a delegate's deviation from his state's majority as a metric of his personal interest. There are studies that use a small sample of votes, or that utilize spatial modeling techniques to discern similarity in voting between any of the delegates. Of these, the former is incapable of speaking to voting patterns of a Convention that continuously evolved over its four-month span, and the latter (a close cousin of my measure of a delegate's similarity to his fellows) is less equipped to test hypotheses on specific delegate characteristics. Other pooled regression models do reach across a wide range of votes by coding them as a one or a zero based on whether they are "pro-national" or not. However, this imposes an inherent subjectivity onto the data—it requires the researcher to make the content-based decision of how to label each vote according to a binary metric. My method can apply to almost¹ the full set of individual delegate positions—for a total of 4,870 observations—without bending any data away from the primary source.

The vote later deemed the "Great Compromise" constitutes the break around which I model a logistic regression of this binary measure of deviation. Prior to the Great Compromise, it was unknown whether legislative seats would be apportioned to each state evenly, or instead according to population. The decision that came with the 156th roll-call vote of the Convention—that there would be a Senate in which two senators represented each state, regardless of its size, and a House

¹ I cannot measure a delegate's deviation from his state's majority in the 118 cases in which the delegate's position is known, but the state vote is "divided" between yeas and nays. I correct for this in the model by controlling for whether a delegation is an even number in size, for this would directly speak to the likelihood of an even split of his delegation.

of Representatives with membership apportioned by the size of their state—imparted to each delegate at the Convention the knowledge of where in the legislative hierarchy he and his state would stand. As historical analyses on the intricacies of the Convention reveal, the issue of legislative apportionment was crucial in several other simultaneously occurring debates—most significantly, those regarding the commercial powers of the new government, how to address the admission of new states into the Union, and of course the ever-present (though sometimes not explicitly mentioned) debate over slavery (Collier et al (1986)). An extensive examination of these debates suggests the question underlying my empirical analysis: Before a delegate knows how much power his state will hold in the new federal government, how can he know what other constitutional arrangements will best benefit himself and his state?

I do not mean to imply that the only mover of a delegate's position during the Convention was a purely selfish or self-interested motive. However, scholarship consistently suggests that delegates' personal interests significantly influence their votes on issues related to those interests. This is the basis on which to imagine the Great Compromise as a key piece of information in the Convention, and one directly related to patterns in delegates' economic interests. I hypothesize that a delegate's likelihood to deviate from his state's majority changes with the Great Compromise. The direction I expect the change in voting patterns after the Great Compromise to take is ambiguous—whether a delegate's economic interests (or any specific interest) would be more or less impactful on his probability of deviation after the Compromise.

The covariates of this model fall into three categories: economic variables, noneconomic variables, and structural controls. The economic variables are those of analytic primary interest—delegate-specific indicators of wealth and economic standing include: the number of slaves a delegate owned, whether he owned public or private securities, whether he owned Western land, and the distance from the center of his home county to navigable water (a measure of his shipping and

commercial interest). The effects of these variables on a delegate's probability of deviating from his state's majority position are estimated in each of the two periods, to test the hypothesis that in each period their impact on a delegate's deviation from his state's majority differs. The noneconomic variables included in the regression are not modelled in two periods before and after the Compromise, as their purpose is to control for other individual characteristics that might have influenced a delegate's probability of deviating from his state's majority. These variables are: a delegate's age, his years of legislative, executive, and judicial experience, and dummy variables for English ancestry, holding an officer role in the Revolutionary War, and religion. Lastly, the structural controls account for the size of the delegation and also whether its size is an even number, as both could impact the likelihood of a delegate's deviation.

Results indicate that owning a greater number of slaves and origins in a county further from navigable water each increases the likelihood of a delegate voting contrary to the majority position of his state after (and only after) the Compromise. The model also shows that delegates who own public securities are more likely to deviate before (and only before) the Compromise. These results support the hypothesis concerning a difference between the two periods in how economic interests manifest themselves in delegate voting. Additionally, delegates who subscribe to a hierarchical religion (Catholic, Episcopalian) are significantly more likely to deviate from their state's majority throughout the entire Convention, as well as delegates who were former officers in the Revolutionary War.

An examination of the marginal effects of the economic characteristics, pre- and post-, reveals that these factors were not hugely significant movers of a delegate's actual probability of deviation in the context of this empirical model. However, the consistent nature of the significance still suggests an important impact of these variables. Countless forces laid their mark on these debates, and obscured instances of a delegate voting his true interests—biasing results against any results. The

fact that some variables nonetheless emerge as significant here is more meaningful in this context. The results of these empirical tests stand on the side of an economic interpretation of the Constitution, and also act illustratively to the specific story around the Great Compromise.

Section 2, 3, 4, and 5 summarize the historical, epistemological, empirical, and theoretical background on the Constitution, the Constitutional Convention, and my specific hypotheses, respectively. Section 6 describes the data, and in Section 7 I specify my model and empirical strategy. In Section 8, I present my results, and in Section 9, I discuss their implication. Section 10 concludes this research.

2 Historical Background on the Constitutional Convention

The Revolutionary War won from England the independence of thirteen sovereign states, not that of a single country. The union of the early 1780s resembled the modern United Nations more closely than our current United States in many ways: States issued their own currencies and could impose tariffs on one other, and the central body—a Confederation Congress which met to discuss issues common to all thirteen states—lacked both an executive branch and any means of enforcing its requisitions for taxes. Danger loomed from all sides: England and Spain presented continual threats to independence, and domestic economic difficulties verged into social crises, a phenomenon particularly apparent in the event of Shays Rebellion².

The political leaders of the day found the Articles of Confederation, which governed the states during the Revolutionary War and the years immediately following, deeply deficient for that precarious moment of history. The Annapolis Convention, attended by James Madison and

² Shays Rebellion took place in Massachusetts in the Spring of 1787, just before the Convention began. Men thrown into debtors' prison as victims of a highly volatile economic period took it upon themselves to fight back, led by Daniel Shays. Its significance here lies in how for many contemporaries Shays Rebellion was the tipping point towards belief in the necessity of a new system of government, as no federal force was able to stop the rebellion—it was the Massachusetts state militia that did (Collier).

Alexander Hamilton, among others, met in the Fall of 1786 to discuss a solution and resolved to call a general convention the following summer in Philadelphia for the sole purpose of proposing amendments to the Articles. Over the four-month convention, however, these delegates far overreached this directive and created an entirely new system of government, which endures to the present—the longest lasting Constitution in modern history.

The Convention met in secrecy, and from the first debate allowed for the reconsideration of any resolution at any point. Representing twelve states (Rhode Island chose not to attend), these fifty-five men held diverse political experience and opinions on human nature. However, they were uniform in the sense that each held a generally federalist (supportive of a strong central government, as opposed to advocating the prioritization of state sovereignty) attitude and a level of political recognition sufficient to gain appointment to his state's delegation. These men were not representatives in that they were appointed (not elected) by their state legislatures (except for the delegates from South Carolina, appointed by their governor), and they did not face reelection, since the Convention met only once. However, the delegates bore some accountability for their actions in Philadelphia—each knew that he would eventually bring whatever the Convention produced back to his state, and that his pre-existing political career might suffer or thrive according to the Constitution's reception.

Thomas Jefferson, who did not attend the Convention, dubbed it an “assembly of demi-gods,” and as these men embarked on the incredibly complicated and convoluted Philadelphia project, they knew the momentous place in history the house of cards they built would occupy. Slowly and laboriously, these men debated various plans of government, represented in the 620 substantive roll call votes held throughout the Convention. The delegates voted based on the information given by the cumulative process of the convention, and so while many of these roll calls posed questions

nearly identical in denotation, their connotations imbibed the particular context of that vote's place in the series.

Between two (New Hampshire) and eight (Virginia) delegates represented each state. While the states together appointed seventy-five men, only fifty-five ever made it to Philadelphia, because of travel complications, illness, participation in the concurrent Continental Congress in New York, or another obligation. Both the individual delegates and whole delegations were inconsistent in their attendance—never did all twelve states reach simultaneous quorum³, and never were more than 42 delegates present on a particular day. Two men (counted in the 55)—George Houstoun of New Jersey and George Wythe of Virginia —departed within the first two weeks of the Convention, never to return. New Hampshire did not arrive until July 23rd, and New York lost its quorum in early July with the departure of John Lansing and Robert Yates, leaving Alexander Hamilton its sole quorum-less yet outspoken voice.

Discussions covered many subjects, but the issue of representation troubled the delegates from the first meeting. As a feature of the sovereign nature of the states under the Articles, each state held equal voice in the Confederation Congress. Legislation required approval of nine states, amendments all thirteen. Delegates from states large in population deemed this distinctly undemocratic, as it allowed a small state to exert a hugely disproportionate influence on the large. James Madison, representing Virginia, entered the Convention with a comprehensive plan of government featuring a bicameral legislature with the members of each house apportioned relative to state population. The delegates opened substantive discussion in late May with this Virginia Plan. To the consternation of Madison and his fellow large-state-hailing representatives, however, the delegates from the smaller states considered a legislature based in proportional representation just as

³ The number that constituted a quorum was decided by the legislature of each state individually.

inequitable as the large states found the current Continental Congress. From their perspective, a government of this form would render them totally impotent to the whims of the larger states.

At several points, whole small-state delegations approached the point of quitting the Convention and abandoning the infant Constitution entirely over this issue. Idiosyncratic attendance, reasoned discussion, and deals made on the floor as well as (probably) at the Indian Queen Tavern all played their role in progress on resolving legislative representation. The Convention first resolved in favor of a bicameral legislature, then on proportional representation in the lower house (the House of Representatives). Finally came the decision on representation in the upper house (the Senate), which allowed each state an equal voice. This final point, called the Great Compromise, settled on July 16—about halfway through the convention. Such was the controversial and heated nature of the debates leading up to the Compromise that the delegates knew that this deal was the only way to keep the Convention alive, and so they understood this 156th roll call vote as the final word on the issue, with no option for reconsideration. From here forward, each delegate *knew* his state's forecasted representation in the legislative branch. For example, a delegate from Virginia could expect ten representatives in the first House of Representatives, a delegate from Delaware could expect one, and all delegates knew two Senators would represent his state in the upper house. This compromise holds great significance, both for its controversy during the convention and in its permanent effect on the U.S. government. It is a key piece in the balance of power within the Federal government, and between the state and central governments.

Following the passage of the Great Compromise, the Convention deliberated other elements of the new government until September 17, 1787, when 39 delegates finally stood up to sign the finished Constitution of the United States. On this day, Benjamin Franklin closed the meeting with words that rang home to the men who had fought and compromised in Philadelphia that summer:

“Thus I consent, Sir, to this Constitution, because I expect no better, and I am not sure that it is not the best.”

After months of exhaustive debate in state ratification conventions, the people of New Hampshire resolved in favor of the Constitution on June 21, 1788 – the last of the minimum nine states needed for the document to go into effect. A necessary contingent of state legislatures ratified the Bill of Rights—the first ten amendments to the Constitution, and an understood condition for a ratification vote from some states—in 1791. Seventeen additional amendments, a Civil War, and over two hundred years of politics have altered the text of the Constitution and its place in our society. However, the core structure and function of the current United States government exists by the invention made over those four long, hot, summer months in Philadelphia.

3 Approaches to Understanding the Constitutional Convention

The discipline of studying the Constitution and the Founding is a history unto itself, akin in its place in the body of legal knowledge to the actual development of the United States as a political society. Only a handful of empirical studies of the relationship between economic interests and voting choices exist amidst the hundreds of studies of the Convention and the thousands of studies on the Constitution itself. In this section, I summarize the rise of economic and empirical interpretations of the Constitution, and in the next I describe how the findings of these studies inform the specific hypotheses and methods of this research.

Charles Beard is recognized as the first author in the field of economic interpretations of the Constitution. In 1913, he published *An Economic Interpretation of the Constitution*, a contemporarily controversial work because it highlighted the “demi” half of Jefferson’s label, after a century of scholarship focused on the latter and “god”-like characterization. Beard identified a dichotomy between the delegates attending the Convention that owed money in some form, and those who held the debt of others. He suggested that creditors would support a strong national government as

reassurance of an eventual repayment, and that debtors conversely preferred the higher potential for leniency implied by a system that favored the supremacy of state legislatures. Still, Beard pioneered the idea of the Constitution as an economic document—that it exists by the delegates channeling the economic as well as political forces of their day. While different in specific hypotheses, Beard's thesis and my own share the general theoretical assumption that the economic interests of the Founders influenced their voting.

Since 1913, legal, political, and historical analyses of Constitutional origins make close to unanimous arguments against the specifics of Beard's *An Economic Interpretation*. Forrest McDonald's 1958 *We the People: The Economic Origins of the Constitution* took an empirical approach to evaluating Beard's thesis, the first quantitative study in the field. He analyzed the proceedings of both the 1787 Philadelphia Convention and the thirteen state ratifying conventions in exhaustive detail. McDonald finds a convincing empirical basis for an economic interpretation, but also reiterates Beard's point that one cannot understand the creation of the U.S. Constitution through any single lens, and that the economic motives of the founders are only some among many forces that lead to the document the Convention finally produced. McDonald's call for a multi-disciplinary examination contextualizes the empirical limitations of this research.

Empirical works examining voting behavior at the Constitutional Convention since McDonald are relatively few, and so each substantially builds from the conclusions and data of the preceding. They fall into two broad categories: analysis of action at the state level, and at the delegate level. Data on the state positions throughout the Convention is much easier to obtain—the Convention Journal, kept by Secretary William Samuel Jackson (who did not vote) gives fairly comprehensive information on the state positions throughout the meeting. For this reason, the earlier empirical analyses do not speak to the behavior of the individual delegates, as is the goal of my research. Regardless, their examinations of the general forces at play during the Convention are relevant here,

especially the studies that examine how information conditions varied throughout the four months of the Convention.

A series of works by Jillison et al (1978, 1981, 1984) does just this—he looks to changes in state voting patterns, or changes in the composition of state voting blocs, as evidence of the political forces and economic interests that were relevant during the Convention. These three works all use a factor analysis technique, and their results, discussed below, inform my hypothesis that the Great Compromise significantly influenced voting during the Convention.

From 1984 onwards, McGuire shifts the focus in the empirical literature towards analysis of the delegate (not state) behavior. As I will describe shortly, these early models are interesting in their ability to analyze specific economic and ideological characteristics of the delegates but are limited in scope. Research using spatial analysis techniques (Heckelman et al (2013), Pope et al (2015)) expand the potential for meaningful inference at the delegate level. These studies show that economic interests manifested during the convention, particularly on issues pertaining directly to those interests. Lastly, the dataset of delegate votes I use here, compiled by Dougherty et al (2012), represents an invaluable contribution to the field of empirical work on the Constitutional Convention. I detail the aspects of these empirical studies directly relevant to my work in the coming section.

4 Hypothesis Placed in the Context of History and the Literature

In this section, I will explain the narrative behind the empirical hypotheses I will come to test, and the intuition behind the methods and variables I use. The story this research tells is one that combines economic theory of the study of information-conditional decision making, with the historical course of the Convention. Namely, it focuses on the mind of the individual delegate, and it investigates how the various interests and experiences he brings could change over the course of the

meeting. These are not new ideas. What Charles Beard introduced and Forrest McDonald developed, empirical work has tested and augmented.

The details of how economic interests impacted the creation of the Constitution lie in both empirical and subjective dispute. However, there is a common theme from Beard to the present: that there was *something* going on at the Convention other than simply a meeting of wills and minds on even playing ground. Informative lines of analysis stem from nuances that any delegate himself would have perceived, such as decisions already made by the Convention or how his words and votes would strategically fall into the room as a whole. Given the unbroachable obstacle of a lack of exhaustive⁴ primary-source data on the individual delegates, these uncertainties will probably never reach undisputed resolve. So, in forming my hypothesis, I consider the best way to use the data I have to address these intricacies of the Convention and still yield telling information on how economic interests of the Founders manifested in their voting at the Convention. I discuss how best to harness the nature of the data at hand through the creation of my dependent variable, explained in section 4.1. I address the entanglement of delegate behavior depends and the informational environment through my two-period analysis, described in section 4.2.

4.1 Measuring Deviation from the State Majority

Voting at the Convention occurred at two levels: The delegates first voted within their individual delegations, and the majority position of the delegation voted to the Convention as a whole, and that was what determined the passage or failure of any particular motion. I am using a delegate's deviation from his state's majority position as the binary dependent variable in a logistic regression model. Here, I explain why by exploring how this dependent variable is both empirically more

⁴ As I will soon describe, the dataset of individual delegate positions is arguably the most exhaustive feasible, yet still it gives only 20% of all potential individual delegate positions.

robust than other alternatives in the literature and posit its capability to shed light onto the delegates' behavior at the convention.

The first few ventures into empirical examinations of delegate behavior at the *individual* level are variations on one combination of theme and method: The author first ascertains the individual delegate positions for each vote in the set of sixteen roll-call votes McDonald (1958) deemed the most critical during the Convention. The author then (subjectively) decides whether a "yea" vote on each measure represents a "pro-national" (coded "1") or the reverse (coded "0"), enabling the pooling of the resulting positions. McGuire (1984) uses this method in a pooled logit regression to test whether certain economic interests were significantly related to delegates supporting the formation of a stronger central government than other interests. In 1986, McGuire et al conduct a similar study, but augment any missing individual delegate positions with imputations based on attendance records under the assumption that a man would have voted "pro-national" if he signed the finished Constitution. McGuire again in a 2003 book fleshes out a theoretical model of voting behavior that he tests using these sixteen votes again along the "pro-national" axis. Finally, in 2007, Heckelman et al provide a check on the natural monopoly McGuire had held in the "marketplace of ideas" of empirical models of delegate voting behavior by directly reviewing McGuire's methods and testing his hypotheses using slightly different observations of delegate votes or definitions of their characteristic covariates. This study confirmed previous findings that personal interests were important in voting during the Convention, but that the influence of constituent interests had been overstated by previous literature. In 2008 Dougherty et al again take a few votes and compress them into a binary to measure how interests manifest, but instead with a specific eye towards votes concerning slavery.

The results of these studies give statistical support to the notion that economic interests did manifest in voting at the Convention. Findings regarding the significance of specific variables

certainly inform my choices as to which covariates are relevant to my model. However, these studies all carry the two inherent and fundamental flaws that I attempt to avoid in creating the dependent variable here. First, the alignment of votes along a content-based axis such as “pro-national” or “pro-slavery” is subjective in nature. It assumes that there is just one central dichotomy that the Convention is “about,” an issue myriad political scholars and a few empirical researchers have consistently failed to resolve. While the “pro-national” distinction certainly did apply to many votes and does address a real and contentious issue during the Convention, these works give that line of thought an inappropriately large amount of weight. Additionally, using only a few votes—16 out of 620 is a small fraction—poses great risk to meaningful statistical inference. Many studies rely on the same sample of 16 votes, risking missing information that this sample may not capture.

In 2013, Heckelman and Dougherty harnessed the power of a new and exhaustive dataset of delegate inferences to break away from the earlier technique and created a spatial model of delegate voting throughout the Convention—calculating how closely any two delegates voted to each other and thus creating a spatial “map” of Convention voting. In analyzing the proximities of delegate votes, the work here allows for the concurrent analysis of many roll-call votes without obscuring the raw data. While this method addresses the two central flaws of the technique that aligned a small subset of votes around a single axis, it does not lend itself quite as well to analysis of the impact of economic interests as covariates as a logistic regression. To color in their analysis with delegate-specific data, then, these authors compare the spatial mapping results with the historical data on delegate characteristics to look for patterns. Several variables emerged as significantly related to the relative positions of the delegates.

The utilization of spatial modeling to analyze the delegates to the Convention supports my choice in dependent variable because both consider the similarity and dissimilarity of delegate votes as a valid metric by which to measure some trend or pattern. In a sense, by measuring whether a

delegate deviated from his state's majority on any vote, I am performing a two-factor spatial analysis for every observation. Both the spatial modeling technique and my own circumvent the issue inherent in classifying votes on a preconceived scale when there is no consensus on what that scale should be. Additionally, a delegate's choice of deviating from his state's majority is both concrete and one he himself would perceive. Heckelman (2013) point out another flaw in classifying votes on a preconceived scale: that "the delegates must perceive the underlying dimension to be the same as the one identified by the researcher in order for the scale to be accurate." While "How will my decision affect the balance of power between the states and the central government" certainly went through the mind of every delegate to the Convention at some point, no researcher can claim that that thought always took forefront for every delegate for every vote. However, a delegate *would* know how his voice would fall within his own delegation. Legal appointment and situational solidarity tied together the men of each delegation, and the delegates discussed their positions within their delegation before casting votes. While the actions of the rest of his delegations was not a delegate's only consideration when voting, certainly he perceived his place within the group for every vote.

The binary variable (denoted *state_dev*) that indicates whether a delegate deviated from his state's majority on each vote is also strong because it allows me to use every substantive vote in the Convention without convoluting the content of the data. The data on individual delegate positions, which I describe in great detail in Section 6, gives only 20% of all potential individual positions (5,121 out of the 25,928 Dougherty et al (2012) estimate existed overall), due to the practical impossibility of knowing historical facts that primary sources do not give. Comparing a delegate's position to that of his state allows use of close to the full set of 5,121 delegate position observations (there are 251 cases in which the authors have inferred a delegate's position, but not that of his state, bringing our number of total observations to 4,870). While this is still far fewer than the total

number of individual delegate votes that must have been cast, I argue that this set is close to complete in capturing significant instances of delegate dissensions: When the basis for the data is primary source records that is notes taken by the delegates, it follows that the available information is biased towards events that are somehow noteworthy, in the literal sense of the word. A delegate's deviating from his state majority certainly falls into this category.

The question of why a delegate would deviate from his state's majority is crucial to using the *state_dev* dependent variable for meaningful inference. The theoretical model of voting behavior developed by McGuire (2003) leads into this explanation. He models a delegate's choice of position on any given roll-call—"yea" or "nay"—as a utility function of two general categories: Personal Interests and Constituent Interests, as represented by vectors P^j and C^k . He considers Personal Interests as the ideas and experiences held by each individual delegate, and Constituent Interests the general wants of the people of that delegate's state. So, for delegate j , issue i , and state k , a delegate's vote V is given by:

$$V_i^{jk} = g(P^j, C^k) \quad (1)$$

Under this framework, the event of a delegate's deviating from his state's majority position would represent an occurrence of the Personal Interests outstripping the Constituent. If these are the two factors that go into a vote, and a delegate does not vote with his state, then there must be some personal interest at play, for in all other ways he and his fellow state delegates are identical.

A caveat regarding language: The terms "Personal" and "Constituent" are derived from McGuire's model, and are better understood as the "delegate-specific" and the "state-wide" interests, to address whether they pertain to a characteristic that varies by the delegate or by the state. McGuire's terminology is misleading for the purposes of this paper for two reasons: Firstly, the term "Constituent" is inappropriate here because it implies that the delegates are electorally

accountable for their actions, which they were not—their presence at the Convention was by appointment, not election. Additionally, these more technical labels allow more breathing room for the potential scope of the covariate characteristics to influence a delegate’s decision to deviate or not: For example, a delegate-specific characteristic such as his religion might influence him to construe the interests of the people of his state differently than the rest of his delegation, causing him to vote against them. In this scenario, he still would be acting out of a delegate-specific interest, even if it was applied to his constituency.

Under this understanding of the place of *state_dev* in the theoretical model, using delegate deviations as a measure of delegate-specific economic interests is appropriate and meaningful. As I describe the importance of accounting for the model’s temporal dimension in the next section, I also outline how a delegate’s deviation, as it is understood here, and the Great Compromise, are fitting partners in an empirical model.

4.2 A Two-Period Analysis

The Great Compromise was the decision that settled how each state would be represented in the Legislative Branch. An issue of incredible controversy from the Convention’s outset, its resolution imparted to each delegate the knowledge of where his state would one day stand in the legislative hierarchy of the new government. Delegates from smaller states could hope for as much as one thirteenth of the new Legislature, and feared the potential of a negligibly small fraction, if the larger states should succeed. On the other side of the debate, the delegates from the larger states were eager for as much legislative power as the Convention would allow.

My hypothesis rests on the same assumption that Beard introduces, and that the rest of the empirical literature consistently supports—that economic interests were significant in the Philadelphia debates. From here, I hypothesize that the manifestation of these economic interests was not constant throughout the Convention. Further, I posit that this fluctuation was a function of

how those interests were related to the content of the deliberation in question. Specifically, I hypothesize that the resolution of the Great Compromise impacted the information condition at the Convention to the extent that the relationship between delegate economic interests and delegate voting would also change across the two periods. In this section, I first describe the literature supporting the outlook on voting at the Convention as a phenomenon that was not fixed over its course. I then outline the specific way I hypothesize the economic interests of the delegates would change with the Compromise.

The Nonfixed Nature of the Relationship Between a Delegate's Voting and his Economic Interests

The authors that incorporate a time dimension into their projects studying voting behavior (Jillison (1978, 1981, 1984) and Pope (2011)) inherently suggest a relationship between time and economic interests. Notably for this research, all of these authors also identify the Great Compromise as a notable event in their empirical work. Jillison et al (1984) speak to why a delegate's economic interest might vary over time. They suggest that in order for a person to strategically manipulate a system to their own benefit, it is first necessary to understand to some degree what shape that system will take. Specifically, they illustrate how the personal interests of the delegates fluctuated in manifested impact throughout the Convention, by positing a difference between two types of decisions: those regarding structural issues in the new government and those that regard the more operational matters. For example, establishing how power would balance between the three branches of government is a structural decision, while deciding how old a person must be before running for President would occur on the operational level. Through a factor analysis of roll call votes that divided the Convention into five periods, as well as a qualitative analysis of the content of discussions, these authors concluded that the "material" (practical politics or economic) interests more manifested at the "operational" level, while the "rational" (ideas and political principles) interests influenced discussion at the structural level. These authors conclude that "some measure of

detachment was possible at the ‘higher’ level of constitutional choice because the debates over general principles provided little indication of precisely how the choice of one set of principles over another would affect the specific interests of particular individuals, states, or regions.” These conclusions relate to the hypothesis regarding the Great Compromise’s impact on how personal economic interests manifest in voting at the Convention because they speak to how the expression of a delegate’s economic interests are not necessarily fixed but are instead dependent on his perception of how that vote would fall into the context of the Convention at that moment.

Other empirical work supports the second underlying part of my hypothesis—that a delegate’s voting based on his economic interests changes with the proceedings of the Convention. While studies using only a small subset of votes are ill-equipped to encompass the full breadth of the Convention debates, they do reveal telling information about those particular votes. McGuire (1986) found that “...personal and constituent interests affected voting behavior on particular issues primarily when the interests could be significantly advanced by the outcome.”

These two pieces—that the impact of economic interests on voting varied over the course of the convention, and that the variance was in reaction to the content of the debates—taken together support the theory and intuition behind my specific hypothesis: that a delegate’s likelihood to deviate from his state’s majority changes with the Great Compromise.

The Great Compromise Hypothesis

The direction I expect the change in voting patterns after the Great Compromise to take is ambiguous. In describing the theoretical model in Equation 1, I identify how a delegate deviating can be taken as his voting out of personal, rather than constituent, interest. However, it is not clear whether the circumstances would indicate a delegate being more likely, or less likely, to vote out of his personal interest after the Great Compromise than before. Another obfuscating caveat lies in the difference between the theoretical model and what one would observe in voting at the Convention:

The model in Equation 1 identifies delegate deviation as an observation of his voting by some characteristic he does not share with the other members of his delegation—here cast as voting out of his economic interest. This interpretation does not address that a delegate voting with his state majority also could represent strategic voting, motivated by economic interests. As Jillison et al (1978) empirically show through a factor analysis of state voting blocs, in the lead-up to the Great Compromise the states as units were strategic players that formed alliances with each other based on common interests or quid-pro-quo. As each vied for power in the legislative branch—its main outlet for hopes of dominance (as compared to the Executive or Judicial)—the decision of the individual to deviate or acquiesce bore more weight, for in those instances, a delegate had to take into consideration the place of his state amidst a web of alliances. For example, a delegate might vote *with* his state in order to support a voting bloc he thought would benefit his state, even if that decision itself countered his own economic interest.

Contending stories could explain a delegate being both more and less likely to deviate before and after the Great Compromise, while remaining within the theoretical model. After the Compromise was made, a delegate might perceive less importance in voting in solidarity with his state's delegation, and be more likely to vote to his own interest. On the other hand, in line with Jillison (1984), certainty with regard to future legislative representation would create an environment with more opportunity for leveraging any particular economic interest, incentivizing a delegate to vote accordingly. Discerning voting patterns is convoluted still further by the reality that each of these two explanations could describe the actions of two different delegates voting on the same issue on the same day. The problem is complicated still further by the Great Compromise's deeply intertwined place in many other debates on the floor. For example, the Convention settled on a two-thirds majority of both houses of Congress as the required margin to override a Presidential veto. With only thirteen states in the union at the time, a coalition of small states could overpower the

President, but the feasibility of this would depend on how the delegates apportioned the legislative branch. As another example, the distribution of votes in the Electoral College stemmed directly from the Great Compromise.

For these reasons, I do not hypothesize a uniformly positive or negative impact of economic interests on the probability delegate deviation as modelled before or after the Great Compromise. The difficulty in a prediction speaks to the crucial nature of the issue of legislative apportionment in the debates, and illustrates why the Convention almost broke apart several times in the leadup to the Great Compromise.

5 Theoretical Considerations

I am using a delegate's observed deviation or acquiescence to his state's majority in each vote as an indication of the relative impact of personal economic and noneconomic interests in two periods modelled around the Great Compromise. For example, if a delegate's vote is contrary to the vote cast to the convention by his state overall, this indicates that some factor unique to that delegate overrode the interests he shares with his fellow state delegates for that vote. I model the delegate's choice as the decision to vote with the majority, or independently. So, for delegate j , issue i , and state k , a delegate's decision of acquiescence or otherwise is given by:

$$Y_i^{jk} = g(PE_j, PI_j, PE_j * post, C^k) \quad (2)$$

where PE_j are the delegate-specific factors that are economic in nature, PI_j are the delegate-specific factors that are noneconomic in nature, $post$ refers to the period after the Compromise, and C_k are the state-level or regional controls. I am looking to test if the same empirical model predicts voting behavior throughout the Convention, specifically, in the period before and after the resolution of the Great Compromise on July 16th, 1787. I hypothesize significant coefficients in the PE_j and PE_j*post set.

6 Data

Two datasets inform the empirical testing in my research. One describes voting during the Convention, and I use these data to construct the dependent variable of a logistic regression model, as well as two controls—“size” and “even”—for structural elements of the delegations. The second dataset describes the delegates and the states. It informs the economic, noneconomic, and regional control covariates in the logistic model.

6.1 CCRG Datasets

Out of 797 total roll-call votes during the 1787 Constitutional Convention, Dougherty et al (2012) in compiling this dataset identify 620 that are substantive (non-procedural) and give state and delegate positions for each. Two primary sources are the dominant ultimate informants of the project: the official Convention journal, kept by Secretary William Samuel Jackson of South Carolina (who did not vote), and James Madison’s notes. Madison’s notes are a much more descriptive source of the content of the debates than the Journal, which gives little more than the question at hand and a tally of state positions. These sources, as well as the intermittent records kept by other delegates such as Alexander Hamilton and Rufus King are compiled in the comprehensive resource *The Records of the Federal Convention* (Farrand (1911)).

6.1.1 State Position Data

The process of collecting state votes was relatively straightforward, given that Secretary Jackson reported each of the twelve⁶ attending states’ positions— “yea,” “nay,” or “divided,” on almost all of the 620 roll-calls. Missing state votes are primarily due to attendance, for a state’s position on a day it did not attend or did not reach a quorum is of course impossible to ascertain. Notably, no more than eleven states ever simultaneously attended the Convention with quorum (New Hampshire and

⁵ Source: Constitutional Convention Research Group (CCRG) Website

⁶ Rhode Island did not attend the 1787 Convention by its own truculent choice.

New York never held overlapping quorum). The challenges to empirical inference presented by the general state attendance patterns are unavoidable and thus common to all analyses of the Convention.

In the context of this specific two-period analysis, New York and New Hampshire's noncongruent attendances present special difficulty, because New York only voted before the Great Compromise, and New Hampshire only afterwards. Given these facts, does using observations of the New Hampshire or New York delegates deviating from their state majority make sense in a two-period analysis surrounding the Compromise? I argue that it still does. Consider any New York delegate, on the floor of the Convention in its nascent weeks. He does not know what the future days of the Convention will hold, what the future legislature will look like, or that his state will soon be without quorum. His choice to deviate or not is the same as any other delegate during that time period. In the other case, the two men from New Hampshire entered a meeting grown to teenage, and so had no choice but to take its status as it stood. Specifically, all the decisions made by the New Hampshire delegation were accompanied by the knowledge that in the First Congress, it would have two Senators and three Congressmen, that all of the other states would have two Senators, and that it would stand above Rhode Island and Delaware, equal to Georgia, and below the rest in terms of Congressmen. Examining how economic interests manifest under these information conditions should not depend on whether the state was present for the Great Compromise vote itself, only on how its delegates acted on subsequent decisions.

Not all of the missing state positions in the CCRG dataset are due to absenteeism. Sometimes, an irregular human error of Secretary Jackson's resulted in his failure to record the position of a state on a day it attended. There are other examples of an inconsistency in the recorded vote of a state between the Journal and the records of Madison or some other delegate. In these cases, Dougherty et al either correct for the error, if such a remedy is obvious, or else omit a state's position for that

particular vote. In the few occurrences of a state’s deliberately not voting, the authors do not record any position for that state⁷. Lastly, there are 51 substantive votes that Secretary Jackson did not number or list in the Journal. Generally, these are unanimous or close to unanimous decisions and so are not numbered presumably because Jackson did not think it worthwhile to tally state votes here. Often, Madison’s Notes give information on these issues that the official Journal glosses over. Dougherty et al are extremely conservative in their inference in cases such as this, by not recording the position of a state unless it is explicitly given by some record.

6.1.2 Delegate Inferences in CCRG Dataset

Compared to documenting the state positions, ascertaining the positions of the individual delegates required much more time and thoughtfulness on the part of Dougherty et al (2012). This process involved three steps. First, the authors accounted for delegations of one or two—for these votes, a delegate’s position must have matched that of his state. The authors consider inferences made with this first step as “known”. Next, Dougherty et al. inferred the positions of the votes a delegate spoke to *directly* during the convention, and on the day the vote was cast, as indicated in the Journal, Madison’s Notes, or some other record. Lastly, these authors compared inferences drawn in the second step to the majority vote of that state, to deduce how the remaining delegates of that state must have voted. For example, in a three-person delegation, two delegates must have voted together if the vote of the third is known and opposite of that recorded for the state overall.

While the label “inferences” to describe the process of collecting the votes of the individual delegates may imply a certain amount of guesswork or imputation of the data, the authors were extraordinarily careful and logical in their choices to the extent that no position of an individual

⁷ For example, on the first vote regarding Legislative Apportionment, NJ did not vote because its governor explicitly forbid it from voting against equality of state representation in the Legislature, and the delegation had not yet established a strategy for navigating this problem.

⁸ The exception to this “must” is if a two-man delegation reported a “divided” vote. The authors examined these cases in the next steps of the inference process.

delegate given is not grounded in hard historical evidence. In their description of the inference process, Dougherty et al err on the side of no inference in the cases that primary sources seem unable to settle definitively. Additionally, the authors formally tested the validity of the main assumption of the three-step inference process: the second step turned on the assumption that a delegate's statement always aligned with how he actually voted. Using the 61 observations for which a delegate's vote was known by step one, and he also made a statement, the authors tested their assumption by checking whether these two pieces of information matched. In all but two rather idiosyncratic cases, a delegate's vote matched his statement of intent—a result supportive of the validity of the individual delegate inferences given by the CCRG dataset.

An issue presented by this process is that the data on individual delegate's positions are more likely to refer to delegates from states with smaller delegations. I attempt to address this issue by controlling for delegation size in all specifications.

6.1.3 Creating Dependent Variable and Structural Controls

Dependent Variable: state_dev

Figure 1: Distribution of delegate deviation from state majority across all roll calls

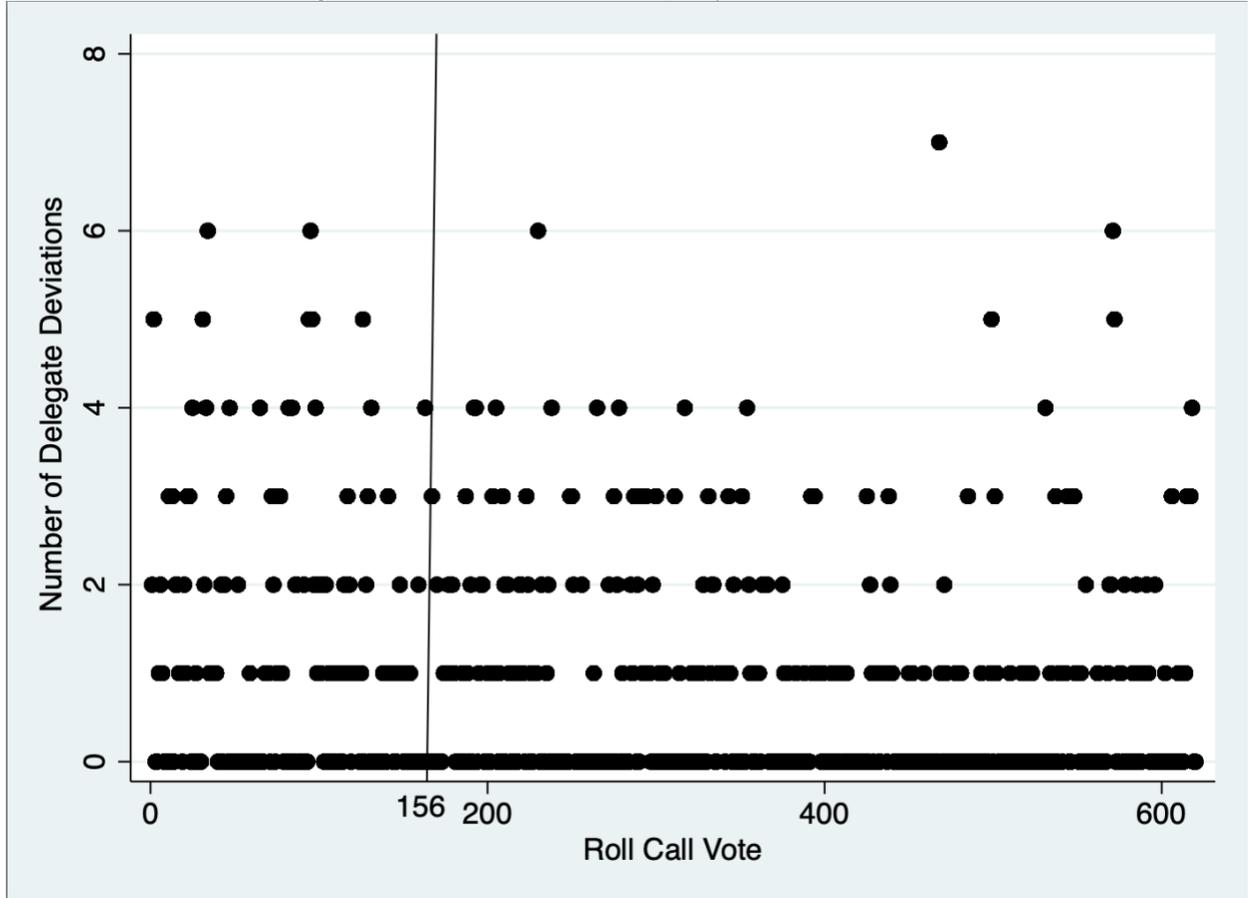


Table 1: Distribution of Delegate Deviation from State Majority, by state

State	NH	GA	NJ	NY	NC	MD	DE	CT	MA	PA	SC	VA	TOTAL
State_dev =1	0	1	3	14	18	23	33	19	105	89	101	121	527
=0	746	918	53	91	140	288	97	682	326	311	269	422	4,343
Total Obs.	746	919	56	105	158	311	130	701	431	400	370	543	4,870

Figure 1 charts the number of delegate deviations across each roll-call vote. While the number of deviations is symmetric, this figure brings to light the place of the Great Compromise among the votes during the Convention: While it occurred almost exactly halfway through the Convention in terms of time, about two-thirds of the total votes cast occurred *after* the Compromise. An

examination of the records explains such an imbalance: During the first half of the Convention, debates were longer, and votes were subsequently fewer and further between. As the Convention reached its close, and the delegates prepared to sign the finished document, the sheer number of votes increased in order to bring the meeting to its resolution. Since I am not interested in the overall likelihood of delegate deviation, but rather how the economic interests impacted the probability of delegate deviation, the even distribution of *state_dev* supports the potential for the following specifications to address patterns of interests, rather than some other concurrent phenomenon.

Table 1 tabulates delegate deviation by states. Clearly, the distribution of dissensions across states is not as symmetric as it is across time or state. Notably, there are no observations for delegates from New Hampshire voting contrary to their state's position, only one for Georgia, and only three for New Jersey. A strong sense of camaraderie amongst a delegation, an absence of voicing dissention, or some bias in Madison's records could all serve as possible explanations for these low occurrences. That Virginia has the highest number of recorded delegate deviations from the state majority is not surprising, given that Madison (a Virginian) is the source of most of the delegate positions, and he would have been sure to record if his delegation acted in a manner he himself did not see fit. While this lack of a uniform distribution of dissensions across states is not ideal, note that states big and small, as well as north and south are all represented among the delegations for which we do have more observations of a delegate's deviation. As I will outline shortly, these distinctions are of interest in the empirical model, and so the demonstrated data to those characteristics displayed here allows us to continue with this estimation strategy.

Structural Controls: size, even

Using the CCRG dataset, I construct two controls used in all specifications that address structural elements of each delegation with impact on delegate deviation. Larger delegations are

more likely than smaller ones to house some deviation, simply by their larger size. The *size* control measures the size of each delegation, specific to each vote. The two delegates who did not vote and are thus omitted from analysis of voting behavior are factored into delegation attendance for the short time that either did attend the Convention. The size of a delegation was not related to the population of the constituent state—the legislature or governor of a state selected the men who would represent it during the Convention, some of whom (for idiosyncratic reasons) never made it to Philadelphia.

The occurrence of a divided state vote presents an issue in the *state_dev* dependent variable—how can I measure deviation from the majority, in the 118 cases of a state failing to reach a consensus? The tabulations above of observed deviations simply drop the divided cases, and use the *even* control to compensate in the regression. A delegation of odd number cannot produce an even split (if every member votes) and so the *even* control speaks to the divided case.

6.2 Descriptive Data

Professor Keith Dougherty of the University of Georgia provided a full range of descriptive data for each of the fifty-five delegates to the Convention and for each of the twelve attending states. Covariates in the model include several measures of a delegate’s potential economic interest and a set of noneconomic contenders for factors influencing a delegate’s voting in Philadelphia. The focus here is delegate voting behavior, and so I omit descriptive data for the two men that attended the Convention and did not vote. Table 2 provides summary statistics and descriptions for these variables, as well as the secondary source that provided me the information. Original sources of these data are primary or historical sources (census data, biographies) employed by the author indicated in the last column of Table 2. I describe some of these variables in more detail following Table 2. No other author has examined voting through measuring delegate deviation, and so I

selected the specific covariates to include by considering any sort of demonstrated empirical impact on voting suggested by the author in the source column for each variable.

Table 2: Descriptions and Summary Statistics for Empirical Tests

	Obs.	Mean	Std. Dev	Min	Max	Description	Source
<i>Economic Variables</i>							
Num. of slaves	53	32.35849	61.36934	0	300	Number of slaves owned by a delegate in 1790	McG
Priv. securities	53	.2264151	.4225158	0	1	Indicator for if the delegate owned any private securities in 1787	McG
Pub. Securities	53	.5471698	.5025335	0	1	Indicator for if the delegate owned any public securities in 1787	McG
Western land	53	.2264151	.4225158	0	1	Indicator for if the delegate owned western lands in 1787	McG
Distance	53	16.39623	37.56653	0	200	Miles from the center of a delegate's home county in 1787 to nearest navigable water	McG
<i>Noneconomic Variables</i>							
Rev. War Officer	53	.3396226	.4781131	0	1	Indicator for if the delegate was an officer in the Revolutionary War	McG
Hierarchical	53	.5849057	.4974536	0	1	Indicator for if the delegate is Catholic or Episcopalian	H&D
Communitarian	53	.245283	.4343722	0	1	Indicator for if the delegate is Congregationalist, Deist, or Quaker	H&D
Age	53	43.71698	11.39564	26	81	The age of the delegate in the summer of 1787	H&D
Legislative	53	7.566038	6.172238	0	30	Number of years a delegate has held legislative office at any level (no overlap)	H&D
Executive	53	3.075472	7.065216	0	48	Number of years a delegate has held executive office at any level (no overlap)	H&D
Judicial	53	3.45283	6.243662	0	28	Number of years judicial at any level (no overlap), includes justice of the peace and attorney general	H&D
<i>Regional Controls</i>							
Deep South	53	.245283	.4343722	0	1	Indicator for if delegate is from GA, NC, or SC	H&D
New England	53	.1698113	.37906	0	1	Indicator for if if delegate is from CT, MA, or NH	H&D
South	53	.4528302	.5025335	0	1	Indicator for if delegate is from GA, NC, SC, VA, or MD	H&D
Population	53	34.42777	21.49505	5.9096	82.1227	Total population of each state in 1787, in ten thousands	H&D
Population Squared	53	16472.94	19534.42	349.233	67441.38	Total population of each state in 1787 squared, in ten thousands	H&D
<i>Roll Call Variables</i>							
State_dev	4,870	.1082136	.3106818	0	1	Equals 1 if delegate vote does not match state vote; 0 if delegate vote does match state vote	CCRG
Post	4,870	.763849	.4247596	0	1	Equals 0 for votes 1-156, 1 for votes 156-620	CCRG
Delegation Size _i	4,870	3.392696	1.718573	1	8	Number of delegates in attendance for each vote	CCRG
Even	4,870	.7513336	.4322843	0	1	Equals 1 if delegation size is an even number for that vote, 0 if odd	CCRG

¹In calculating delegate size, all 55 (rather than 53) delegates were used.

Source: Heckelman, Jac and Keith L. Dougherty 2013. "A Spatial Analysis of Delegate Voting at the Constitutional Convention," *Journal of Economic History*, 73(2): 407-44.

Public and Private Securities: Public securities in the context of the Constitutional Convention were debt instruments that many states issued during the Revolution. In the years following the War, the patriotic (and wealthy) citizens who held these securities suffered losses when the newly freed states did not always honor these securities at face value. Private securities were shares in private land companies and canal and road development companies. The prospects of these companies directly related to the development of the Western lands. Beard's thesis rests heavily on the impact of these securities on delegate voting at the Convention.

Western Land: Ownership of Western Land also proved an important asset in the era directly foreshadowing "Manifest Destiny." Jillison et al (1978) note that the "landed" versus "landless" dichotomy held some explanatory power in the rearrangement of voting blocs in the period before the Great Compromise.

Distance to Navigable Water: Considering the significant difficulty of travel during the 1780s, the commercial interests of delegates representing more and less coastal eras plausibly differed greatly. As the delegates deliberated issues such as the powers of Congress to regulate commerce tax exports, the various commercial backgrounds of the delegates came into conflict. McGuire (1986) derive the measure of distance from a delegate's home to the nearest navigable coastline. The results of this work found a relationship between distance to the Coast and the likelihood of voting pro-nationally that is significant and positive for some specific issues, significant and negative for others.

Hierarchical, Communitarian: The religion dummies in the Noneconomic Variable category are not necessarily part of the same set: Three delegates—Clymer and Wilson of Pennsylvania and Dickinson of Delaware—are both communitarian and hierarchical. Religions that are represented at the Convention but that are not included in the *communitarian* and *hierarchical* dummies include: Presbyterian, Lutheran, Dutch Reformist. Again, these data identify some delegates as one of these three religions as well as either *communitarian* or *hierarchical*.

7 Empirical Model

Let

$$state_dev_i^{jk} = \beta_1 X_{1j} + \beta_2 X_{1j} * post + \beta_3 X_{2j} + \beta_4 X_{3k} + post + size + even + u_i \quad (3)$$

Where $state_dev_{jki} = 1$ if the vote of delegate j opposes the vote of his state k for issue i ; 0 otherwise

X_{1j} =set of delegate-specific economic variables, for delegate j

X_{2j} =set of noneconomic delegate specific variables, for delegate j

X_{3k} =set of regional controls, by state k

$post=1$ if vote i is after the Great Compromise (vote 156); 0 otherwise

$size$ =size of that delegate's state delegation during each vote

$even=1$ if $size$ is an even number, 0 if $size$ is odd

u_i = randomly distributed error term

I am testing the same model with five options for the set of regional controls X_{3k} :

1. Regional: New England, Mid-Atlantic, Deep South (GA, NC, SC)
2. Regional: New England, Mid-Atlantic, South (GA, NC, SC, VA, MD)
3. Population Control (Total population in 1787, according to census)
4. Population, population squared
5. State fixed-effects

As the dependent variable is binary, I am using a logistic regression model to test these hypotheses:

Hypothesis A: $\beta_1, \beta_2 \neq 0$, indicating that economic interests generally impacted the probability of delegate deviation throughout the Convention.

Hypothesis B: $\beta_1 \neq 0$, indicating that the impact of a change in economic interest on a delegate's probability of deviating from the majority position of his state is not the same before and after the Great Compromise.

8 Results

Table 3: Logit Results of Delegate Deviations from their State Majority Positions

Dependent Variable: state_dev
Clustered Standard Errors by State

	Structural Controls Only	Regional controls; "South" as GA, NC, SC	Regional controls; "South" as GA, NC, SC, VA, MD	Population control	Population, Population squared controls	State fixed effects:
<i>Economic Variables</i>						
Num. of slaves		-0.000731 [0.00253]	0.00257 [0.00311]	0.000362 [0.00151]	0.00234* [0.00177]	-0.00204 [0.00510]
Priv. securities		-0.239 [0.645]	-0.313 [0.535]	-0.0410 [0.463]	-0.239 [0.492]	-0.373 [0.860]
Pub. securities		0.548** [0.426]	0.862*** [0.349]	0.993**** [0.314]	1.005**** [0.288]	0.550** [0.301]
Western land		0.402 [0.362]	0.282 [0.348]	0.324 [0.441]	-0.0123 [0.413]	0.623* [0.437]
Distance		0.00477 [0.00766]	0.00393 [0.00690]	0.00394 [0.00705]	0.00293 [0.00666]	-0.000267 [0.00546]
Joint Significance (P-Values)		0.0001****	0.0001****	0.0000****	0.0000****	0.0062***
<i>Post-G.C. Interactions</i>						
Num. of slaves		0.00546**** [0.00152]	0.00503**** [0.00141]	0.00407**** [0.00150]	0.00348**** [0.00129]	0.00366**** [0.00128]
Priv. securities		-0.354 [0.433]	-0.396 [0.428]	-0.402* [0.397]	-0.202 [0.404]	-0.172 [0.239]
Pub. securities		-0.714* [0.541]	-0.739* [0.564]	-0.819**** [0.490]	-0.883** [0.517]	-0.350 [0.407]
Western land		0.836*** [0.417]	0.873** [0.454]	0.801** [0.463]	0.738** [0.399]	0.253 [0.368]
Distance		0.0278**** [0.00850]	0.0224**** [0.00674]	0.0179*** [0.00869]	0.0238*** [0.00925]	0.0192*** [0.00970]
Joint Significance (P-Values)		0.0000****	0.0000****	0.0000****	0.0008****	0.0006****
<i>Noneconomic Variables</i>						
Rev. War Officer		1.159*** [0.500]	1.171** [0.643]	0.932** [0.552]	1.342*** [0.554]	0.919**** [0.330]
Hierarchical		1.488**** [0.364]	1.116**** [0.250]	1.225**** [0.344]	1.145**** [0.338]	1.033**** [0.345]
Communitarian		-0.137 [0.324]	-0.239 [0.297]	0.0484 [0.454]	0.206 [0.487]	0.285 [0.313]
Age		-0.0108 [0.0134]	-0.00511 [0.0145]	-0.00955 [0.0118]	-0.00395 [0.0138]	-0.0144*** [0.00587]
Legislative Experience		-0.000430 [0.0323]	0.0129 [0.0302]	0.0392 [0.0315]	0.0381 [0.0344]	-0.0475* [0.0309]

Executive Experience	0.0205	-0.000117	-0.00229	-0.0112	0.0412***
	[0.0228]	[0.0197]	[0.0192]	[0.0198]	[0.0174]
Judicial Experience	0.0192	-0.0178	-0.0163	-0.00815	0.0494*
	[0.0237]	[0.0160]	[0.0151]	[0.00884]	[0.0330]
Joint Significance (P-Values)	0.0000****	0.0000****	0.0000****	0.0000****	0.0000****

Structural Controls

Delegation Size	0.358****	0.593****	0.502****	0.321****	0.285***	0.496**
	[0.123]	[0.181]	[0.161]	[0.117]	[0.144]	[0.280]
Even	-0.446	-0.448	-0.278	-0.271	-0.379	0.151
	[0.412]	[0.356]	[0.300]	[0.253]	[0.353]	[0.286]
Post	-0.353	-0.621	-0.655*	-0.439	-0.391	-0.323
	[0.281]	[0.448]	[0.493]	[0.460]	[0.413]	[0.329]
Deep South		1.080				
		[0.626]				
New England		1.670	0.989*			
		[0.706]	[0.752]			
South			-0.216			
			[0.852]			
Population (ten thousand)				.0022647	0.0934*	
				[.0118]	[0.07155]	
Population Squared					-0.00009*	
					[.0000643]	
State Fixed Effects						****
Constant	-2.938	-6.112	-5.188	-4.551	-6.393	-4.857
	[0.650]	[1.259]	[1.242]	[0.900]	[1.502]	[1.361]
Observations	4,870	4,870	4,870	4,870	4,870	3,205

*indicates significance at the 20% level; ** at the 10%; *** at the 5%; ****at the 1%

zObservations from NH and GA are dropped here, see above for explanation. Logit results for all models without NH, GA observations are presented in the Appendix.

Hypothesis A:

Table 3 displays logistic regression results. The model regresses the economic interest variables in two periods and the noneconomic interest variables in one on the dependent variable of delegate deviation, for five methods of regional control. Across all specifications, the set of all economic characteristics are jointly significant in either period, meaning that before and after the Great Compromise, a delegate's economic interests impacted the model's prediction of his disagreeing with the majority position of his state. The set of noneconomic characteristics (modelled uniformly throughout the Convention) display joint significance consistent across all models, as well. These

findings from joint significance tests are broad results supporting the general practice of examining the voting patterns of the delegates as functions of their economic interests.

Hypothesis B:

The patterns of significance in Table 3 suggest the nature of the general influence of economic interests posited by Hypothesis A. Three of the individual economic interest variables support Hypothesis B by presenting significance (consistent across all five specifications) that is distinct between the two periods. These economic interest variables are: the number of slaves a delegate owns, the distance in miles from the center of his home county to navigable water, and the ownership of public securities. Table 4 gives the average partial effects of these significant covariates at meaningful values, corroborating the discussion of the nature and weight of each.

Holding all else equal, the more slaves a delegate owns, the greater his likelihood to deviate after (and only after) the Compromise. While consistently significant, the marginal impact (reported in Table 4) on a delegate's probability of deviation of an increase in slaveholdings never surpasses even half a percentage point, at any chosen point of evaluation.

Holding all else equal, the further from navigable water a delegate's county of origin, the more likely he is to deviate after (and only after) the Compromise. The same triviality of impact pertains to an increase in miles from navigable water.

Holding all else equal, delegates who own public securities are more likely to deviate before (and only before) the Compromise. The only economic variable that is at all significant before the Compromise is the public securities indicator, which is significant and positive across all five specifications. The lack of other significant results in the first section of Table 3 indicates that the driver of the joint significance of economic interests before the Great Compromise is the public securities dummy. Table 4 shows a marginal impact of public securities that is slightly more interesting than the APEs of the other significant variables: The model predicts that delegates who

own public securities are around 4% more likely to deviate from their delegation than those who do not own these securities. While a 4% increase in probability exceeds a .005% increase, it still does not serve as a comprehensive explanation for delegate deviation. Still, the consistent significance of these three post-interacted variables, across all tested specifications, supports Hypothesis B.

Table 4: Average Partial Effects for Variables of Particular Interest

Dependent Variable: state_dev
Clustered Standard Errors by State

		Regional controls; "South" as GA, NC, SC	Regional controls; "South" as GA, NC, SC, VA, MD	Population control	Population, Population squared controls	State fixed effects
<i>Economic Variables</i>						
Number of Slaves, Post:	=0	0.000245**** [0.0000877]	0.000229**** [0.0000733]	0.000213*** [0.0000862]	0.000159**** [0.0000609]	0.000370**** [0.000117]
	Min=6	0.000253**** [0.0000915]	0.000235**** [0.0000763]	0.000218*** [0.0000892]	0.000162**** [0.0000628]	0.000377**** [0.000122]
	1st quartile=53	0.000317*** [0.000127]	0.000290**** [0.000104]	0.000258*** [0.000116]	0.000187*** [0.0000797]	0.000432**** [0.000161]
	2nd quartile = 80	0.000361*** [0.000153]	0.000326**** [0.000124]	0.000283*** [0.000134]	0.000203*** [0.0000912]	0.000466**** [0.000185]
	Mean = 95.28	0.000387*** [0.000169]	0.000349*** [0.000137]	0.000299*** [0.000145]	0.000213*** [0.0000982]	0.000486**** [0.000200]
	3rd quartile=101	0.000397*** [0.000176]	0.000357*** [0.000142]	0.000305*** [0.000150]	0.000216*** [0.000101]	0.000493**** [0.000206]
	Max=300	0.000882** [0.000482]	0.000758** [0.000391]	0.000564* [0.000359]	0.000380* [0.000235]	0.000769** [0.000401]
Distance, Post:	=0	0.00117**** [0.000326]	0.000978**** [0.000302]	0.000911** [0.000478]	0.00100**** [0.000406]	0.00211**** [0.000768]
	Min=1	0.00120**** [0.000338]	0.000998**** [0.000312]	0.000925** [0.000491]	0.00102**** [0.000420]	0.00215**** [0.000800]
	1st quartile=8	0.00143**** [0.000442]	0.00115**** [0.000388]	0.00103** [0.000593]	0.00119**** [0.000538]	0.00242**** [0.00104]
	2nd quartile = 20	0.00191**** [0.000699]	0.00146**** [0.000559]	0.00124* [0.000804]	0.00153** [0.000805]	0.00293** [0.00152]
	Mean = 41.38	0.00307*** [0.00144]	0.00216**** [0.00101]	0.00170* [0.00130]	0.00232* [0.00151]	0.00393* [0.00246]
	3rd quartile=50	0.00365*** [0.00182]	0.00251*** [0.00124]	0.00192 [0.00155]	0.00271* [0.00187]	0.00433* [0.00280]
	Max=200	0.00199 [0.00197]	0.00346**** [0.00167]	0.00395**** [0.000585]	0.00316 [0.00262]	0.00182 [0.00204]
Public Securities, Pre		0.037** [0.0199]	0.0432*** [0.0191]	0.0563*** [0.0233]	0.0490*** [0.0210]	0.0511* [0.0346]
<i>Noneconomic Variables</i>						
Rev War Officer:	0 to 1	0.0579*** [0.0281]	0.0586** [0.0351]	0.0528* [0.0326]	0.0655*** [0.0272]	0.0909**** [0.0349]
Hierarchical:	0 to 1	0.0743**** [0.0171]	0.0559**** [0.0123]	0.0694**** [0.0237]	0.0559**** [0.0212]	0.107**** [0.0365]

*indicates significance at the 20% level; ** at the 10%; *** at the 5%; ****at the 1%

Quartiles calculated among observations of a characteristic's presence; ie. the average number of slaves owned *among delegates who owned slaves* is 95.28

While a cursory look at Table 3 supports Hypotheses A and B, the Average Partial Effects given in Table 4 impede substantive conclusions regarding the impact of economic interests on delegate deviation, and the existence of concrete changes in voting patterns with the decision of the Great Compromise. Table 5 summarizes the fitted values for each specification and provides a context for

evaluating the importance of the APEs in Table 4. None of the APEs for the economic interests verge matching a standard deviation in either group (actual observed deviation or assent) listed.

However, Table 5 also provides detail on the predicted probabilities made by the model. The range of all predictions made by the model provides a for evaluating the importance of the seemingly small marginal effects reported in Table 5: The highest probability of deviation across all specifications is 65.5%; the lowest is 0.4%, and averages (among all observations) range from 13.2% to 16.4%. These narrow ranges bolster the relative impact of a seemingly small APE. Table 6 also reveals how the minimum and maximum predicated probabilities are almost identical between the observations of actual deviation and otherwise (across all models). Consider the pair of observations—one of a delegate deviating, one of a delegate voting with his state's majority—that the model controlling for population and its quadratic gave the fitted values of 2.2% and 3.2%, respectively. Given actual events, the 2.2% prediction is not surprising, while the 3.2% prediction seems out of place. So, a slight marginal impact has more potential for an actual effect on the predicted outcome when the difference between deviation and acquiescence in the model is also small.

Table 5: Fitted Value Summaries Across All Specifications

	Observations ⁱ			Mean			Standard Deviation			Minimum Value			Maximum Value		
	=0	=1	All	=0	=1	All	=0	=1	All	=0	=1	All	=0	=1	All
<i>Observed state_dev</i>															
<i>Fitted Value Summaries</i>															
Regional controls; "South" as GA, NC, SC	4,337	524	4,861	0.120	0.235	0.132	0.094	0.106	0.102	0.012	0.017	0.012	0.628	0.628	0.628
Regional controls; "South" as GA, NC, SC, VA, MD	4,337	524	4,861	0.130	0.234	0.138	0.098	0.099	0.103	0.018	0.024	0.018	0.655	0.651	0.651
Population control	4,337	524	4,861	0.136	0.228	0.146	0.085	0.096	0.091	0.025	0.033	0.025	0.585	0.585	0.585
Population, Population squared controls	4,337	524	4,861	0.126	0.228	0.137	0.088	0.098	0.095	0.022	0.032	0.022	0.587	0.587	0.587
State fixed effects	2,673	523	3,196	0.145	0.257	0.164	0.116	0.119	0.124	0.004	0.012	0.004	0.563	0.563	0.563

ⁱThese summary statistics do not include the nine observations for Alexander Martin of New Jersey, a consistent outlier and maximum. No values changed meaningfully by his omission, except for the maximum.

The differences in significance and magnitude of impact visible between the five given specifications also renders information regarding the driving forces at play. Specifically, in Table 3 the Western Land ownership dummy is significant in all specifications *except* for the state fixed effects model. Given the specific distribution of observed delegate deviation across the twelve states, the state fixed effects method required estimation without any observations from New Hampshire or Georgia. Table A.1 in the Appendix gives logistic results for the same specifications tested in Table 3, but with observations from the same ten states for all methods of estimation. Without Georgia or New Hampshire, the ownership of Western land (before and after) is not significant in any model. Table 6 lists the delegates who owned Western land at the time of the Convention. None of these men represented either Georgia or New Hampshire, explaining why eliminating these two states significantly changed the place of Western land holdings in all specifications. Omitting data on

delegates from New Hampshire and Georgia did not impact the significance of any of the other variables displaying statistical importance in Table 3.

Table 6: Western Land Holdings by Delegate, State

Delegate	Blount	Dayton	Fitzsimons	Franklin	Gerry	Gorham	Lansing	Mason	Morris	Washington	Williamson	Wilson
State	NC	NJ	PA	PA	MA	MA	NY	VA	PA	VA	NC	PA

Under the two specifications controlling for state population, the impact of owning public securities is not the same as the other models—with population or population and population squared controls, public security ownership (both before and after the Great Compromise) is a much more significant component. Table 7 orders the states by their population, and tabulates public security ownership in each. The table shows that the delegations representing states larger in population are more diverse with regards to public security ownership. Additionally, the larger states of Virginia, Massachusetts, and Pennsylvania are neighbors in terms of population rankings, but not geographically. The combination of these two details helps explain why public security ownership appears as more important in models that account for the population size of the states.

Table 7: Public Security Ownership by State

State	DE	GA	NH	NJ	CT	SC	MD	NY	NC	PA	MA	VA
Population (ten thousands)	5.9	8.2	14.2	18.4	23.8	24.9	32.0	34.0	39.5	43.4	47.5	82.1
# delegates owning public securities	5	3	1	4	3	4	5	2	5	2	3	4
# delegates not owning public securities	0	1	0	0	0	0	0	1	0	6	1	2

Other Findings

While not directly related to the main hypothesis concerning the interplay of delegate economic interests and the Great Compromise, the logit regressions in Table 3 give information on other variables affecting delegate deviation. Across all specifications, former Revolutionary War officers were more likely to deviate from their delegation's majority than other delegates, holding all else equal. Table 4 shows the magnitude of the effect to be over five percent—a greater impact on the sheer probability than the model estimated for any of the economic characteristics.

Delegates ascribing to a hierarchical (Catholic, Episcopalian) religion were more likely to deviate from their delegation's majority position than delegates of all other religions, holding all else equal. As with the impact of officer status, the weight of the impact of practicing a hierarchical religion on deviation outstrips that of the economic interests (in any period) that were the focus of the hypotheses here—Table 4 shows an impact of between 5.6% and 10.7% for this characteristic. Especially within the context provided by Table 5, participation in a hierarchical religion seems to have made a non-negligible impact on voting during the Convention.

9 Discussion

The findings supporting Hypothesis A speak to the dozens of projects since Beard that look to decipher if and how the economic interests of the Founders affected their voting during the Convention. The most general mission of this paper was to add one more perspective to the literature of economic interpretations of the Constitution. No previous author—empirical or otherwise—focused as I have done on delegate deviation from the majority. The finding that economic interests *mattered* during the convention is consistent with the results in the recent empirical literature, and reaching this end through different empirical means corroborates the point other authors (most prominently: McGuire, Ohsfeldt, Heckelman, Dougherty) have made. The fact that the *state_dev* dependent variable produced results consistent to the literature, and (I argue) is a more comprehensive and subjective measure of votes than others used, suggests that the development of this tool also could serve future projects looking to understand the Convention.

While the logistic regression model found statistical support for Hypothesis B, the actual magnitude of these results is slight. Several factors limit the potential scope of this model. First, the available data is unavoidably limited by its primary source nature—the information recorded by James Madison cannot grow with time. An issue with potential resolution on the part of researchers is the convoluted nature of these debates. McGuire (1984) point out how logrolling and vote trading

would obscure the effects of voting out of economic interests, because these activities would result in a delegate voting counter to how he otherwise would. The same logic applies here: There are many aspects of the Convention that are inherently impossible to address at an empirical level. As a result, gauging exactly the impact of any economic interest is impossible.

The Compromise was a decision that had everything to do with powers of the states in the federal government. As these results help to discern, the debates surrounding the Compromise are entangled with other decisions facing the delegates. As one example, in discussing proportional representation, the delegates also needed to discuss how state populations would be counted. From these debates we have clauses in the Constitution regarding a census, as well as the 3/5 compromise, which held that slaves would count for 3/5 of a person for the purposes of taxation and representation. This description may shed light on the story behind the significance of the number of slaves variable, after the Compromise.

The significance of the public securities indicator supports Beard's general hypothesis. Beard held that delegates holding public securities were more likely to favor a strong federal government. Results here show that public security holders were more likely to vote contrary to their state before the Great Compromise, suggesting that speaking to this interest was perceived as more important in the period of determining legislative apportionment—perhaps when the shape the nation would take was a more unknown quantity (that could potentially favor public security holders).

The *distance* variable's positive significance after the Great Compromise may speak to another controversial and concurrent debate. Jilison et al (1981) define the Commerce and Slave Trade Compromise (Vote 352) as the next truly pivotal decision following the Great Compromise. This Compromise resulted in Congress's prohibition on banning the Slave Trade until 1800, in exchange for shipping privileges (coveted by Northern commercial states). The particularities of this compromise are heavily affected by the Great Compromise (as much as any deal based on the

powers of Congress, since the Great Compromise determined which states would have power in Congress). Since the Commerce and Slave Trade Compromise came after the Great Compromise, the significance of *distance* in the post-G.C. period must be taken with this other event in mind.

10 Conclusions

Contemporary rhetoric frequently alludes to the motivations of the Founding Fathers, but the Constitution was born in a wholly different era: one in which the majority of the population lived on farms, in which a person rarely touched paper currency, and, most significantly, one in which entire economies rested on the backs of enslaved human beings. The antiquated language of the Constitution may suggest that it was a product of its day, but the injustices ingrained in the text substantively show the society from which it emerged. While the Convention succeeded in the sense that the United States' is the longest-lasting written Constitution in history, the Convention itself is a telling and incredibly consequential manifestation of issues such as race that are deeply entrenched in the political and economic history of this country. These fifty-five men met for only four months, but during that time they managed to reconcile the interests of twelve sovereign states into one union. While the Constitution certainly is not a product of one mind or one set of interests alone, nor is it the product of some objective force juxtaposing the philosophical underpinnings of the Enlightenment.

The empirical work here builds off of that of other authors who have studied exactly how the interests each delegate brought with him to the Convention appeared in this document. In modeling the course of the Convention in two periods around the decision of the Great Compromise, this research allows us to see exactly how the informational environment around a delegate affects how he sees the place of himself and his own interests during the Convention. Three personal economic characteristics: the number of slaves owned, the distance from a delegate's home county to navigable water, and his ownership of public securities significantly impacted a delegate's probability of

deviating from his state's majority in a distinct way in the two periods divided by the Compromise. These results suggest the interplay explored by Pope and Treier (2011) between the Great Compromise and other issues explored contemporary to it at the Convention. In line with recent scholarship on the Constitution, then, these results uphold the standing that the Constitution of the United States can be seen as an economic document, and in part exists as a quilt of the interests and experiences of the Founders.

Results here are slight and subtle, but the question posed is also intricate, and the dependent variable is an indirect method of measuring the manifestation of economic interests. Additionally, it is appropriate to reiterate in my concluding remarks that while economic interests seem to be powerful influencers in the creation of the Constitution, and acknowledgement of their impact on the origins of the U.S. government is important, these were not the only forces at play that summer in Philadelphia. Enlightenment philosophy, political theory, and unrecorded quid-pro-quo made at the Indian Queen tavern the night after a long debate certainly spoke their words, as well, in creating this "Supreme Law of the Land." In the context of a convoluted and complicated meeting, the economic interests that do shine through are empirically even more interesting and robust. The trends here align with historic accounts of the convention, as seen in the description of how the significant economic characteristics and the Great Compromise were logically related. Results here still indicate that delegates *were* hedging some of their economic interests on the political structures that they were creating for themselves as well as the other Americans—alive then or not yet—who did not have the privilege of a voice in the ratification of the Constitution.

And so, the Constitution and the Constitutional Convention should serve as both inspiration and warning for America of 2019: If fifty-five men of so staunchly idiosyncratic opinion could arrive at a consensus of such monumental scope in 1787, why is the recent Congress so unable to compromise on its yearly budget that a government shutdown is albeit route? A potential answer

embodies the converse: How can a system created by a few wealthy white men truly persist in a nation whose current existence is the product of 232 years of straining against that very entity? The results here do not contain the answers to these questions, but in striving to understand a specific facet of the Convention, I hope to contribute to the general understanding of the United States as a system and a society.

Appendix

A.1 Logit Results of Delegate Deviations from their State Majority Positions, NH, GA dropped

Dependent Variable: state_dev
Clustered Standard Errors by State

	Structural Controls Only	Regional controls; "South" as NC, SC	Regional controls; "South" as NC, SC, VA, MD	Population control	Population, Population squared controls	State fixed effects ²
<i>Economic Variables</i>						
Num. of slaves		0.00167 [0.00220]	0.00426* [0.00298]	0.00300*** [0.00142]	0.00319*** [0.00143]	-0.00204 [0.00510]
Priv. securities		0.0982 [0.539]	0.0216 [0.583]	0.330 [0.343]	0.240 [0.505]	-0.373 [0.860]
Pub. securities		0.736*** [0.361]	0.829*** [0.349]	0.965*** [0.275]	0.969*** [0.270]	0.550** [0.301]
Western land		0.478 [0.401]	0.381 [0.376]	0.358 [0.420]	0.292 [0.456]	0.623* [0.437]
Distance		0.00360 [0.00570]	0.00223 [0.00555]	0.00235 [0.00630]	0.00227 [0.00612]	-0.000267 [0.00546]
Joint Significance (P-Values)		0.0001****	0.0001****	0.0000****	0.0000****	0.0062***
<i>Post-G.C. Interactions</i>						
Num. of slaves		0.00384**** [0.00140]	0.00350*** [0.00141]	0.00239** [0.00140]	0.00241** [0.00142]	0.00366**** [0.00128]
Priv. securities		-0.0739 [0.279]	-0.0760 [0.272]	0.0376 [0.307]	0.0315 [0.296]	-0.172 [0.239]
Pub. securities		-0.444 [0.496]	-0.432 [0.494]	-0.496 [0.444]	-0.543* [0.391]	-0.350 [0.407]
Western land		0.463 [0.365]	0.446 [0.378]	0.405 [0.389]	0.418 [0.397]	0.253 [0.368]
Distance		0.0208*** [0.00919]	0.0176*** [0.00715]	0.0164*** [0.00813]	0.0175*** [0.00893]	0.0192*** [0.00970]
Joint Significance (P-Values)		0.0000****	0.0002****	0.0491***	0.0700**	0.0006****
<i>Noneconomic Variables</i>						
Rev. War Officer		1.284**** [0.396]	1.336**** [0.514]	1.114*** [0.479]	1.185*** [0.518]	0.919**** [0.330]
Hierarchical		0.821*** [0.209]	0.581**** [0.208]	0.576** [0.308]	0.618** [0.338]	1.033**** [0.345]
Communitarian		0.0854 [0.340]	0.1000 [0.302]	0.225 [0.357]	0.255 [0.395]	0.285 [0.313]
Age		-0.0132 [0.0120]	-0.0103 [0.0115]	-0.0138 [0.0120]	-0.0126 [0.0132]	-0.0144*** [0.00587]
Legislative Experience		-0.00732	-0.00480	0.0234	0.0227	-0.0475*

	[0.0361]	[0.0379]	[0.0307]	[0.0311]	[0.0309]
Executive Experience	0.0192	0.00741	0.00481	0.00339	0.0412***
	[0.0268]	[0.0285]	[0.0244]	[0.0246]	[0.0174]
Judicial Experience	-0.00645	-0.0297**	-0.0322**	-0.0278***	0.0494*
	[0.0217]	[0.0165]	[0.0188]	[0.0115]	[0.0330]
Joint Significance (P-Values)	0.0000****	0.0000****	0.0000****	0.0000****	0.0000****

Structural Controls

Delegation Size	0.184*	0.341***	0.302***	0.139	0.149	0.496**
	[0.125]	[0.151]	[0.137]	[0.122]	[0.123]	[0.280]
Even	-0.0400	-0.243	-0.150	-0.151	-0.190	0.151
	[0.343]	[0.320]	[0.286]	[0.244]	[0.254]	[0.286]
Post	-0.149	-0.467	-0.460	-0.322	-0.306	-0.323
	[0.242]	[0.447]	[0.440]	[0.437]	[0.404]	[0.329]
Deep South		0.627*				
		[0.488]				
New England		1.117**	0.842			
		[0.592]	[0.699]			
South			-0.112			
			[0.796]			
Population (ten thousand)				0.000115	0.0195	
				[0.00942]	[0.0562]	
Population Squared					-0.0000191	
					[0.0000509]	
State Fixed Effects:						****
Constant	-2.294	-4.238	-3.785	-3.054	-3.556	-4.857
	[0.645]	[0.912]	[1.052]	[0.801]	[1.556]	[1.361]
Observations	3,205	3,205	3,205	3,205	3,205	3,205

*indicates significance at the 20% level; ** at the 10%; *** at the 5%; ****at the 1%

A.2 Correlation Matrix

	st_de	size	Even	nslave	dbank	dsecr	dland	dist	dfarm	merchant	revoffco	hierar~l	commun~n	dengl	age	legis	exec	judicial	south	newen.	dp. sou	pop
st_de	1																					
size	0.24	1																				
even	-0.11	-0.19	1																			
nslave	0.15	0.2	0	1																		
dbank	-0.02	0.16	0.14	-0.02	1																	
dsecr	-0.11	-0.43	0.09	-0.46	0.03	1																
dland	0.17	0.34	-0.33	0.17	0.11	-0.17	1															
dist	0.03	-0.01	-0.02	0.06	-0.1	0	-0.1	1														
dfarm	-0.12	-0.23	0.07	-0.03	-0.24	0.02	-0.17	-0.13	1													
merch	-0.11	-0.3	-0.03	-0.25	-0.08	0.28	0.02	-0.15	-0.11	1												
revoff	0.01	-0.19	0.17	-0.12	-0.32	0.2	-0.18	-0.18	0.34	0.05	1											
hier~l	0.25	0.53	-0.27	0.48	-0.05	-0.6	0.15	-0.07	-0.11	-0.37	-0.16	1										
com~n	-0.14	-0.2	0.19	-0.43	0.29	0.4	0.06	-0.04	-0.33	0.44	-0.08	-0.68	1									
dengl	-0.09	-0.2	0.01	-0.06	-0.21	0.09	-0.11	0.03	0.22	0.36	0	-0.11	-0.11	1								
age	0.01	0.08	-0.11	0.16	-0.16	-0.16	0.24	-0.18	-0.04	0.28	-0.33	0.05	0.07	0.21	1							
legis	0	-0.01	0	0.05	-0.23	0	0.1	-0.17	-0.02	0.31	-0.23	-0.12	0.12	0.24	0.74	1						
exec	-0.01	0.15	0.05	-0.06	-0.1	0.01	-0.11	0.07	0.08	0.13	-0.21	-0.11	0.11	0.27	0.5	0.48	1					
judicial	0.02	0.02	-0.12	0.41	-0.1	-0.05	0.12	-0.03	0.02	0.19	-0.24	0.07	-0.06	0.28	0.68	0.51	0.18	1				
south	-0.05	-0.25	0.27	0.11	0	0.09	-0.16	-0.09	0.4	-0.42	0.25	-0.18	-0.09	-0.52	-0.35	-0.19	-0.26	-0.3	1			
neweng	-0.12	-0.41	0.04	-0.38	-0.08	0.29	-0.07	-0.14	-0.29	0.66	-0.07	-0.35	0.44	0.53	0.25	0.34	0.14	0.05	-0.52	1		
dp.sou	0.03	-0.04	0.06	0.5	-0.09	-0.07	-0.11	0.13	0.37	-0.47	0.07	0.18	-0.4	-0.33	-0.23	-0.29	-0.22	0.04	0.69	-0.75	1	
poptot	0.24	0.5	-0.29	0.51	-0.01	-0.37	0.43	0.32	-0.29	-0.18	-0.34	0.54	-0.36	0.2	0.14	0.03	0.01	0.3	-0.42	-0.18	0.14	1
popsq	0.21	0.4	-0.22	0.57	0.01	-0.31	0.34	0.35	-0.22	-0.23	-0.27	0.48	-0.36	0.2	0.07	-0.02	-0.04	0.29	-0.34	-0.24	0.25	0.96

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