

Pork versus Policy: Experimental Evidence on Majoritarian Bargaining with Real-World Consequences*

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Abstract

Pork-barrel politics has long attracted controversy; difficult to prove and vigorously denied by those accused of it, the practice is nevertheless defended by others who argue that pork facilitates compromise. We design a novel field-in-the-lab experiment to study how legislators bargain over pork and real-world policy. We first introduce a new incentivized method to measure subjects' ideological peak preferences and attitudinal strength. Subjects then bargain over a two-dimensional agenda: a donation to a political interest group and the division of a sum of money. Consistent with our theoretical model, we find that subjects trade off monetary and policy considerations. Subjects who are in the ideological majority and who prefer status quo policies extract better bargains, but minorities gain most from the possibility of compromise afforded by two dimensions. Finally, we show that artificially-induced preferences fail to fully capture the bargaining dynamics observed using naturally-occurring preferences.

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1 Introduction

In 2004, a new line item in Illinois Democratic Governor Rod Blagojevich’s education reform package caught the eye of Republican lawmakers. The package, which gave the Governor broad control over the state school bureaucracy, had been amended to include \$20 million in construction funding earmarked for a school in the district of Senate President Emil Jones, who had only recently signalled his critical support for the reform. Republican Senator Steve Rauschenberger accused Blagojevich, who had promised to rid the state of such practices and who strenuously denied the charges, of hypocrisy: “Mr. Governor Reformovich has a distinct smell of pork...legislative quid pro quo and horse trading at its worst” (Tribune, 2014). In contrast, the 2019 construction program promoted by Illinois Democratic Governor J.B. Pritzker put some Republicans on the defense. While many Republican lawmakers remained steadfast in their opposition to the program on the ideological grounds that it required too much government spending and taxes to fund, “the opportunity to bring home the bacon proved tempting” to others who supported what they argued was a good, if imperfect, compromise after a lengthy period of partisan gridlock under the previous governor (Long et al., 2019). Such cases seemed to confirm the enduring saying that “pork knows no party lines” (Goldstein, 1995).

Pork-barrel politics, or the targeting of spending projects to local constituencies in order to secure a legislator’s vote, has long been controversial. Frequently alleged and decried as a wasteful practice, accusations almost always provoke forceful denials. However, some maintain that pork-barrel politics can actually promote the public good by “greasing the wheels” of the legislative process and facilitating compromise, and argue against recent efforts to ban it (Evans, 2004; Lazarus, 2018). Are legislators really willing to trade off material and ideological considerations? Can we identify how much they weigh each factor, and their utility functions, in a way that maps onto real-world outcomes? Who extracts better bargains when both pork and policy are “on the table”? Do certain groups gain more from the greater ability to compromise afforded by two dimensions?

Answering these questions promises new insights not only into a subject of vigorous current debate, but also a fundamental puzzle in political economy: how to measure pref-

erence tradeoffs between different political issues and domains, and more importantly, how these tradeoffs affect legislative bargaining outcomes. Over the last three decades, a large literature in formal modelling has significantly advanced our understanding of decision making in legislatures (see Diermeier (2014) and Eraslan and Evdokimov (2019) for reviews). However, the vast majority of empirical investigations, which have mainly been experimental, have focused on the distributive aspects of bargaining as in Baron and Ferejohn (1989) where the bargaining space is a budgetary division.¹ These experiments can thus speak to the “pork” side of pork-barrel politics but not to the second dimension: non-divisible ideological policy decisions, such as whether to support Blagojevich’s education reform.

Meanwhile, empirical testing of spatial models of bargaining such as Morelli (1999), Banks and Duggan (2000), and Jackson and Moselle (2002) has been quite limited despite the fact that all these models speak directly to pork-barrel bargaining dynamics. Testing the implications of these models with real-world data poses some challenges. Notably, controlling the bargaining protocol is not possible, legislators’ preferences are hard to measure accurately, politicians’ objective functions may include long-run goals which the models do not account for, and fully assessing the dimensionality of the bargaining space is virtually unfeasible.

While experimental tests of theoretical models involving pork-barrel decisions may alleviate some of these problems, such as fixing the bargaining protocol and information structures, other challenges arise. The standard procedure following Christiansen et al. (2014), who conduct a test of Jackson and Moselle (2002), is to artificially induce preferences over hypothetical policies (i.e. choosing a point in a line), and to incentivize subjects such that implementing hypothetical policies away from their assigned preferences is monetarily costly. This procedure is quite valuable as a direct test of the theory and a first step in furthering our understanding of the problem at hand. However, this methodology effectively reduces the bargaining space to a monetary dimension, and importantly, does not inform us about the tradeoffs that people may make when considering monetary

¹See Palfrey (2016) for a review and Baranski and Morton (forthcoming) for a meta-analysis.

divisions vis-à-vis policy choices from which they gain no direct monetary compensation.

In this paper, we present the results of two novel experiments designed to evaluate pork-barrel bargaining dynamics as well as the overall and distributional consequences should the practice be banned, as many have demanded. In Experiment 1, subjects bargain over pork (how to distribute \$10) and policy (a \$100 donation to a real interest group). Experiment 2 considers the banned counterfactual where individuals either bargain over pork or policy in isolation. Our experiments provide for a close test of our theoretical model while also incorporating naturally-occurring ideologies into the lab.

Our findings support the predictions of our theoretical model and offer important insights not only into how pork-barrel bargaining unfolds, but also who would benefit from its absence. First, we observe that subjects are willing to trade pork for policy in ways that correspond to their and their partners' political preference intensities. Second, we find that certain individuals are advantaged in the bargaining process and obtain superior outcomes: notably, those in the ideological majority and whose preferred policy would be implemented in the event that bargaining breaks down, extract the best bargains. Third, we find that while majority members extract the best bargains under pork-barrel bargaining, it is *minority* members who would be hurt most by a ban on the practice. Where pork and policy are both on the table, minority members have an incentive to compromise on policy in exchange for pork. Where the two are decoupled, they have no such incentive and as a result, they typically receive neither pork nor policy as their proposals are usually rejected. These latter findings highlight a need for debates over pork-barrel politics to consider differential group impacts.

In Section 2, we present relevant literatures on legislative bargaining and political preference elicitation. Section 3 introduces our experiments. Section 4 presents experiment 1, including our theory and results, and section 5 presents experiment 2. In Section 6, we discuss our findings as well as two additional questions: first, the role of information in bargaining, and second, the impact of using naturally-occurring, as opposed to artificially-induced, preferences. Section 7 concludes.

2 Literature Review

2.1 Multi-Dimensional Bargaining

Important theoretical advances that account for multidimensionality in legislative bargaining have been made since Baron and Ferejohn (1989). For example, Banks and Duggan (2000) provide a general setting that admits any voting rule and coalition structure, asymmetric players, and multi-cameral institutional settings. Jackson and Moselle (2002) consider a two-dimensional bargaining space (policy and budget) in which players bargain indefinitely to reach an agreement as in Baron and Ferejohn (1989).²

Our model is a simplified version of the one presented in Jackson and Moselle (2002). The three-player, one-round version that we present allows us to derive equilibria in pure strategies (which are generally unique) for each preference distribution and status quo policy. Although a multi-round model is, in principle, richer and more realistic, the one-round model captures similar trade-offs. As in Banks and Duggan (2000), we assume that disagreement leads to a vanishing of the private goods and the implementation of a status quo policy. Importantly, we consider a discrete policy space with three alternatives and focus on the case where two players have a common preference and a third player has a different peak preference.

To our knowledge, Christiansen et al. (2014) is the only experimental investigation of Jackson and Moselle (2002). In their study, the authors induced artificial policy preferences by assigning subjects their preferred policy choice and disutilities associated with alternative policies. Subjects were told to imagine that they were choosing where to place a bus stop and that, the further away it was from their preferred location, the higher the walking costs would be. Under their parameterizations, strange bed-fellow coalitions are predicted to occur (i.e. members with opposing bus stop peak preferences form a coalition that does not involve the median player) and are often observed. In their experiment, like in ours, committees are comprised of three members and there is a majority voting rule.

In a related experiment, Delton, DeScioli and Ryan (2020) framed a two-player ulti-

²See Morelli (1999) for a demand game (players state their desired budgetary share and policy) in a fixed sequential order.

matum game in the context of a series of political issues on which they had previously surveyed subjects' preferences. Subjects were matched with partners who disagreed with their views on the topic in hand. The allocator's task was described in the instructions as proposing a *policy*. Policies closer to subjects' political stances earned them more points and less points for the recipient. The authors report a positive correlation between the strength of moral convictions and the policy proposed (i.e. share of money kept). It should be noted that in their study, the choice of policy is hypothetical and merely expressive, as it has no material consequences outside the laboratory. Moreover, it is not possible for subjects to compromise on a second dimension because the budgetary division and policy choice represent one single decision. Finally, the game was played between two members as in most ultimatum games (see Roth 1995 for a comprehensive survey).

Our experiment is also related to the experimental investigations of the Baron and Ferejohn (1989) model over the division of a fixed budget. Minimum winning coalitions (that is, coalitions formed with the exact number of votes required for passage) are found to be the most common allocations, representing close to 60% of agreements (see Baranski and Morton forthcoming). Laroze, Hugh-Jones and Leininger (2020) investigate behavior in a 3-player majoritarian variant of the game where subjects' self-reported ideological stances are publicly revealed (but there are no policy choices to be made, only a budgetary split). The authors find that ideological distance negatively affects sharing, a result we share as we find that majority members typically transfer less pork to minorities.

Lastly, our study also builds on an empirical literature that uses real-world data to study pork-barrel spending. While much of this literature assumes that legislators trade pork for policy support, there is nevertheless little direct evidence, especially causal, of this phenomenon. Evans (1994) studies a 1987 highway bill in the U.S. House of Representatives and finds evidence consistent with pork being used to build policy coalitions. Studies by Lee (2000, 2003) indicate that pork helps determine coalition formation and policy support in both the U.S. Senate and House of Representatives. Lazarus (2010) finds that pork distribution is predicted both by intrachamber factors, such as seniority or membership in the majority party, and by local demand-side factors.

A number of other observational studies engage more directly with majority-minority bargaining dynamics but take a different theoretical approach from our own. Carroll and Kim (2010) find that majority legislators who are policy “losers” receive larger pork transfers. In their theory, offering pork is done not to garner a legislator’s favorable vote on a policy, but instead to maintain their support more generally for majority party procedural control, and thus goes to majority members who vote more often against majority policies. Nevertheless, their findings indicate that legislators may indeed trade off pork and policy considerations, and that these patterns might differ for majority and minority legislators. In another study on majority-minority dynamics, Balla et al. (2002) posit that majority members include minority members in pork distributions primarily as a way to avoid blame from the public.

2.2 Political Preference Elicitation

As stated earlier, experimental evaluations of pork-barrel bargaining dynamics have heretofore relied on artificially-induced political preferences. While these designs facilitate close tests of formal theories, one potential concern is that by attaching monetary values to artificial policies, researchers are effectively collapsing two dimensions (pork and policy) into a single one (pork). To address this concern and to get us closer to the real world, in our paper we used real-world behaviorally elicited preferences.

In order to study how individuals trade off pork and policy preferences, it was necessary that we measure both individuals’ preferred policies and the intensities of those preferences. To do so, we adopted a donation-based behavioral elicitation method which was validated as an effective way to overcome issues of respondent satisficing, social desirability bias, and a lack of respondent knowledge (see Haas and Morton (2018) for more on the method and its theorized advantages). In their study, Haas and Morton (2018) compare individuals’ ideal points and find that they differ under two methods: a behavioral one where subjects were asked to divide a sum of money between two interest groups on a number of issues and a non-behavioral one where subjects were asked to answer questions on a Likert scale on the same set of issues. In our design, we first have subjects

make a series of donation decisions, and then we additionally measure their preference intensities through a second exercise (see Section 4.1). In Section 6, we investigate the consequences of using naturally-occurring versus artificially-induced preferences in our pork-barrel game.

3 Two Experiments on Bargaining

To evaluate our research questions, we conducted two laboratory experiments on bargaining. Each experiment is designed to tackle a different motivating research question (see Table 1). Taken together, they provide insights into pork-barrel bargaining dynamics, their overall and distributional implications, and the potential consequences of efforts to ban pork-barrel politics by mandating that pork be decoupled from policy in the negotiation process.

Table 1: **Two Experiments on Bargaining**

	Research Questions	Bargaining Features
Experiment 1 <i>(Characterizing Pork-Barrel Bargaining)</i>	<ol style="list-style-type: none"> 1. <i>What happens when legislators have the option of engaging in pork-barrel bargaining?</i> <ol style="list-style-type: none"> a) Do they trade pork and policy? b) Do their decisions correspond to: <ol style="list-style-type: none"> i) measures of policy preference intensity? ii) predictions of theoretical models? c) Who extracts better bargains? 	Two-dimensional pork-barrel bargaining over divisible budget <i>and</i> non-divisible real-world policy
Experiment 2 <i>(Considering Counterfactuals)</i>	<ol style="list-style-type: none"> 2. <i>Would overall and distributional outcomes differ if pork-barrel bargaining was banned?</i> <ol style="list-style-type: none"> a) would fewer bills get passed? b) would political minorities or majorities fare differently? 	One-dimensional bargaining over <i>either</i> divisible budget <i>or</i> non-divisible real-world policy

In what follows, we present each experiment and its results in turn, before reflecting on overall takeaways across them. Experiment 1 investigates behavior in a two-dimensional game where subjects bargain over a divisible sum of money and a non-divisible policy choice with real-world implications. Experiment 2, in contrast, evaluates bargaining over a single dimension: either a divisible sum of money only, or a non-divisible policy choice

only. Finally, in our discussion section, we also report results from additional experiments designed to probe the robustness of our results, to aid in their interpretation, and to examine the implications of our findings and some of our more novel experimental design features, most notably our incorporation of naturally-occurring, as opposed to artificially-induced, political preferences in the lab.

In total, just over 400 subjects participated in over 3,000 rounds of bargaining across 19 experimental sessions of our study. Subjects were recruited from an ideologically diverse undergraduate student population at a large U.S. Midwestern university. Average payments, including the show-up fee, were between \$13 and \$14 with sessions lasting close to 1 hour. Sessions were conducted between November 2018 and November 2021.³

4 Experiment 1: Bargaining over Pork and Policy

Experiment 1 consisted of three stages (see Figure 1).⁴ In stages 1 and 2, we measured participants' political preferences. In a behaviorally incentivized way, subjects answered whether they preferred the left, middle, or right alternative for different policies, and they said how much this choice was worth to them (details explained in Section 4.1).

In stage 3, subjects played eight periods of a bargaining game where a division of a sum of money and a policy choice were made (details explained in Section 4.2). In each period, they were randomly matched in groups of three and received information from stages 1 and 2 on partners' policy preferences.⁵

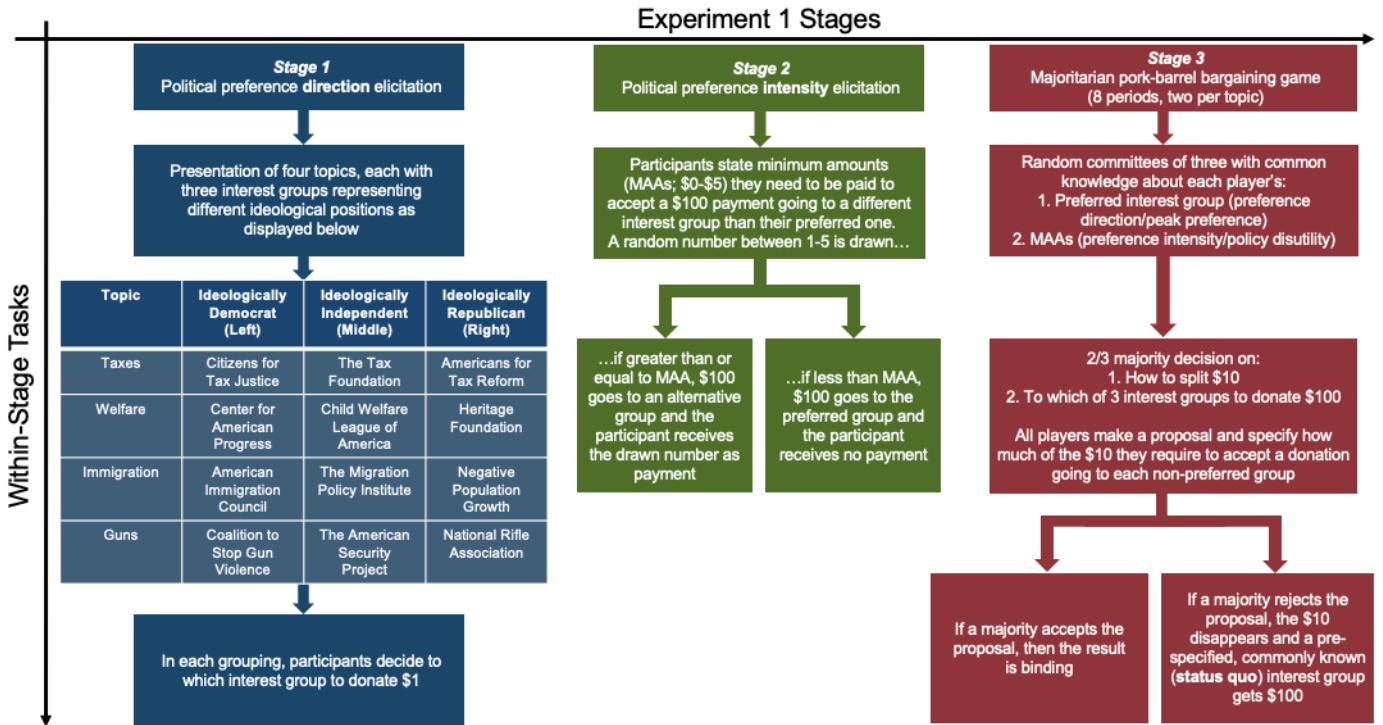
In this Section, we explain each stage of Experiment 1, detail our theoretical predictions and hypotheses, and lastly, present and discuss results.

³See Supplemental Online Appendix, hereafter Appendix, for information on sample demographics and evidence that randomization was effectively implemented across experiment conditions.

⁴All experimental material, including instructions, can be found in the Appendix.

⁵Importantly, in stages 1 and 2 of the experiment, subjects were not aware that they would participate in a subsequent bargaining game (although they were aware that there were other parts to the study), to reduce the likelihood that they would seek to strategically misrepresent their true ideological stances.

Figure 1: Experiment 1 Design



Notes: Subjects also completed a brief demographic survey at the start of the study, and some questions on political knowledge at the end.

4.1 Preference Elicitation (Stages 1 and 2)

To measure their directional (or policy peak) preferences, in stage 1 of the experiment participants were shown U.S. interest groups working in four different issue areas: welfare, taxes, immigration, and gun control. For each issue area, we selected groups advocating for either ideologically left-leaning, middle, or right-leaning, policies. Participants saw a brief description of the three groups and their activities which were taken from official web pages, and groups were arrayed from left to right, with corresponding ideological and partisan labels (see Figures 1 and A1).^{6,7} Subjects were then asked, for each issue area, to select one group to which they wanted the experimenter to donate \$1 on their behalf.⁸ One donation was randomly chosen to be implemented for each subject, and this

⁶Prior research has demonstrated a link between partisan identification and donation allocation decisions (Haas and Morton 2018). We similarly find a link in this study (see Appendix Section 4.4).

⁷These design features ensured that the political ordering of groups was common knowledge, and that subjects could make an effort to become more informed prior to making a donation decision.

⁸One might argue that in a *perfect* experiment the chosen interest groups should differ on only one dimension, be equally renowned, and have similar financial composition. However, in stage 2, we elicit a

information was shared with participants following the conclusion of the experiment.

The purpose of stage 2 of the experiment was to identify the strength of participants' preferences for the interest groups they had selected in stage 1. We accordingly measured preference strength by eliciting the monetary cost, or disutility, that subjects associated with donations to non-preferred interest groups.⁹ Specifically, subjects revisited each issue area and saw again their preferred group from stage 1. They were then asked to state a minimum amount, between \$0 and \$5, that they would need to be paid in order for them to accept the experimenter donating \$100 not to their preferred interest group, but rather to each non-preferred, alternative group. Thus, for example, if a participant had decided in stage 1 to donate \$1 to the National Rifle Association (NRA), which is on the ideological right, they would be asked in stage 2 to state amounts between \$0-\$5 that they would need to be paid in order to accept \$100 going not to the NRA, but instead to a group in the ideological middle (American Security Project) or left (Coalition to Stop Gun Violence). We made it clear to participants that they could block the alternative donation if they felt strongly about their own group by stating a minimum of \$5.

A subject's minimum acceptable amount (MAA) carried potential consequences both for a subject's own earnings and the interest group that stood to receive a \$100 donation.¹⁰ After a subject stated their MAAs, a computer randomly drew a number in the same \$0-\$5 interval. If the number drawn was greater than or equal to the subject's minimum acceptable amount, then the subject would be paid the drawn amount and \$100 was donated to a non-preferred group. If the number was less than the stated minimum amount, the subject was paid \$0 and the \$100 was donated to their preferred group.¹¹

subject's strength of preference for one group *relative* to non-preferred groups and thus we do not require that the groups are equidistant in the ideological spectrum.

⁹Our elicitation procedure might therefore also be considered an improvement over the donation method advanced by Haas and Morton (2018) in that we disentangle preference direction and strength (see Malhotra et al. (2009) on the importance of disentangling the two in survey research).

¹⁰Due to the high donation amount, we randomly selected one participant's stage 2 decision from each session to "count" and implemented it accordingly. While this choice of compensation is unusual, compensating every person would have made our experiment prohibitively costly due to the real donations (and the large donation amounts to create a high-stakes scenario) we made to interest groups.

¹¹Appendix Section 3 displays the distribution of preference directions and intensities, and Appendix Section 4.4 compares them to stated ideologies and partisan leanings; we observed a wide range of answers, as well as a high degree of correspondence with stated preferences.

4.2 A Pork-Barrel Bargaining Game (Stage 3)

After participants had completed stages 1 and 2 of the experiment, they advanced to stage 3 and a game where they bargained in groups of three over a divisible sum of money (pork) and to which interest group a sizeable donation would go (non-divisible policy). Our game was designed to mirror pork-barrel bargaining and is based on a simplified, one-round version of Jackson and Moselle (2002). In this section, we describe the different phases of the game; see Appendix Section 1 for a more formal, game-theoretic presentation.

Each of the eight periods of our bargaining game began with subjects being randomly assigned to committees of three. We also randomly selected one of the same four topic areas as in stages 1 and 2 – welfare, taxes, immigration, or gun control – to be the issue considered in a given period. Each topic appeared twice: once in periods 1-4 and once in periods 5-8. All three members of a committee could see two pieces of information about their partners (and themselves): their preferred interest group for the randomly chosen topic (*preference direction*, elicited in stage 1), and how much they preferred that interest group to each of the two alternatives (*preference intensity*, stage 2).

Committees were tasked with bargaining over both pork and policy. As regards pork, they were asked to divide a \$10 endowment amongst themselves.¹² As regards policy, they had to choose to donate \$100 to *one* of three interest groups in a given topic area: either one on the left, middle, or right of the ideological spectrum.¹³ Thus, while pork was divisible, policy was not: members could only choose a single interest group. Each subject, acting individually and independently, first made a proposal, specifying a share of the \$10 for each member of the committee and an interest group to receive the \$100. One proposal was then randomly selected to be the one on which subjects voted.

Voting worked in the following way: after subjects had submitted their proposals, but prior to seeing their partners' proposals or knowing which proposal would take the floor for a vote, each subject stated a "voting threshold" specifying the smallest share of the \$10 endowment that they would have to be offered in order to vote in favor of a policy

¹²We use "endowment", "budget", and "pork", interchangeably.

¹³As in stage 2, due to the high donation amount, we randomly selected one committee's stage 3 decision from each session to "count" and implemented it accordingly (see footnote 10).

proposal. Because a proposal could potentially include one of three different policies, each subject thus stated three voting thresholds: that is, they said how much of the endowment they would have to be paid in order to support a bill that included a left, middle, or right policy choice. Finally, votes for the randomly chosen proposal were tallied according to subjects' stated voting thresholds and subjects were informed as to the outcome (see Table 2). If two or more votes were in favor, then the proposal was approved and implemented: each member received their specified share of the endowment, and the specified interest group received the \$100 donation.

Table 2: **Voting Outcome Implications in Experiment 1**

Dimension	Voting Outcome	
	Majority Votes for Proposal	Majority Votes against Proposal
Pork (divisible \$10 endowment)	\$10 divided between members as dictated by proposal	\$10 endowment is lost; no member receives any money
Policy (non-divisible \$100 donation)	\$100 donated to <i>single</i> interest group as dictated by proposal	\$100 donated to <i>single</i> interest group, which was selected and known to all members prior to bargaining in a given period ¹

¹ This group is understood as the status quo, or default, policy, as it represents the policy that will be implemented should no change to policy be made (no bill is passed).

If a proposal was rejected, no one received any pork (the \$10 endowment vanished). However, in the case of rejection, it was still important that an interest group receive a donation: both because having a policy implemented should a new proposal not pass more closely resembled the real world and was of theoretical interest, and because having both policy and pork disappear in the event of rejection would likely stack the deck too far in the direction of agreement. We thus chose in each period an interest group that would receive the \$100 donation if a proposal was rejected, and communicated this choice to all members of the committee prior to eliciting their proposals and voting thresholds.¹⁴ We call a donation to this group the “status quo” or “default” policy, as it represents the policy that would be implemented should no proposal pass.

¹⁴In periods 1-4, the group's median peak preference was the default, and in periods 5-8 it was a non-median peak.

The bargaining game was thus designed to reflect pork-barrel bargaining in a legislature. That is, legislators (experiment subjects) proposing an ideologically divisive policy (\$100 donation to an interest group) might promise some pork (share of the \$10 endowment) to other lawmakers (committee members) in exchange for their vote. And legislators considering a bill (proposal) might demand that a certain amount of pork be attached to a policy to earn their support. If no agreement is reached, the bill will not pass and no one receives any pork, but often, the policy that preceded bargaining remains in place. Next, we turn to theoretically expected bargaining dynamics in such a legislature.

4.3 Experiment 1 Hypotheses

What dynamics are expected to emerge when legislators bargain over two dimensions, one divisible and monetary and the second non-divisible and ideological? Our empirical expectations are informed by our formal game-theoretic analysis of the bargaining game described above, as well as relevant empirical regularities reported in the literature. Appendix Section 1 contains our formal analysis and resulting equilibrium predictions.¹⁵ Here, we simply provide some intuition into the forces at play in the game and how their interplay informed our hypotheses.

In order to better understand pork-barrel bargaining dynamics, we seek to identify in particular when, theoretically, subjects should compromise on policy (i.e., choose a different interest group to receive the \$100 than their preferred one) and how they should divide the pork (i.e., the \$10 endowment). We then conduct an empirical test of our theoretical expectations. In our theoretical and empirical analysis, we focus on cases where two of three members share a policy preference in order to understand the bargaining dynamics between majority and minority members.

First, we ask whether individuals will be receptive to trading pork and policy. Will subjects adjust their voting thresholds depending on the policy proposal? Consistent with trading, our model predicts that a player proposing a policy is more likely to make

¹⁵Our formal analysis is based on two assumptions. First, that subjects are motivated to maximize their own utility, and second, that their utility can be decomposed into the sum of the money they receive and the utility (or disutility) they receive from the policy choice. The solution concept we use is subgame perfect Nash equilibrium; precise definitions can be found in the Appendix.

Table 3: **Theoretically Predicted Proposer Behavior in Experiment 1**

Ideology	Status Quo	
	Own Preferred Policy	Non-Preferred Policy
In Majority	Keeps \$10, proposes own policy	Keeps \$10, proposes own policy
In Minority	Keeps \$10, proposes own policy	Depends on relative preferences

a monetary transfer to whichever of their partners suffers less disutility from that policy, reflecting an expectation that players are more (less) willing to accept a smaller share of the budget where a policy is more (less) preferred. H1 accordingly posits that people should demand less pork when the proposed policy matches their preference.

Hypothesis 1 (Voting Thresholds). *Players are willing to accept a smaller share of the budget when the policy proposed is their preferred one and demand a larger share for alternative policies.*

People might be willing to engage in pork-barrel bargaining, but under what conditions should we theoretically expect it to occur, and among whom? Should certain parties obtain better outcomes? As explained in Appendix Section 1, we expect three factors to drive proposers' policy and pork offers: (1) whether or not the proposer is in the ideological majority, (2) the status quo policy, and (3) the relative strength of her preferences vis-à-vis the voters. Table 3 summarizes our theoretical predictions; the proceeding hypotheses incorporate their qualitative insights.

Hypothesis 2 (Majority Advantage). *For any status quo policy, majority members propose their preferred policy and a larger share of the budget for themselves. If transfers occur, these take place between majority members.*

This hypothesis follows from the fact that members are always better off voting in favor of their preferred policy and majority members will always have the votes required to pass such proposals. Note that, if a majority member rejects a proposal in which the policy is her preferred one and the proposal fails to be approved, she will suffer two potential consequences: no pork (it vanishes) and an equally or less preferred status quo policy. Thus, the strict equilibrium prediction regarding pork is that majority members should transfer \$0 to their committee partners.

However, we know from previous experimental work that such divisions rarely occur with human subjects. Explanations for divergences between strict theoretical predictions and actual behavior in bargaining games vary, but most prominent are references to fairness or other-regarding preferences. A meta-analysis of Baron and Ferejohn (1989) bargaining games suggests a similar gap between prediction and empirical data, with subjects transferring and demanding more than anticipated (Baranski and Morton forthcoming). Hence, we predict that majority members will allocate themselves comparatively more pork than will minority members, and that when majority members do transfer pork, it should primarily go to their majority and not their minority partners.

Hypothesis 3 (Status Quo Proposer Advantage). *Members whose preferred policies are also the status quo propose their preferred policy and a larger share of the budget for themselves.*

A member whose preferred policy is implemented in case of proposal rejection should, according to the strict subgame perfect prediction, keep all the budget and propose her preferred policy. The other members are then indifferent between voting in favor or against and such indifference may be broken with a small pork transfer.

Hypothesis 4 (Minorities Compromise). *Members of the minority will choose their own policy only if at least one of the following conditions hold: 1) The status quo is their preferred policy or 2) There exists a majority partner with weaker preferences; in this case, the minority partner transfers the minimum amount of pork required to compensate the cheapest majority partner in return for their vote. In all other cases, a minority player compromises on policy by proposing the majority's preferred policy or a middle ground.*

H4 highlights the trade-off between pork and policy compromise that minorities may face.¹⁶ Minority partners have two viable options to secure the approval of their proposals: to propose their preferred policy or the majority's preferred policy. If they choose their own, they must compensate at least one majority partner with enough pork such that she would prefer to vote in favor than to reject. Recall that rejection entails implementing

¹⁶The status quo proposer advantage has been explained in the justification of the preceding hypothesis, hence we focus here on the second aspect of H4 concerning the relative strength of preferences.

the status quo. If the majority partner cares little about policy (has weak preferences), the minority proposer will find it suitable to transfer pork and choose her preferred policy. Otherwise, the minority partner would have to transfer too much pork to obtain a favorable vote and she would rather compromise on policy and keep the pork for herself.¹⁷

4.4 Experiment 1 Results

We conducted six experiment 1 sessions with 15 subjects each for a total of 90 subjects and 720 bargaining periods. To elucidate majority-minority bargaining dynamics, we focus our analysis on cases where two of three group members shared a policy preference. 67% of all randomly formed committees had the desired majority-minority composition. We relate results to our respective stated hypotheses, and we probe their robustness and offer additional analyses in Appendix Section 4.

Trading Pork and Policy When given the opportunity, do individuals trade pork and policy? We find that in 49% of cases where subjects preferred a proposed policy, they were willing to guarantee their vote in favor of that policy for \$0; on average, they asked for only \$1.99 of the \$10 budget. In contrast, when proposed policies were non-preferred, subjects were willing to accept \$0 for their favorable vote only 38% of the time and on average demanded \$2.68.¹⁸ Figure 2, which displays cumulative distribution functions of subjects' demanded amounts of pork, illustrates individuals' systematic tendency to demand lesser amounts of pork for votes in favor of preferred, as compared with non-preferred, policies.^{19,20} These results provide strong support for H1, which predicted that subjects would be willing to accept a smaller share of the budget for preferred policies, and thus for the notion that individuals do indeed trade off pork and policy considerations.

Extracting Better Bargains: The Majority Advantage Are individuals in the ideological majority in an advantaged position when bargaining? We find that 71% of

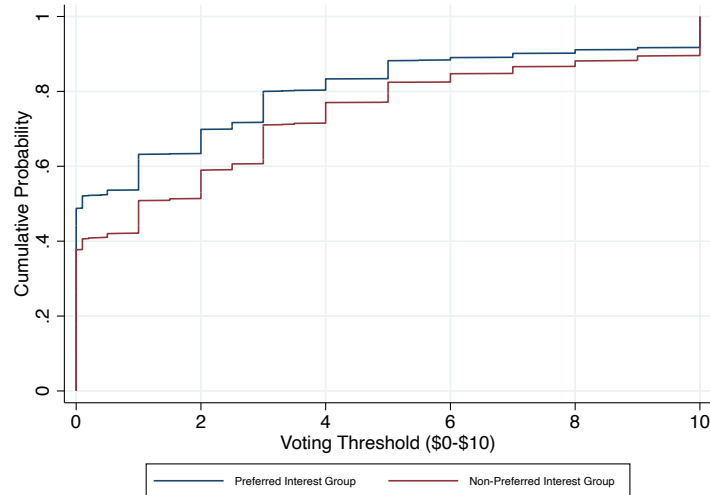
¹⁷A detailed graphical explanation of the theoretical arguments behind this hypothesis can be found in Appendix Section 1.

¹⁸Two-sample two-tailed tests of proportions willing to accept \$0, and of mean demanded amounts, yield, respectively, a z statistic = 4.91, Pr=0.00 and a t statistic = 4.68, Pr=0.00.

¹⁹A Kolmogorov-Smirnov test indicates that the distribution functions are not equal ($p < 0.001$).

²⁰Figure 2 pools across non-preferred interest groups. As expected, we also find that subjects state higher voting thresholds for *comparatively more* non-preferred interest groups (see Appendix Section 4).

Figure 2: **Willingness to Trade Pork and Policy in Experiment 1**



Notes: This figure compares subjects' stated voting thresholds – the required amount of pork for a vote in favor of the relevant policy – for preferred and non-preferred interest groups in Experiment 1. We pool across subjects in the ideological majority and minority (see Appendix Figure A8 for disaggregation).

majority subjects propose their preferred policy, as compared with only 28% of those in the minority (see Figure 3).²¹ The substantially lower willingness of majority players to compromise on policy indicates the existence of a majority advantage. It is also consistent with the first empirical prediction of H2: while majority players do not *always* propose their preferred policy, they do so at a much higher rate than minority players.

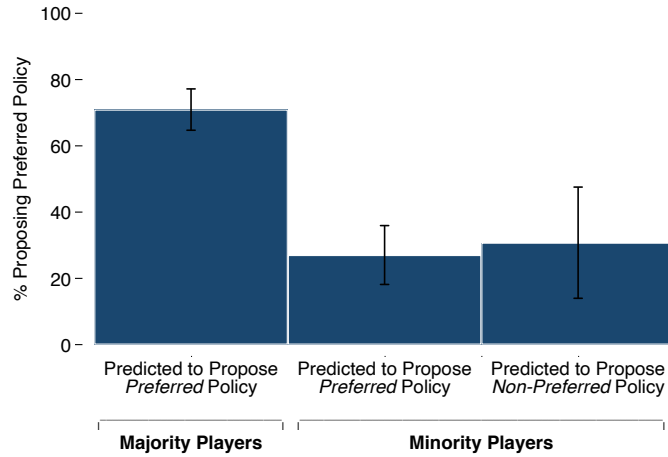
Does the majority advantage in policy extend to pork? On the one hand, we do not observe that subjects in the majority allocate themselves a greater share, and their partners a lesser share, of the budget as compared with minority subjects (see Figure 4).²² On the other hand, we do find that majority players on average transfer a significantly larger portion of the budget (\$2.66) to other majority players than to their minority partners (\$1.89, also shown in Figure 4).²³ Indeed, even though majority players do not allocate *themselves* more pork than do minority players, transfers *between* majority partners are sufficiently larger than transfers to minority partners that majority players

²¹Two-sample two-tailed test of proportions shows a z statistic = 8.67, Pr=0.00.

²²We consider self-allocated amount and not whether one allocated the full \$10 to themselves (thus transferring \$0 to partners) as our dependent variable because so few subjects allocated themselves the full \$10 budget. We report results with this alternative operationalization in Appendix Section 4.

²³Two-sample two-tailed t-test yields a t statistic = 5.60, Pr=0.00.

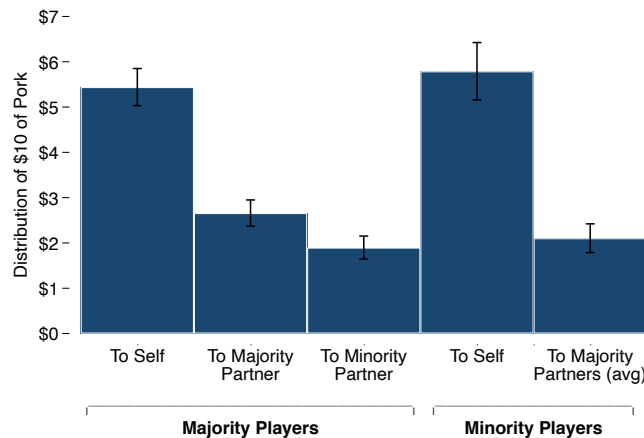
Figure 3: **How Majority Status Affects the Likelihood of Policy Compromise**



Notes: This figure compares how often subjects proposed their preferred policy based on whether they were in the ideological majority or ideological minority, and whether they were theoretically expected to propose their preferred policy or to compromise on policy. While majority members are always predicted to propose their preferred policy, predictions for minority members depend on the minority proposer’s strength of preferences relative to voters (see Table 3). Standard errors are clustered at the individual level and we display 95% confidence intervals.

take home, on average, more pork (\$3.66) across proposals than minority players (\$3.19).²⁴

Figure 4: **How Majority Status Affects the Distribution of Pork**



Notes: This figure compares how much of the \$10 budget subjects allocated to themselves and their partners, based on whether they and their partners held the majority or minority peak preference. Recall that all members made a proposal, one of which was then randomly selected to be the one on which members voted (see Section 4.2). Majority members are expected to take home more pork than are minority members; when transfers do occur, majority members are expected to transfer more pork to their majority partner than to their minority partner. Standard errors are clustered at the individual level and we display 95% confidence intervals.

²⁴Two-sample two-tailed t-test yields a t statistic = 3.03, Pr=0.00.

We thus find more mixed evidence as regards the majority advantage with allocations of pork. We do not observe, as H2 would predict, that majority members allocate themselves more pork than do minority players. However, we do find support for our expectation under H2 that majority members should transfer greater amounts to their majority partners than to their minority partners. Further, the fact that majority players take home on average more money across proposals than do minority players points to a majority advantage also on the pork dimension.

Extracting Better Bargains: The Status Quo Advantage Do individuals whose preferred policy matches the status quo – the policy implemented in the event of proposal rejection – extract superior bargains? We find that where there is a match, subjects propose their preferred policy 62% of the time, as compared with only 52% of the time where there is a mismatch (see Figure 5).²⁵ However, we do not observe a parallel effect with pork: subjects whose preferred policy matches the status quo do not on average allocate themselves larger amounts of the budget (see Appendix Table A8). We thus find partial support for our third hypothesis: there appears to be a status quo advantage on the policy dimension, but we do not find evidence of an advantage as regards pork.

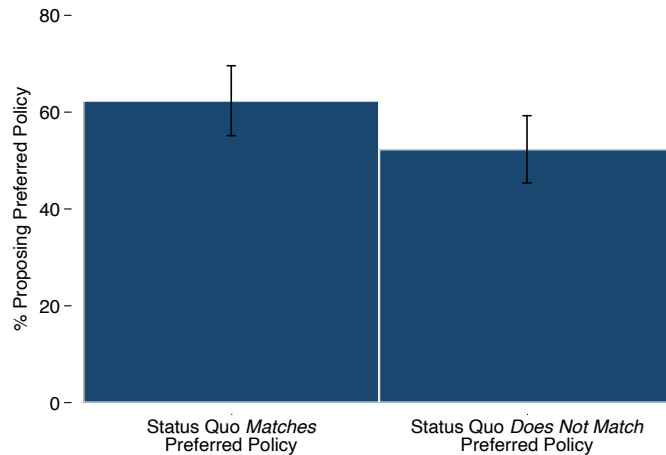
Minority Compromise Do minority players compromise on policy when predicted? Overall, we find that minority players proposed their own preferred policy only 28% of the time, substantially less than the 48% our theory would predict based on the specific observed committee compositions.²⁶ While the overall rate at which minority players proposed the majority’s preferred policy (55%) more closely approximated the prediction (52%), a further disaggregation of decisions by prediction reveals little overlap between observed and expected minority behavior on a case-by-case basis (see Figure 6).²⁷ Minority players predicted to propose their own preferred policy did so 27% of the time, and proposed the majority’s preferred policy in 56% of cases. Contrary to H4, these rates

²⁵Two-sample two-tailed test of proportions shows a z statistic = 2.11, Pr=0.03.

²⁶Recall that minorities’ decisions to compromise on policy depend, theoretically, on the relative strength of policy preferences and the location of the status quo policy. The specific prediction as to whether a minority player should compromise on policy or not thus varies by committee composition.

²⁷In cases where the majority and minority players are at the extremes of the spectrum, we find that 22% of the time minority players propose a middle ground.

Figure 5: **How the Status Quo Affects the Likelihood of Policy Compromise**



Notes: This figure compares how often subjects proposed their preferred policy based on whether their preferred policy matched the status quo policy (in which case they would always be expected to propose their preferred policy) or did not (in which case their likelihood of policy compromise would depend on their strength of preferences relative to voters and their majority/minority status). Standard errors are clustered at the individual level and we display 95% confidence intervals.

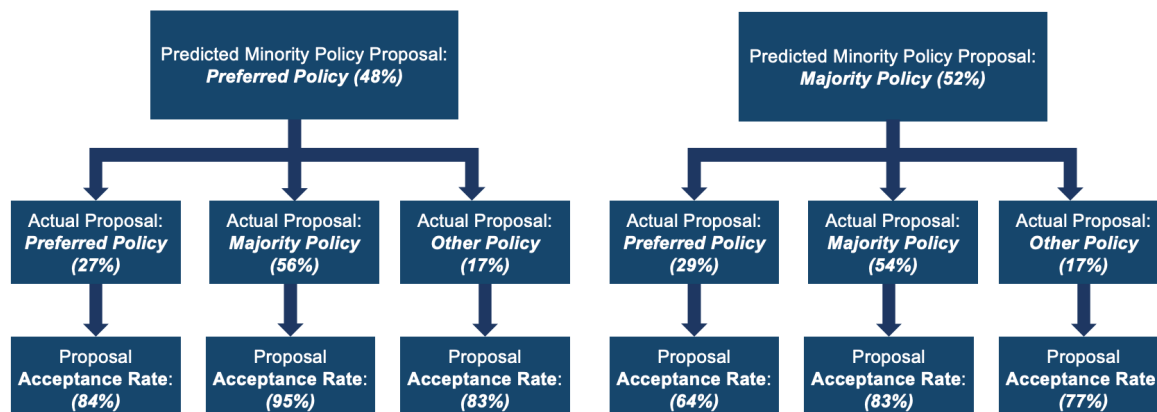
are statistically indistinguishable from those – respectively, 29% and 54% – for minority players predicted to propose the majority’s preferred policy. Across predictions, minority members thus choose the majority policy over half of the time.

Our results, then, indicate a tendency for minorities to over-compromise.²⁸ Why? One reason could be a belief that majorities will drive a tougher bargain. We find that odds of proposal approval rise from 73% to 89% when minority members propose the majority’s preferred policy instead of their own.²⁹ When theory predicts that minorities should propose their preferred policy, there is a 95% chance of proposal acceptance if minorities opt instead for proposing the majority’s policy, 11 percentage points higher than if they had followed the prediction (84%, see Figure 6). Minorities face the lowest odds of acceptance (64%) when they are predicted to choose the majority policy but choose their own policy instead. In this case, following the prediction leads to a 83%

²⁸Interestingly, we find support for the status quo advantage on the pork dimension when we limit analysis to majority members, who allocate themselves significantly more pork where their policy preference matches the status quo than when it does not (\$5.79 versus \$5.15, $p = 0.02$ using a two-tailed t-test.) Thus, the weaker status quo effects on this dimension discussed above may be attributable to the over-compromising behavior of minority players.

²⁹In contrast, majority members face lower approval odds when proposing the minority player’s preferred policy, as the agreement rate drops from 91% to 87%.

Figure 6: Comparing Predicted and Observed Minority Policy Proposals

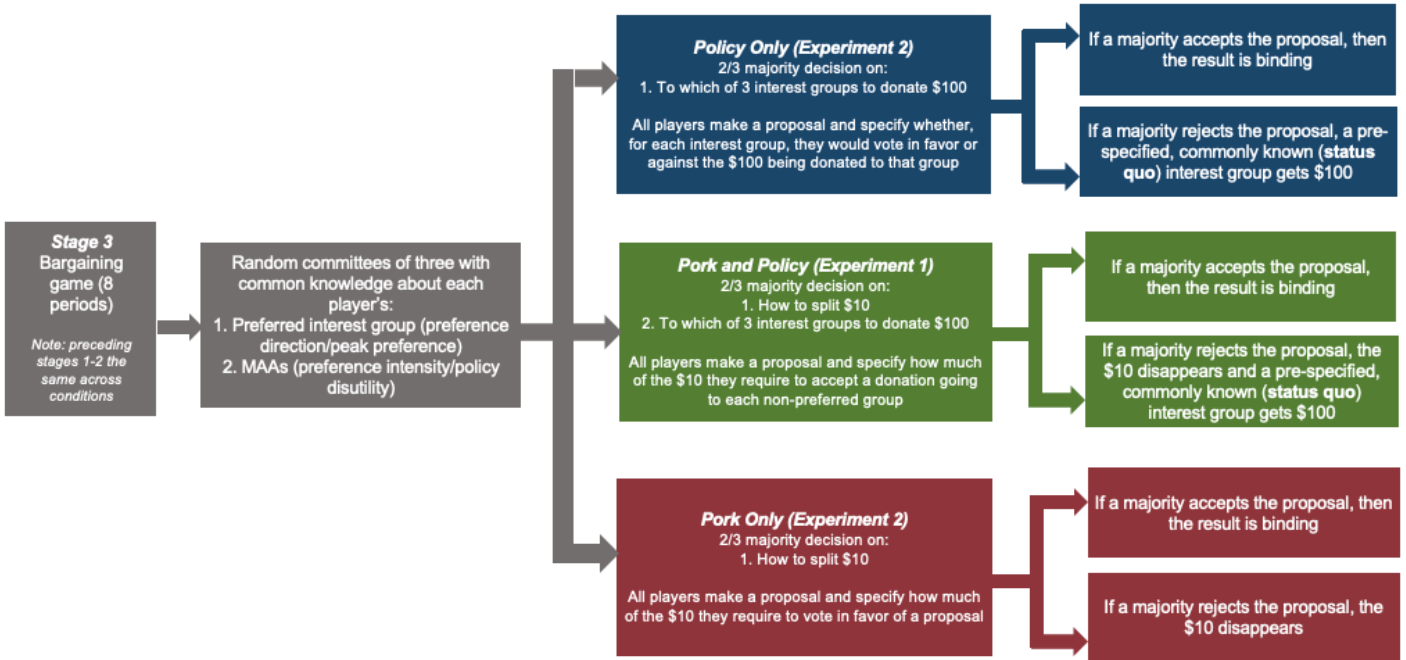


Notes: This figure displays – separately for minority players predicted to propose their preferred policy and those predicted to propose the majority policy – the percentage of minority players who actually proposed their predicted policy as well as the acceptance rate of their proposals. Minority proposal predictions are made according to our theory and are based on players’ relative strength of preferences.

chance of approval. Observed behavior thus provides some support for the notion, even if theoretically irrational, that majorities drive a tougher bargain: notably, even where theory predicts that minorities should propose their preferred policy, proposed policy compromises are more likely to garner the majority votes needed to pass.

Summing Up In summary, Experiment 1 yields significant support for all four of our empirical hypotheses: we find that 1) players are willing to trade off pork for policy; 2) majority players and those whose 3) preferred policies match the status quo use their respective advantages to extract superior bargains; and 4) a majority of minority players compromise on policy when predicted to. While behavior diverges from strict equilibrium predictions – for example, we find that majority players keep less of the budget for themselves and transfer more than predicted, and that minorities compromise more often than anticipated – this divergence is consistent with a large literature showing less-than-perfect adherence to strict equilibrium predictions, and results are generally in line with qualitative predictions.

Figure 7: Bargaining Game Designs: Experiments 1 and 2



Notes: This figure displays the bargaining game designs of the pork only and policy only treatments of Experiment 2, and compares them to the pork and policy game in Experiment 1.

5 Experiment 2: Considering Counterfactuals

The findings we have reported thus far promise to increase extant understandings of the dynamics of pork-barrel politics. However, current debates also focus on whether bargaining over two dimensions should be *allowed*. Critical to these debates are questions over whether the practice “greases the wheels” of the bargaining process, and if certain groups benefit differentially from the ability to compromise. In experiment 2, we shed additional light on the impact of pork-barrel politics by considering counterfactuals advocated by many where bargaining is only permitted over one dimension: pork or policy.

Experiment 2 contained two treatments (see Figure 7). In our *Pork Only* treatment, subjects bargained over \$10 without any contributions to interest groups. In our *Policy Only* treatment, they bargained over a \$100 donation to an interest group without any \$10 endowment at play.³⁰ Everything else about experiment 2, including stages 1 and 2 which

³⁰We conducted six sessions with 87 subjects of the *Pork Only* treatment and three sessions with 48 subjects of the *Policy Only* treatment. See Appendix Table A2 for a full list of experiment conditions and the number of experiment sessions and subjects for each.

preceded the bargaining game, was unchanged from experiment 1. In what follows, we present results from experiment 2, contrasting them with experiment 1 results to compare two- and one-dimensional bargaining dynamics. For conciseness, we present our empirical expectations and their rationale alongside results.

5.1 Comparing Two- and One-Dimensional Bargaining

Does the ability to negotiate over two dimensions “grease the wheels” of the legislative process, as some have argued (Evans, 2004; Lazarus, 2018)? To evaluate the effects of pork-barrel bargaining on the likelihood of reaching policy compromises and on the distribution of pork, we compare the *Pork and Policy* game in experiment 1 to, respectively, the *Policy Only* and *Pork Only* games in experiment 2.

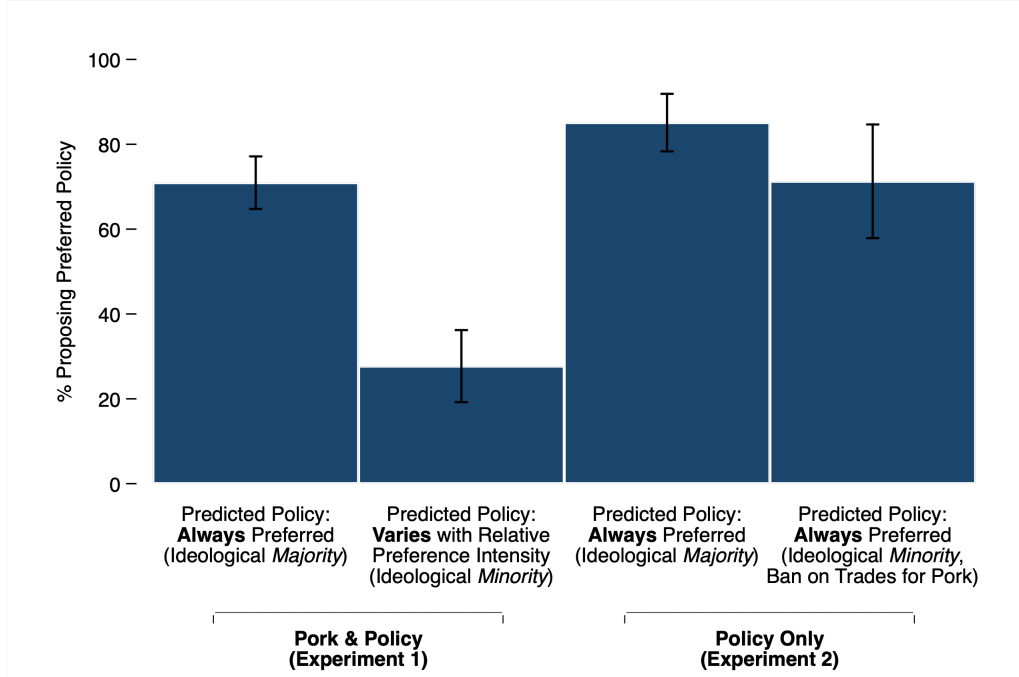
First, we consider effects on policy. In experiment 1, we find support for our prediction that pork can facilitate policy compromise: under certain conditions, minorities compromise on policy and accept a pork transfer (see Section 4.4). Where policy is decoupled from pork as in our *Policy Only* treatment, such transfers and tradeoffs are not possible, and thus we expect that minorities will see less of a reason to compromise on policy.

We find that minority subjects are substantially less likely to propose their preferred policy in the *Pork and Policy* treatment (27%) than in the *Policy Only* treatment (71%).³¹ While we observe the same pattern with majority players, the difference between treatments is of much lesser magnitude (14%, from 71% to 85%) as compared with minority players (44%, see Figure 8 and Appendix Table A10). We thus observe an overall increase in willingness to compromise on policy in two- as compared with one-dimension bargaining, particularly for minority players. These results are consistent with expectation and indicate that pork does indeed facilitate policy compromise.

Second, we evaluate how the presence of policy affects individuals’ demands for pork. Where both pork and policy are on the table, our theory predicts that subjects should in certain cases forego pork when their preferred policy is proposed. We accordingly expect players to demand more pork on average in one-dimensional bargaining where it

³¹Two-sample two-tailed test of proportions shows a z statistic = 6.65, Pr=0.00.

Figure 8: **How the Presence of Pork Affects the Prospect of Policy Compromise**



Notes: This figure displays how often subjects proposed their preferred policy for relevant groups. Proposers in the ideological majority are always predicted to propose their preferred policy, as are proposers in the ideological minority when there is no pork for which they can trade their policy (*Policy Only* treatment). Only proposers in the ideological minority where trades for pork are allowed (*Pork and Policy* treatment) are potentially expected to compromise on policy by proposing a non-preferred policy (in exchange for a pork transfer), which in turn depends on their strength of preferences relative to voters. Standard errors are clustered at the individual level and we display 95% confidence intervals.

is impossible to trade pork for policy.³²

We observe that subjects in the *Pork Only* game demand on average \$2.66 of the \$10 budget, significantly more than subjects in the *Pork and Policy* treatment demand to vote in favor of preferred policies (\$1.99) and about the same as they demand to vote in favor of non-preferred policies (\$2.68).³³ A substantial portion of subjects in the *Pork Only* game demand \$3 of the \$10 endowment, indicating that when subjects only negotiate over pork they are more likely to ask for a share that would result in an equal split between their partners and themselves (see Figure 9).³⁴ Demanded shares of pork to vote for preferred

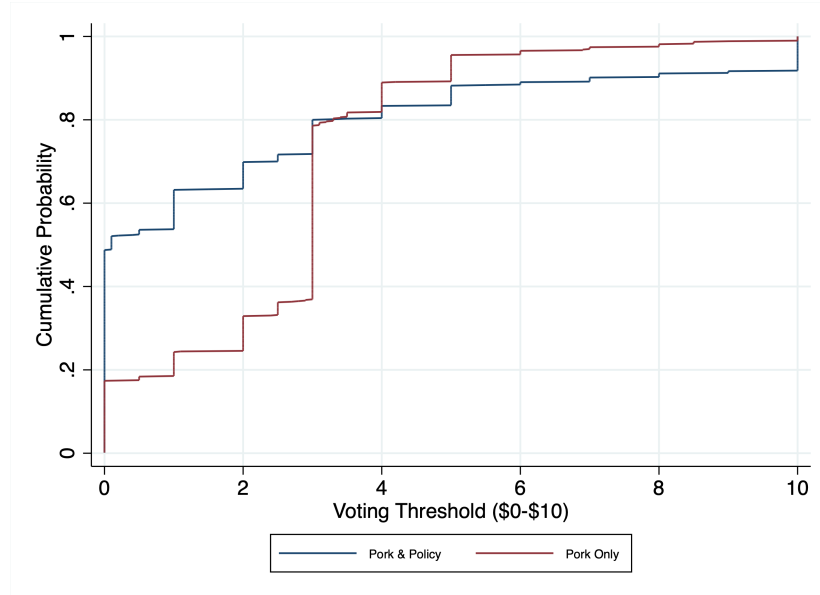
³²According to the subgame perfect Nash equilibrium, players in the *Pork Only* treatment should accept any positive pork transfer, as rejection means no pork. However, from the extant literature (see Section 4.3) and experiment 1, we know that subjects rarely accept such highly unequal divisions.

³³Two-tailed t-tests yield a t statistic = 4.98, Pr=0.00 for the comparison with preferred policies and a t statistic = 0.15, Pr=0.88 for the comparison with non-preferred policies. See Appendix Table A11.

³⁴Consistently, as we show in Appendix Section 4, a greater willingness of players in the *Pork and Policy* game, as compared with the *Pork Only* game, to accept no pork (\$0) when their preferred policy

policies in the *Pork and Policy* game are not only lower overall (see Figure 9 and Appendix Table A11), but especially for minority players, who demand on average \$1.02 less than in the *Pork Only* game – as compared with a decrease of \$0.58 for majority players. We thus find that subjects demand comparatively less pork in two-dimensional bargaining only when they prefer the proposed policy, which is precisely when we would theoretically expect them to forego pork. Further, this difference is particularly magnified for minority players, who we would expect to trade pork for preferred policy most often.

Figure 9: **How the Presence of Policy Affects Demands for Pork**



Notes: This figure displays subjects’ stated voting thresholds – the required amount of pork for a vote in favor of the relevant proposal – where pork and policy were both on the table (*Pork and Policy*, experiment 1), as compared with when only pork was on the table (*Pork Only* treatment, experiment 2). In the *Pork Only* treatment, subjects stated thresholds for a budget division only; we compare their thresholds with subjects’ thresholds for preferred interest groups in experiment 1 (*Pork and Policy*). A Kolmogorov-Smirnov test yields a significant difference in distributions ($p < 0.001$).

In sum, two-dimensional bargaining appears to increase the likelihood of compromise: where both pork and policy are on the table, subjects are more willing to compromise on policy and to demand lesser shares of pork for a favorable vote. One relevant, additional measure of whether pork “greases the wheels” is to consider whether its inclusion results in higher proposal agreement rates. While one might expect that it would, especially in light of a greater willingness to compromise, it is important to note that players’ utilities is proposed results in a higher frequency of one-way splits (all \$10 of pork allocated to one person).

are common knowledge in our study; our theory would therefore predict no differences across bargaining games, as proposers should in all cases be able to compute the optimal offer that will result in a partner voting in favor of the proposal.

We find that approximately 86% of proposals are accepted in both two-dimensional (*Pork and Policy*) and one-dimensional (*Policy Only* and *Pork Only*) games, with no significant difference between treatments. Effects of pork on agreement rates may thus be greater when information about others' preferences is imperfect, which we rule out by design in our common knowledge experiments.

A final, additional question relevant to normative debates over the banning of pork-barrel bargaining concerns whether certain groups benefit comparatively more from its presence. Experiment 1 results indicate that those in the ideological majority and whose preferred policies match the status quo extract better bargains when both pork and policy are on the table (see Section 4.4). However, it is members of an ideological minority who we would theoretically expect to be the most active traders of pork and policy (see Table 3 and H4). Our theory thus predicts that it is members of the *minority* who would be hurt most in a counterfactual world with a ban on pork-barrel bargaining.

We have already shown that minority members compromise in the majority of cases predicted in our *Pork and Policy* game, and are more likely to compromise in two- as compared with one-dimensional bargaining. Proposal acceptance rates provide further evidence indicating that minorities benefit most from pork-barrel politics: their odds of approval rise from 66% in the *Policy Only* game to 83% in the *Pork and Policy* game.³⁵ While majority members are advantaged in pork-barrel bargaining, then, our theory and empirical findings indicate that decoupling pork from policy would exacerbate the majority advantage and further damage the standing of members of the minority.

6 Discussion

Our results presented thus far elucidate pork-barrel bargaining dynamics and their overall and distributional consequences. They also shed insight into the motivating questions laid

³⁵The corresponding increase for majority members is smaller, from 90.5% to 98.4%.

out in Table 1. Consistent with theoretical expectation, we find that individuals are willing to trade pork and policy in ways that correspond to their policy preference intensities, that majority members and those who fare better under a status quo policy extract superior bargains, and that banning the practice would undercut minority members' ability to compromise and thus disproportionately hurt their bargaining prospects. In Appendix Section 4, we conduct supplementary analyses and show that results are robust to regression specifications including period and session fixed effects. We accordingly dedicate the remainder of this section to briefly considering two additional questions which carry important implications for how we should interpret our experimental findings.

First, how does the revelation of information on political preferences affect pork-barrel bargaining dynamics? Given that bargaining often occurs in politically polarized settings as is the case with our context of study, the present-day United States, one might imagine that political preference information significantly impacts bargaining. Second, what are the implications of using naturally-occurring political preferences to study pork-barrel bargaining? As explained in Section 2.1, experimental studies typically use artificially-induced policy preferences, which effectively reduces the bargaining space to a single, monetary (pork) dimension. We thus consider whether one of our central experimental innovations affected bargaining outcomes.

We investigate the role of information in two ways. First, to evaluate to what extent the revelation of information alone matters for bargaining outcomes, we conducted a *Pork Only No Information* bargaining game which exactly mirrored the *Pork Only* bargaining game except for a single design feature: subjects received no information about their partners' political preference directions or intensities prior to bargaining (see Figure 7). Because subjects in both cases are not bargaining over policy, but only pork, comparing outcomes across the two conditions allows us to more effectively isolate the role of information in-and-of-itself on bargaining absent other considerations. Second, we conducted a *Conditional Pork and Policy* bargaining game which was the exact same as the *Pork and Policy* game of experiment 1, except that subjects could condition their voting thresholds not just on a specific policy *proposal*, but further based on *which proposer* put forward

the proposal. For example, a subject not only stated how much they needed to be paid in order to vote in favor of a policy on the left, but how much they would need to be paid to vote in favor of a left policy if the proposer was partner A, partner B, or themselves. Comparing outcomes across these latter two games, then, allows us to consider if dynamics differ when, as in the real world, voting can be conditioned on proposer identity.

We find that proposal acceptance rates are lowest in the *Pork Only No Information* game (79%), highest in the *Conditional Pork and Policy* game (92%), and fall somewhere in between for the *Pork Only* (86%) and *Pork and Policy* (88%) games, patterns that hold across both minority and majority proposers (see Appendix Table A12).^{36,37} One might have expected that the revelation of information, and allowing individuals to condition thresholds on proposers' identities, would make subjects less likely to bargain in good faith in a polarized setting and thus hinder coalition formation. However, our findings suggest to the contrary that subjects put information on others' policy preferences to a positive use: to identify with whom to form a coalition and share pork.

Finally, we consider the impact of using naturally-occurring political information. To do so, we replicate the design of the only other experimental evaluation of Jackson and Moselle (2002), by Christiansen et al. (2014), who used artificially-induced political preferences. In our *Pork and Induced Policy* game, subjects bargained over a policy decision of where to place a fictitious bus stop: left, middle, or right. They were assigned a "preferred" location as well as monetary disutility values (equivalent to MAAs) for each non-preferred location. To keep treatments as comparable as possible, subjects were assigned preferred locations and disutility values from real subjects who had completed the *Pork and Policy* game.³⁸ We are thus able to compare bargaining dynamics among subjects with the same preference directions and intensities, except that in one case these intensities were naturally-occurring and in the other case they were artificially induced.

³⁶Voting thresholds in the *Pork Only No Information* and *Pork Only* games, and the *Conditional Pork and Policy* and *Pork and Policy* games, are remarkably similar (see Appendix Section 4.3.2).

³⁷The acceptance rate in the *Policy Only* game was 87%; as discussed in Section 5.1, it was much lower for minority proposers who faced little incentive to compromise on policy where there was no pork.

³⁸Besides inducing preferences, we kept group compositions identical to those in the *Pork and Policy* sessions to control for experience and learning.

We find firstly that proposal agreement rates are significantly higher in the *Pork and Policy* game (88%) than in the *Pork and Induced Policy* game (80%).³⁹ This offers additional support for the notion, discussed above, that information on real policy preferences aids coalition formation. Second, we observe that voting thresholds for non-preferred policies are higher in the *Pork and Induced Policy* game than the *Pork and Policy* game (see Appendix Figure A15). We cannot say definitively why we observe this difference. However, one possibility for which we find some support is that real-world consequences moderate the behavior of subjects with weak policy preferences, who state lower thresholds than they would with artificial preferences because they view a real-world donation as a positive outcome, even if it goes to a non-preferred interest group.

7 Conclusion

Today, policymakers and scholars are engaged in an active debate over the merits of pork in politics, with some pushing for a permanent ban on earmarks and others arguing the reverse on the grounds that earmarks can reduce partisan gridlock and facilitate compromise (Lazarus, 2018). However, we still know little about how pork and policy interact in legislative bargaining, or who stands to gain or lose from potential regulation of the practice. Our experiment is a first attempt at incorporating elements of realism to the study of budgetary and policy negotiations where field studies are non-existent. While we do not claim that our experiment perfectly resembles a natural setting, we believe it brings us closer to the real-world phenomena that we are studying.

Several of our results show support for the game theoretic predictions in our pork and policy bargaining games. Notably, majority members and players whose preferred policy matches the status quo typically propose their preferred policy. More substantively, we find that subjects are willing to make budgetary concessions to implement preferred ideological choices and that our individual preference elicitation method largely correlates with strategic bargaining behavior. The present study is also the first to behaviorally measure ideological position and strength of preferences and investigate how such measures

³⁹Two-tailed t-test yields a t statistic = 3.20, Pr=0.00.

correlate with behavior in a relevant strategic domain.

Does pork-barrel politics grease the wheels of the legislative process, as many have claimed (Evans, 2004; Lazarus, 2018)? Who benefits more from pork-barrel politics? Our experimental investigation shows that agreement rates are virtually identical across treatments in which real ideological preferences are displayed regardless of whether subjects negotiate only a budget division (pork), only a policy choice, or both. While one may argue that this result runs counter to the common presumption that a two-dimensional bargaining space greases the wheels of the bargaining process, this is not so, since demands for budgetary shares are much lower compared to the pork only treatment and minority policies are often implemented. We find that the impossibility to negotiate in a two-dimensional space negatively affects political minorities far more than political majorities as evidenced by minority players' lower budgetary transfers, lower chances of proposal approval, and lower likelihood of enacting their preferred policies. Moreover, minority members tend to propose the majority's policy more often than prescribed by the game-theoretic predictions in order to enhance their approval odds. In light of these findings, one can speculate that majorities may seek an advantage by separating the bargaining process for each dimension so that minorities lose the ability to compromise.

There are two unanticipated results in our study that underscore the efficacy of information on ideological preferences in reducing bargaining impasses. The first is that when subjects negotiate on two dimensions and preferences over policy are artificially induced by the experimenter, voting thresholds are higher which can be interpreted as a lower willingness to compromise. Second, agreement rates are lower in the pork only treatment absent information on political preferences. Both unexpected findings suggest that information on policy preferences may help solve the coordination problem of deciding with whom to partner – even if policy decisions are not at stake.

In our theory and experimental design we have abstracted away from several aspects which are quite relevant outside the laboratory. Would communication, which has been shown to increase proposer power in the Baron and Ferejohn (1989) game, still do so where policy was at stake? Would minorities benefit? If subjects could revise their stated

preferences, would minority members misrepresent themselves as majority members to reap more pork? We leave these and other relevant extensions for future work.

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