Bargaining over a New Welfare State*

A Model of the Regional Distribution of New Deal Funds

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Abstract

The goal of this paper is to develop an estimable model of President-Congress bargaining in the US, and to use this model to provide a better understanding of the objectives behind the New Deal. In the model, the distribution of federal funds across regions of the country is the outcome of a bargaining game in which the President acts as the agenda-setter and Congress bargains over the final shape of the spending bill. For any given preferences (of the President) and any distribution of seats in Congress, the model delivers a unique predicted allocation. Combined with data on New Deal programs, we use this to estimate the objectives of the Roosevelt administration. The results indicate that economic concerns for relief and recovery, though not necessarily for fundamental reform and development, largely drove the New Deal spending, and that political concerns also mattered but to a lesser extent. In addition, our model indicates that a less politically minded President would not have been constrained by Congress the way Roosevelt was.

Keywords: Political Economy, Legislative Bargaining, New Deal, US Congress, Public Spending.

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1 Introduction

In this paper, we develop a model of legislative politics with the goal of understanding new public spending programs in the US. We are interested in times of major change, in which the President functions as the de-facto agenda-setter and Congress bargains over the final shape of the bills. In particular, we use the model to examine how regional characteristics and interests shaped New Deal spending. We do so by carefully considering the constraints faced by the President as a consequence of the separation of powers and of the difference between his objectives and those of the members of Congress. We then combine our model’s insights with data on New Deal programs. Our empirical analysis focuses on the motivation behind the crafting of the spending bills by the Roosevelt administration, and on the way the constraints imposed by the legislative process restricted the ability of the administration to achieve their objectives.

The motivations behind the actions of politicians, a topic of intrinsic interest for political scientists, has received significant recent attention by theoretical political economists. For instance, key questions in the political agency literature center around the issue of whether, and if so how, the political process selects political decision-makers with the right intentions (and skills). In a more general sense, the entire formal political economy literature is built on the idea that governments cannot be treated as simple welfare-maximizers. Instead, in order to understand economic and public policy outcomes, the motivation of political decision-makers, and the constraints they face, have to be carefully analyzed.

In the US, discussions about “what motivates government” naturally center around the period and programs described as the New Deal. This period was, by most accounts, the birth of the US welfare state. It was an era of unprecedented growth in total government spending, as well as in the scope of activities performed by the federal government. In the mid 1920’s, just before the Great Depression and the New Deal, total federal (non-military) spending was approximately equal to 3 percent of GNP, while in the mid 1930’s this figure had increased to about 10 percent. The support for state and local government expenditures from the federal level also increased dramatically. Earlier in the 20th Century, less than one percent of state and local revenues came from the federal government, while in the late 1930’s about 15 percent of state and local revenues were due to federal aid. In addition, it created many of the government programs and structures, such as Social Security and various agricultural programs, that form the basis of the public sector in the US still to this day.\footnote{These values are taken from Wallis (1985) and Wallis (1998).}

\footnote{See, for instance, the work of Besley (2004, 2006) or Callander (2005).}
The New Deal was controversial already from the beginning, and has stayed controversial ever since. The attacks have come from the left as well as from the right, on a number of different topics and from a number of different angles. Among many other critical accounts, the New Deal has been criticized by Zinn (1966) and Bernstein (1968) for being too conservative, by Powell (2003) and Cole and Ohanian (2004) for prolonging the Great Depression, by Libecap (1998) for instigating a lasting system of state intervention in agricultural markets, and by Flynn (1934) for being essentially a fascist undertaking.

Of particular relevance here is the official line of “the three R’s” (relief, recovery and reform) emphasized by the New Dealers as the motivation behind this increase in federal spending and federal aid at the local level. Roosevelt’s critics accused him of using national funds in order to reward Democratic states as well as to gain popularity in potential swing states, rather than using the funds to promote the official goals. Economic historians and public choice scholars have long been interested in this debate about the motivation behind the New Deal, and the determinants of the New Deal spending allocation. As stated by John Wallis, the question of focus in this literature has been:

Did Roosevelt and the New Dealers allocate money between states to achieve their stated goals of relief and reform by giving money to states with lower employment and lower incomes, or did they promote their own interests and allocate more money to states that were politically sensitive? [Wallis, 1998]

The empirical literature on this topic started with Reading (1973), who developed a simple model in order to test whether the New Deal spending pattern was in fact consistent with a focus on reform and relief/recovery. The second now-classic empirical study of the motivations behind the New Deal spending, Wright (1974), built on the analysis of Reading to investigate a potentially political motive behind the New Deal. These two studies generated a significant amount of following research. Recently, Anderson and Tollison (1991) included a number of variables intended to capture the role of Congress in the determination of the New Deal allocation.

These studies suggest that the regional distribution of the major New Deal programs might have been politically rather than economically motivated. However, in a series of papers, John Wallis (1984, 1985, 1998) derives results that depart somewhat (though not completely) from this view. Wallis takes the position that political concerns did matter, but that the distribution of New Deal funds was primarily motivated by economic concerns. However, Wallis also shows that the economic reasons behind the programs interacted with political motives, making the different possible objectives hard to disentangle.3

3This view is reinforced by the recent joint work of Fishback, Kantor and Wallis (2003).
To summarize, previous studies provide support for the idea that political purposes probably influenced the spending pattern of the New Deal. There is, however, no consensus on the importance of political calculations, or on the influence of Congress on the allocation of funds. Moreover, all these studies base their conclusions on straightforward empirical assessments of the influence that given regional characteristics had on the distribution of funds. As such, they do not explicitly take the mechanisms determining the equilibrium allocation into account. A parallel, but important concern, is that previous studies do not distinguish the effects of spending across different kinds of programs. A formal treatment of this topic can therefore provide the additional structure necessary for the interpretation of the differing and sometimes non-comparable previous research.4

In our model, the distribution of federal funds across different regions of the country is the outcome of a bargaining game involving the President and the members of Congress. Members of Congress are divided into (three) regions, and are only interested in securing the largest possible amount of funds for their region. The President, however, has a potentially wider set of objectives, as he is elected as a representative of the country as a whole, rather than any particular region. Guided by the previous literature on New Deal spending, we assume that the President may have both economic concerns, for the provision of Depression relief and for the reform of poor areas, as well as political objectives such as reelection or partisanship.

For any set of weights assigned to these different objectives of the President, and any given distribution of seats in the Congress, the model delivers a unique predicted outcome, i.e. a unique predicted distribution of funds over the regions of the country. We combine this theoretical result with the actual distributions for several New Deal programs, in order to determine the preferences of the Roosevelt administration. We link theory to data and estimate the model’s parameters using a simple minimum distance approach. The results indicate that economic concerns (of the President) for relief and recovery, though not necessarily for fundamental reform and long-run development of poor areas, largely determined the allocation of funds to the different regions of the country. The results also indicate that political concerns mattered, in particular concerns for reelection, though to a lesser extent.

Our model takes into account some of the key institutional features of the US legislative bargaining game, such as the two-chamber structure of Congress. Therefore, in addition to the contribution it hopefully makes to the New Deal debate, this paper can be viewed as an attempt to place formal models of legislative politics in a more concrete setting. The bulk of theoretical (formal) political economy research on legislative politics is quite abstract, with limited institutional detail. Clearly, this previous research has generated very valuable

4This is more line with the work of Fleck (1999, 2001, 2008) and Strömberg (2004).
general insights, e.g. on the role of constitutions and agenda-setting power for legislative outcomes. In contrast, our approach provides guidance for understanding the outcome of particular legislative sessions or specific periods of major reform.\textsuperscript{5}

In the rest of the paper, we first describe extensively the formal political model, then derive a number of theoretical results characterizing legislative decision-making in the US Congress, and the outcome of the interaction between the President and Congress. All of this is done in Section 2. In Section 3 we discuss our regional classification of the US in the 1930s. In Section 4, we describe the data, and in Section 5 we provide an overview of the empirical approach as well as the estimation results. Finally, Section 6 contains a conclusion as well as a discussion of potentially interesting extensions.

2 The Political Model

2.1 Overview

Modeling Goals  It is far from obvious what a good model of legislative politics, applied to this particular context, should look like. At least three existing frameworks come to mind as related and potentially able to speak on the questions posed here. The first of these is the legislative bargaining literature, centered around the seminal contribution of Baron and Ferejohn (1989) and its extensions.\textsuperscript{6} The second is the agenda-setter model developed by Romer and Rosenthal (1978, 1979) and extended in the veto bargaining framework by, among others, McCarty (1997), Groseclose and McCarty (2000) and Cameron (2000). The third is the pivotal politics model developed by Krehbiel (1998), a theoretical framework based on the idea that, for any particular issue, a pivotal voter (legislator) can be identified, and the final policy outcome hinges critically upon her preferences.

These and other related approaches provide insights of significant value for understanding legislative politics, in the US and elsewhere. However, none of these frameworks contain the level of institutional detail necessary to quantitatively interpret specific legislative settings, such as the dramatic period in 1933 after the landslide victory of FDR and the Democrats. Hence, we develop a new model of legislative politics in the US that is institutionally richer but less general than existing frameworks.\textsuperscript{7}

\textsuperscript{5}Perhaps the most closely related papers in this sense are the context-specific studies by Alston and Mueller (2006) and Knight (2004, 2005).
\textsuperscript{6}Most notably, by Banks and Duggan (2000, 2006) and Baron (1996).
\textsuperscript{7}Krehbiel’s (1998) framework contains more institutional detail than the other models. It is different in purpose and lacks some of the features that we consider important for the particular application in this paper. Still, we do think of the pivotal politics model as the work most closely related to the model we develop here.
What are then the key institutional features of US legislative politics? We view the following features, ranked in order of deemed importance, as sufficient to give a good characterization of the formal institutional environment: (i) There are two chambers with different distribution of seats across states, and law-making follows a sequential procedure, with the House of Representatives moving before the Senate on spending bills, (ii) The President is elected nationally while Congress members are elected by local constituencies (iii) Disagreements between the two chambers are resolved in a conference committee, (iv) The President has legislative veto power, (v) Committee and subcommittee chairs, as well as Congress members with formal “leadership positions” (such as the majority leader and the speaker of the House), can be quite influential and often have the power to stop legislation from happening, and (vi) There is a filibuster option in the Senate. To this, an informal institutional feature should be added: the fact that the President often, when it comes to major reform, functions as the de facto agenda-setter, despite not having such a role assigned constitutionally.

While all relevant, trying to include all of these institutional features in an estimable model proves to be very difficult. Here, we model explicitly the first three of the listed features. In addition, we model the President as the agenda-setter. Furthermore, including the fourth feature (veto power) in the model would have no effect on the outcome. The two latter features are not formally modeled. We believe them to be less important for understanding the nature of the spending allocation across broad regions, though we certainly acknowledge that there are other questions for which they would be crucial. In particular the role of committees (v) is clearly an important feature in many other settings.\(^8\) In addition, the role of influential individual legislators (leaders) could help with the interpretation of the allocation of spending at a more detailed regional level than is the focus of this paper.\(^9\)

**Assumptions on Preferences** When it comes to the preferences of the President and the Congress members, we assume that the decision to implement a program and the decision about the allocation of spending can be analyzed separately, and we do not explicitly analyze preferences over the generation of revenue. That is, we focus exclusively on the spending side of the New Deal, and therefore implicitly assume that any preferences that the President and the legislators might have had over the tax collection (and over budget deficit levels) did not interact with their preferences for the shape of the spending. This is a significant simplification, but one that is, at the very least, in line with much of the economic history

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\(^8\) A number of studies have extensively analyzed the role of committees. These studies, however, are focused primarily on explaining the existence of committees, rather than predicting their effects. Among the most influential studies are Shepsle and Weingast (1987a, 1987b), Gilligan and Krehbiel (1987), Weingast and Marshall (1988) and Epstein and O’Halloran (1999).

\(^9\) For instance, Wallis (1998) ascribes the large share of New Deal funds that went to Nevada to the influence of Key Pittman, President Pro Tempore of the Senate 1933-1940.
literature on the topic.

Regarding the members of Congress, we model them as “perfect representatives” of their constituencies, with preferences defined (only) over the allocation received by their states. Given the assumption that the size and shape of the spending bill can be analyzed separately, this still allows for the Congress members having (ideological) preferences regarding the size of public spending. It does mean, however, that once the size of the spending is determined, the legislators bargain only with the welfare of their own region in mind. We view this assumption in the spirit of Mayhew’s (1974) now-classic conclusion that members of Congress are primarily driven by reelection concerns, and therefore seek a tight link to their own constituencies. The assumption is also in line with the legislative bargaining literature on distributive politics initiated by Baron and Ferejohn (1989).

Since the parameters of the President’s utility function are at the core of what is to be determined in our empirical analysis, the details of this utility function will be discussed more extensively both in the theoretical and empirical sections. For now, simply note that we allow for the welfare of all regions (citizens) to enter the President’s utility function. This difference between the utility functions of the legislators and the President is meant to reflect the feature that the nationally elected President and the locally elected Congress members represent very different constituencies. We do not claim that this representation captures everything that mattered during the implementation of the New Deal. We do, however, believe that our setup captures many of the most important aspects that follow from the structure of Congress and the conflict of interest between the President and the legislators.

**Dividing the US into Regions** Our model divides the country in three regions. Given our focus on the 1930s, this classification achieves the best possible balance between realism and tractability. States within each of the regions were particularly homogeneous at the political level, which makes it possible to associate regions of the country with voting blocs in the Congress.

As a related comment, we view our approach to be in line with the work of David Mayhew (1993) and Keith Krehbiel (1998), who downplay the role of parties in US politics. Our empirical analysis does use a strong correlation between regions and parties, but the division into three voting blocs means that model is not one in which outcomes are necessarily driven by party politics. We do not, however, try to make the claim that parties never matter, and point out that we could modify the model to include purely partisan politics.\(^\text{10}\)

\(^\text{10}\)For a criticism of the views of Krehbiel and Mayhew, and for a theory of party-based politics in the US, see Cox and McCubbins (2005).
2.2 Formal Setup

Payoffs We model the allocation decisions within each type of program as a separate bargaining game. In this game, the President acts as an agenda setter and Congress determines the final division of a fixed amount of resources. The set of congressional players $\mathcal{I}$ is given by three groups of states (regions), $\mathcal{I} = \{\text{West}, \text{North}, \text{South}\}$. An outcome of the bargaining game $x$ is simply a division of a given amount of resources among the three regions, $x = (x_{W}, x_{N}, x_{S})$. The total amount of resources is normalized so that $\sum_{i} x_{i} = 1$. Each group $i \in \mathcal{I}$ holds a fraction $q_{i}$ of the total seats in the House and a fraction $p_{i}$ of the seats in the Senate, and no group has an absolute majority of seats in either chamber. The utility function of region $i$ is given by:

$$u_{i}(x) = x_{i} \; \forall i \in \mathcal{I}.$$  

The President’s preferences over the allocation of resources are represented by the utility function

$$f(x, t) : \Delta^{2} \times \mathbb{R}^{3} \rightarrow \mathbb{R},$$

where the vector $t = (t_{i})_{i \in \mathcal{I}}$ represents the president’s relative inclination to assigning resources to each of the regions. We assume that $f(x, t)$ is continuous in $x$, for all $t$.

Timing First, the President proposes a split of the total resources going into a particular program, $x \in \Delta^{2}$. The House then evaluates the proposal as follows: with an initial yes/no vote it determines whether to pass the bill on unchanged. If the proposal passes unchanged, the Senate takes on the proposal. Otherwise, a House member is randomly selected to renegotiate the allocation, by proposing an amendment $x' \in \Delta^{2}$. Each member has the same probability of being recognized. An amendment proposal is a take-it-or-leave-it offer that one group of states makes to the rest of the chamber. The House votes on the proposed amendment, a positive vote resulting in the bill being passed on to the Senate, a negative vote implying the bill is scratched. The Senate follows a similar procedure, where the text approved by the House represents the initial proposal. If the Senate approves the initial proposal, then the outcome is directly implemented. However, if the Senate modifies the initial proposal, bargaining in the Conference Committee leads to a convex combination of the House and Senate bills being passed.

In more precise terms, the president’s strategy set consists of all possible proposals. A strategy for a congressional player is a more complicated object. It consists of the following: (i) a mapping from proposals into a binary vote, (ii) a history independent amendment proposal and (iii) a function from amendments into binary votes. Congressmen are assumed to always vote for their preferred option, regardless of whether they could be pivotal.
2.3 Equilibrium Analysis

Proceeding by backward induction, we first analyze the Senate bargaining subgame following the rejection of the House bill. At this stage, a senator is randomly selected an amender. When a bill $x$ coming from the House is introduced in the Senate, each congressional player $i$ compares her payoff from voting in favor of the bill $x_i$ to the expected gains from rejecting it. The extent of these gains is equal to the probability $p_i$ of a senator from her own group $i$ being selected as a proposer in the subsequent amending stage. We prove this formally in Proposition 1.

**Proposition 1 (Senate Reservation Utilities)**

Each group $i$ has a reservation utility in the Senate equal to its share of seats $p_i$.

**Proof.** Denote the bill that comes into the Senate by $x$. If the Senate modifies the bill to $x'$, the outcome will be $(x + x')/2$, while it will be equal to $(x + x)/2$ if it doesn’t. Therefore, at the amending stage, senators only care about the outcome of the Senate bargaining process. Since the Senator recognized to amend can make a take-it-or-leave it offer to the rest of the chamber, she can propose an allocation in which her group keeps the entire amount of resources. In this case group $i$ obtains a payoff of 1, while it obtains a payoff of zero otherwise. The probability of being recognized is equal to the group’s share of seats in the Senate $p_i$, which completes the proof. ■

Since no group holds a majority of the seats in the Senate, the bills passed by the House that are also approved by the Senate are those in which at least two groups receive more than their continuation values. At the same time, the bargaining process in the Senate may yield a different outcome from that of the House because groups are represented in different proportions.

The next step is to analyze the game in the House following a rejection of the President’s proposal. A representative who is selected to propose holds all the bargaining power within the House. In effect, this amender chooses between two options: either propose an allocation that will be also approved by the Senate, or choose a proposal that will be amended in the Senate. The optimal choice in the former class consists of acquiring the support of the group with the lowest continuation value in the Senate to form a coalition. The best option in the latter class is to keep the entire amount of resources and let the Conference Committee determine the final bill.
Proposition 2 (Proposer Payoff - House)
The proposer’s payoff in the House is given by:

\[
\max\left\{ 1 - \min_{j \neq i} p_j, \frac{1 + p_i}{2} \right\}.
\]

**Proof.** Let \( i \) be the representative chosen to amend the President’s proposal. The maximum value group \( i \) can achieve by proposing an amendment that will be approved by the Senate is \( 1 - \min_{j \neq i} p_j \). In fact, all representatives will vote in favor of the amendment, while senators from groups \( j \neq i \) will vote in favor only if \( x_j \geq p_j \). Group \( i \) then finds it optimal to acquire the support of the group with smallest senate delegation.

If group \( i \) proposes an amendment that will not be approved by the Senate, the bill approved in the Senate is independent of what happens in the House. Let \( x \) denote the proposed amendment. Therefore, group \( i \) has an expected payoff of \( p_i \) at the Senate stage and of \( x_i \) at the House. The outcome of the Conference committee is simply \( (x + p) / 2 \). Hence, the amending representative will propose a bill \( x \) which gives him the entire amount of resources in the house, thereby obtaining a payoff of \( ((x_i = 1) + (x_i = p_i)) / 2 \).

Furthermore, it turns out that the optimal strategy is always the same, i.e. independent of the amender’s identity:

**Proposition 3 (House Amendments)**
For any distribution of seats, all Representatives propose an amendment that will be approved by the Senate.

**Proof.** For any \( p \in \Delta^2 \) such that \( p_i \neq p_j \forall i,j \), it is the case that \( 1 - \min_{j \neq i} p_j > (1 + p_i) / 2 \). This can be shown by letting the proposer be a member of group \( i \) and defining \( p_H \triangleq \max_{j \neq i} p_j \) and \( p_L \triangleq \min_{j \neq i} p_j \). The following inequalities can then be established:

\[
1 - \min_{j \neq i} p_j - (1 + p_i) / 2 = p_i + p_H - (1 + p_i) / 2
= (p_H + (1 - p_L - p_i) - 1 + p_i) / 2
= (p_H - p_L) / 2 > 0.
\]

That is, following rejection of the President’s proposal, the group selected as an amender targets the group that holds the smallest share of seats in the Senate and offers its continuation value. We can now characterize the reservation utility of each group in the House.
Proposition 4 (House Reservation Utilities)
Let $q_i$ denote group $i$’s share of seats in the House and $p_i$ its share of seats in the Senate. Let $p_1 > p_2 > p_3$. The three groups’ reservation utilities in the House are given by:

\[
\begin{align*}
V_1 &= q_1 (1 - p_3) \\
V_2 &= q_2 (1 - p_3) + q_3 p_2 \\
V_3 &= (1 - q_3) p_3 + q_3 (1 - p_2).
\end{align*}
\]

Proof. Each group receives a payoff of $1 - \min_{j \neq i} p_j$ when selected as an amender and $p_i$ when targeted by another group to form a coalition. Given the ordering of seats in the Senate, groups 1 and 2 target group 3, while group 3 targets group 2. Therefore, group 1 obtains a payoff of $(1 - p_3)$ with probability $q_1$ and the reservation utilities of the other groups follow analogously.

Naturally, the allocations passing in the House are those that provide expected utility levels $E(x_i) \geq V_i$ for at least two of the three groups. Given these results, and using the composition of Congress in 1932, the set of proposals that would be approved unchanged can be drawn as follows:

Figure 1 here

Finally, we turn to the president’s problem. Essentially, the president must choose between proposing an allocation that will either (i) pass untouched, (ii) be modified by the House, or (iii) be modified by the Senate. Proposition 3 shows that the president’s proposal will not be modified by both chambers. We now show that an equilibrium exists.

Proposition 5 (Existence)
There exists an equilibrium of the game.

Proof. See Appendix B.

Up to this point, we have only assumed continuity of the utility function $f(x,t)$. By introducing the additional assumption of strict concavity of $f(x,t)$ in $x$ for all $t$, we can establish a uniqueness result.\textsuperscript{11}

Proposition 6 (Uniqueness)
If the President’s utility function is strictly concave in $x$, the equilibrium outcome of this game is unique.

\textsuperscript{11}Since the outcome of the bargaining in Congress is potentially random, strict quasi concavity of $f(x,t)$ would not guarantee uniqueness of the President’s optimal strategy. In fact, the property of quasi concavity does not extend to lotteries. The stronger property of (strict) concavity, however, extends to lotteries.
Proof. Under strict concavity, $x^*(t)$ is unique both in the Passing and the M-Senate regions. The equilibrium outcome (but not strategy profile) is therefore unique.

As a comment on this proposition, note that the strict concavity of $f(\cdot, t)$ implies that the President is risk- and inequality-averse. We will make this assumption in the empirical section, and further discuss the specific functional form and its implications there. Furthermore, once we have specified the functional form for $f(\cdot, t)$ we will derive some additional theoretical results and examples.

3 Classification of States and Regions

During the period of consideration, the US was divided in several ways that correlated with broad geographic regions. After careful consideration of the data, we believe that an appropriate simplification is to focus on three regions: the South, the North and the West. These regions differed significantly, both economically and politically, but the states were reasonably homogenous within each region. The maps in figures 2(a) and 2(b) display the assignment of states to regions, as well as the correlation between our classification and the political division of the country at that time.

In order to distinguish the different possible motivations behind the New Deal, or more specifically the spending allocation, we model the objective function of the Roosevelt administration as a combination of concerns for (i) relief and recovery, (ii) fundamental reform and development, (iii) political productivity/re-election probability, and (iv) rewarding Democrats. In line with most previous work we label (i) and (ii) as “economic” and (iii) and (iv) as “political” objectives. These four possible concerns cover the different objectives that people in the aforementioned literature on the New Deal have ascribed to the allocation of funds. With respect to the theoretical model, these different objectives enter the model through the vector $t$ in the President’s utility function. We now proceed to first describe the three regions, then to explain how the characteristics of each region map into Roosevelt’s utility function.

The first of the regions, the South, was the poorest region in the country during the period of the New Deal. This is best seen by looking at the level of economic activity, as reflected in retail sales (Figure 3(a)). Furthermore, the South was the least developed region of the country according to more general criteria, such as the illiteracy rate (Figure 3(b)). Hence, if fundamental reform and long-run development were the only considerations that went into the shaping of the New Deal, this region would have been the primary target of New Deal means.

In addition to being poor, all of the states in this region were Democratic and had
voted largely in support of Roosevelt in the 1932 election. Furthermore, their support had been solid over the previous decades. Hence, one would expect that a partisan executive branch, with the objective of rewarding states in which it had received support, would have yet another reason (in addition to their economic/reform needs) to target the states in the South. However, these states were also so solid in their support for the Democratic party that any reelection motive behind the allocation of New Deal funds would have had to be to their disadvantage. Finally, given the lower level of manufacturing development, their actual drop in economic performance during the Great Depression was not as marked as the drop of the other regions. Hence, if the primary motive behind the New Deal was to provide short-term relief and/or recovery, this should also have shown up as a spending disadvantage for the Southern states.

The second of the regions, the West, was also a largely Democratic region during the period of the New Deal implementation. Roosevelt won 58% of the popular vote in the West, and only four states had a significant Republican representation in their congressional delegation. On the other hand, the states in the West were not nearly as solidly grounded in the Democratic camp as the states in the South. In fact, over the previous decades, support for the Democratic party in western states had been more volatile than anywhere else (Figure 3(d)). Hence, if the Roosevelt administration had political motives in mind when implementing the New Deal programs, one would expect the President to include the Western states both in attempts to reward its own base (and the Congress members from its party) and in attempts to secure electoral votes for coming elections. However, the states in the West were significantly richer and more developed than the states in the South, which implies that a New Deal that was primarily motivated by fundamental economic reform would not have paid particular attention to these states. Finally, we emphasize that whether programs aiming at immediate relief and recovery would have been to the advantage of the West or not depends on what kind of program we are focusing on. Though the West was not hit as hard as the Northeast in terms of manufacturing output, it did suffer a severe drop in agricultural output. This is illustrated in Figure 3(e), which shows the percentage of failing farmland in the different regions. Hence, spending on farming programs, would have provided relief and recovery in this region of the country. Furthermore, the West was in many ways a suitable target for public works programs, due to its low level of existing infrastructure and its availability of natural resources. (However, as described later, in the baseline estimations we are agnostic about the suitability of public works programs.) On the other hand, more general relief programs, targeted at parts of the country in which the manufacturing sector was hard-hit, were unlikely to have the states in the West as targets for provision of relief and recovery, given the lower level of manufacturing development compared to the Northern
part of the country.

As figures 3(a) and 3(b) show, the third of the regions, the North, was also significantly richer and more developed than the South. Hence, in terms of need for fundamental reform and long-run development, one would not expect the New Deal programs to target the North. In addition, the North was largely Republican, so partisan concerns (i.e. a focus on Democratic states) would have added to the disadvantage of these states, in the sense of not being recognized and targeted for spending by the Presidential administration.

The Northern states did, however, have two characteristics that should have worked to their favor in the determination of the spending allocation. First of all, they were not solidly Republican; FDR narrowly lost many of these states and in addition their support for the Democratic presidential contender in the recent history had been very low. Hence a reelection-motivated FDR would have had incentives to target these states with the objective of building popularity for coming elections. In addition, the industrial North was particularly hard-hit by the drop in the manufacturing sector. This is reflected, for instance, in some early statistics, such as the 1930 unemployment rate (Figure 3(f)). Hence, if relief / recovery was the primary motivation behind the New Deal, we would expect to see programs providing general relief to have been targeted at the Northern states.

To summarize the previous description, we characterize the regions in Table 1. Note that the West (the North) is classified as being Hard-hit only as far as the agricultural (industrial) sector is concerned.

Table 1 here

Based on the characteristics above, we can assign goals to regions. In doing this, we allow money spent in a region to serve one or more of the Presidential administration’s goals/motives. More importantly, we let the assignment of relief/recovery concerns to a given region depend on the type of program being considered. The assignment of goals to regions is summarized in Table 2.

Table 2 here

Note that we are agnostic about whether public works projects were used to provide relief/recovery, in addition to fundamental reform and long-run development, in the South. That is, we do include relief/recovery concerns for the South, in addition to the North and the West (who both experienced significant drops in different sectors).
4 Description of the Data

The empirical part of this study uses data collected by Fishback, Kantor and Wallis (2003) on the distribution of spending for the New Deal programs implemented immediately after Roosevelt’s inauguration in 1933, during the so called “100 Days.” In some extensions, we also use data from all the years 1933 to 1937. Their original data, taken from the US Office of Government Reports (1940), is used for a more detailed (county-level) empirical study. We have aggregated their values, first to the state then to the regional level. The regional aggregation is done according to the assignment of states to regions shown in Figure 2(a).

In terms of direct/explicit relief, the two centerpieces of the Roosevelt administration’s reconstruction efforts were the Federal Emergency Relief Act (FERA) and the Works Progress Administration (WPA). FERA passed in 1933 and was enacted to provide immediate grants to states for relief projects. WPA passed two years later, in 1935 (under the Emergency Relief Appropriation Act), with the purpose of providing public employment for people who were out of work. Given our focus on the “100 Days”, we always include FERA (1933) in our estimations, whereas we only use WPA in some robustness checks.

In addition to FERA and WPA, in most but not all of our estimations we include in the general relief category loans from the Home Owners Loan Corporation (HOLC), set up in 1933 under the Home Owners Refinancing Act with the stated objective of lending to homeowners who were facing significant risk of defaulting on their mortgage, and insured loans given by the Federal Housing Administration (INS/FHA).

Besides direct relief programs, the government used public works projects to provide relief through employment as well as through stimulation to the economy. Most importantly, the Public Works Administration (PWA) was set up in 1933, under the National Industrial Recovery Act. The PWA funded such diverse projects as airports, schools, hospital, warships, dams and bridges. Following Fishback, Kantor and Wallis, we distinguish these from general relief programs and classify them in separate category of “public works.”

In addition to general relief and public works programs, we consider the farm programs

\footnote{An alternative approach would be to include all of the New Deal programs directly in the baseline model. However, as the political and economic situations changed over time, we do not believe it would be appropriate to use a single model to describe all of the different subperiods simultaneously. Hence, we limit the main empirical work to the first “100 days,” which is the part of the New Deal for which our model should have the greatest explanatory power.}

\footnote{In addition to these programs/agencies, the Civil Works Administration (CWA) falls in the category of "general relief." The distribution of funds of this administration were, however, small in comparison with the other programs. We did try to include CWA funds. As it had no no effect on the estimation results we have chosen not to include it here.}

\footnote{Note that the activities of the PWA were divided into two different kinds of programs: federal programs and state-programs (and loans). The latter were matched with federal money but on the initiative of local authorities. We do not, however, separate these two programs in our empirical work.}
enacted during the New Deal period as a separate category. These programs are sufficiently distinct from all the others to justify a separation. In this category, the two largest programs were the Agricultural Adjustment Act (AAA) and the Farm Credit Act (FCA), both passed in 1933. The former was enacted with the stated objective of providing immediate relief to farmers and paying subsidies to farmers for curtailing production of certain crops. The latter was intended to provide operating loans to farmers on a short-term credit basis. In addition to these two programs, a number of agencies with smaller funds, such as the Farm Security Administration and the Rural Electrification Administration, were established. As these were too small from a fiscal distributive point of view, they are also omitted here.

The distributions of funds over the three regions, for the nine different programs described above, are reported in Table 3.

Table 3 here

We now turn to the empirical task of estimating President Roosevelt’s preferences based on the results of our political model and on the available data.

5 Empirical Approach

5.1 Roosevelt’s Preferences

For the purposes of our empirical exercise, a more explicit form for the President’s utility function (than the general form used in the theory section) has to be specified. Specifically, we assume the President’s utility function is given by:

\[ f(x, t) = \prod_{i \in I} x_{i}^{t_{i}}. \]

That is, we assume Roosevelt’s preferences can be represented by a Cobb-Douglas utility function with preference parameter \( t_{i} \) on each region. Under this particular functional form, Roosevelt is averse to extremely unequal allocations, and receives a utility level of zero from any allocation that excludes any region from funding. This reflects the difference in criteria under which the President and Congress are elected, and the consequently different mandates they are given. It is unlikely that the President could have justified shutting down a large region of the country from receiving any federal aid. In addition, in 1933 FDR presented himself as a paternal, nationally uniting figure in a time of crisis. In this context, he would have wanted to target every region with at least some federal funds.

In order to relate the President’s taste parameters for each region to the various objectives he could pursue through the allocation of the funds, let \( \alpha, \gamma, \delta \) and \( \phi \) represent the weights
that he assigns to the goals of political productivity, rewarding, relief/recovery and reform, respectively. The President’s preferences over the shares assigned to each group are given by \( t_i \triangleq c_i N_i \). We denote by \( N_i \) the population share of region \( i \), and by \( c_i \) the total weights pertaining to the each group’s characteristics. More specifically, if one lets \( I \) denote the indicator function, the parameters \( c_i \) can be expressed as:

\[
c_i = \left[ I(i \in \text{Productive})\alpha + I(i \in \text{Democrat})\gamma + I(i \in \text{HardHit})\delta + I(i \in \text{Poor})\phi \right].
\]

Therefore, the assignment of different weights to each of the regions reflects the classification in Table 1. Note that different regions are considered hard hit depending on the type of programs targeting them.

Our assumptions on the President’s utility function allow us to obtain two further results in characterizing the equilibrium of the political model.

**Corollary 7 (Unconstrained Allocation)**
The President’s ideal allocation in the absence of political constraints is given by:

\[
x_i^* = \frac{c_i N_i}{\sum_{j \in I} c_j N_j}.
\]  

**Proof.** The proof follows directly from the President’s maximization problem with Cobb-Douglas utility. □

Note that if the President’s preference parameters \( c_i \) were identical for all regions, he would equalize per capita spending. In addition, if the allocation \( x^* \) lies in a Passing region of the simplex, it also constitutes the unique prediction of our model.

**Corollary 8 (Passing Proposals)**
The President always proposes an allocation that is approved by the House.

**Proof.** Any allocation resulting from the amendment process in the House assigns no resources to one of the regions. Under Cobb-Douglas utility, these allocations achieve the lower bound on the President’s utility. □

In Appendix A, we use these results to show how the President’s preferences over economic and political goals map into proposed allocations. In particular, we use the shares of seats in Congress from 1932 to work out the proposed allocations under two different assumptions: first, that the president only cares about economics with equal weights places on the two different economic goals; secondly, that the president only cares about politics with equal weights places on the two different political goals. We show that a president who cares only about economic goals would be unconstrained, hence would see its ideal allocation pass
unchanged, while a president who cares only about politics would be constrained and have to take the demands of Southern Representatives and Northern Senators into consideration.

### 5.2 Estimation Strategy

The main goal of the empirical approach is to identify the parameter values of the President’s objective function that provide the best fit of the model’s predicted allocations to the observed data. The limited number of data points (the baseline estimation specification has only seven observations) does not allow us to use the techniques from standard econometrics to obtain standard errors and perform hypotheses testing. That is, asymptotic theory and large number approximations are not appropriate. Instead, our approach can be viewed as a minimum distance procedure that provides an intuitive characterization of the motives behind the spending allocations.

We define the theoretical allocations $x^{\text{THEORY}}$ as our model’s predicted allocations, a function of the President’s preferences and the outcome of the President-Congress bargaining game. Note that under the Cobb-Douglas utility function assumption, the equilibria of our model can lead to three different types of outcomes: (i) the immediate approval of bills that implement FDR’s ideal allocation, (ii) the immediate approval of bills that implement a Congress-constrained allocation different from FDR’s ideal allocation, (iii) the approval of bills that pass untouched through the House but are amended in the Senate.

For type (i) outcomes, we define $x^{\text{THEORY}} \equiv x^*$ as the allocation resulting from (1) in Corollary 7. For type (ii) outcomes, the theoretical allocation depends on the congressional constraint. Suppose that region $i$ constrains the President’s choice in a single chamber. We then set $x_i^{\text{THEORY}}$ equal to the appropriate reservation utility, $x_i^{\text{THEORY}} \in \{V_i, p_i\}$, depending on which chamber the President is constrained in, and we define

$$
    x_{-i}^{\text{THEORY}} \equiv \arg\max_{x_{-i}} f \left( x_i^{\text{THEORY}}, x_{-i}, t \right) \\
    \text{s.t.} \sum_{j \neq i} x_j = 1 - x_i^{\text{THEORY}}.
$$

Finally, we exploit the historical fact that during the “100 Days” Congress did not amend FDR’s proposals substantially.\(^{15}\) This rules out type (iii) outcomes.

Discerning between the three types of outcomes in the data is a key step. We start by plotting the allocations in the simplex representing the outcomes of the bargaining game.

---

\(^{15}\)For instance, according to Patterson (1967, page 3): “the passage of eleven key bills in 1933 took only a total of forty hours of debate in the House. The legislative process in the Senate was a bit more careful but still not slow.”
This is shown in Figure 4.

We observe that only one of these observations lies in a “passing region” (which would lead to type (i) outcomes), and then Combining these two facts, we conclude that each observed allocation must correspond to a type (ii) outcome. In other words, we conjecture that Roosevelt was aware that his ideal allocations were politically infeasible and that his proposals took congressional constraints into account. Therefore, the observations must be generated from allocations approved by Congress that lie along one or more constraints. We attribute any differences between the observed allocations and the congressional constraints to execution error by the federal agencies through which the funds were distributed.\footnote{By these means we allow - and indeed we find - these “errors” not to have a zero mean. Not surprisingly, the observed allocations are often closer to FDR’s estimated ideal points. Note that this does not affect the Congressional bargaining game described above. It simply means that FDR, or agencies with similar objectives as FDR, probably had some ex-post influence over the spending.}

Assuming we know which constraints were binding for each program, we can compute the theoretical allocation $x_{k}^{\text{THEORY}}$ for each program $k$ separately. We then proceed to the actual derivation of the model’s parameters. This is done with a nonlinear least squares approach. The parameter estimates are given by the solution to the following problem:

$$\min_{\alpha, \gamma, \delta, \phi} \sum_{k=1}^{K} w_{k} \left\| x_{k}^{\text{OBS}} - x_{k}^{\text{THEORY}} \right\|^2$$

s.t. $(\alpha, \gamma, \delta, \phi) \in \Delta^3$,

where $w \in \mathbb{R}^K$ is a vector of weights containing the total size of each of the programs considered.

Identifying the relevant binding constraints is the hardest task in this approach. To this end, note the division of programs into General Relief, Public Works and Farming. We assume that the set of binding constraints was identical for all programs in the same group. We then adopt the following iterative procedure to identify the correct binding constraints:

1. For each group of programs, conjecture a set of binding constraints.
2. Construct the corresponding theoretical allocations.
3. Estimate the parameters of the model under this conjecture.
4. Given the estimated parameter values, compute Roosevelt’s ideal allocations.
5. If any of these allocations lies in a passing region, the conjecture on the binding constraints is falsified by the data.
For each conjectured combination of binding vs. slack constraints, we can at most use this consistency test to conclude that the data does not falsify the model. This does not mean that the test will necessarily reject a false model. Nevertheless, when we try a number of alternative assumptions about which constraints (if any) were actually binding, there turns out to be a unique conjecture passing our consistency test. In particular, this unique scenario is one in which the Western Senators constrain the allocation for general relief programs, while the Southern Representatives constrain all other allocations.

5.3 Baseline Estimation Results

The baseline estimation considers the levels of the allocation of funds in the seven New Deal programs passed during the “100 Days”. In the criterion function, each program is weighted by its total size. As a theoretical allocation, we consider the scenario in which FDR’s distribution of general relief funds is constrained by the West in the Senate whereas both the allocations of farming and of public works funds are constrained by the South in the House. The parameter estimates delivered by this procedure are reported in Table 4.

Table 4 here

These estimates allow us to compute FDR’s ideal allocations. The ideal allocations can be viewed as a counterfactual experiment, in which the following question is asked: How different would the distribution of funds have looked if the executive branch (FDR) had been unconstrained in the implementation of new government programs? Note, for instance, the implication that FDR would have liked to give a greater share of the general relief programs to the North, had he not been constrained by the West.

Finally, we derive the predicted allocations that follow from our estimated parameters, but with Roosevelt constrained. The ideal allocations and the predictions of the constrained model are reported in Table 5.

Table 5 here

These allocations differ from the observations by an average of 0.0582. More importantly, our baseline conjecture is the only one in which the conjectured congressional constraints can not be falsified by the data and the parameter estimates.

5.4 Robustness Checks

Our baseline specification (reprinted as BASE in Table 6) considers the levels of the seven observed allocations separately. We now proceed to operate a series of robustness checks by
means of estimating our parameters under several different specifications of the President-Congress bargaining game.

5.4.1 Minor Changes to the Estimation Approach

In this part, we present the results of several minor changes to the estimation execution. First and foremost, we estimate the model including all the nine programs (L9). We then test for congressional logrolling. Specifically, this means that we treat all allocations from any given type of program passed in the same year as a unique bill, which leaves us with five observations. The result of this estimation is displayed in the row labeled L5. Finally, instead of assigning different weights to different programs based on their size (in total spending), we estimate the parameters assigning equal weights to all of the nine baseline program programs. The results of this exercise are labeled L9uw in Table 6.

5.4.2 Program-Specific Bargaining Powers

In the next three robustness checks (R9, R5, R9UW), we give a different interpretation to our structural error. Here, we acknowledge that our model’s constraints can only represent with approximation the bargaining powers in place in Congress during the New Deal. Moreover, by requiring the President to obtain the support of two large congressional players, we are de facto ruling out the possibility of building smaller majority coalitions. In reality, by targeting only part of the states in a given region, FDR could potentially tend less to that region’s interest and propose an allocation that is closer to his ideal point. Certainly, the historical evidence does suggest that FDR’s proposals passed with large support. However, it is still possible that some of the bills’ crafting and actual bargaining took place outside of the formal sessions of the Congress, implying that the voting record in Congress do not fully capture the shape of the real coalitions behind the bills. Hence, we believe that an alternative specification, with a less precise interpretation of the constraints, is a useful exercise.

While maintaining the same conjecture regarding which constraints were binding, we now assume that the politically constraining regions received exactly what was necessary in each session to win their support. More specifically, for type (ii) outcomes, under a constraint from region \( i \), we define theoretical allocations as

\[
x_{-i}^{\text{THEORY}} \triangleq \arg \max_{x_{-i}} f \left( x_i^{\text{OBS}}, x_{-i}, t \right)
\]

\[
\text{s.t. } \sum_{j \neq i} x_j = 1 - x_i^{\text{OBS}}.
\]

This is equivalent to assuming that, for each program, the congressmen from the constraining
region were able to correctly predict the final allocation and required exactly what they eventually received in order to vote in favor of the program.

With this approach, the ratio between the shares of any two regions is independent of the share received by the third one (a consequence of the Cobb-Douglas assumption imposed on the President’s preferences). Together with the assumption that the observed allocations directly deliver the binding constraint for each program, this implies that we are able to estimate FDR’s preference parameters on the basis only of the ratios of the allocations received by the non-constraining regions.

We carry out this estimation approach for all programs separately and also under our logrolling specification (R5 in Table 6). Finally, we perform the estimation placing equal weights on all nine programs (R9UW). The resulting parameter estimates are very similar to the case of varying weights. This works as a confirmation of the relative homogeneity of approved allocations across the three types of programs, which is already evident from the data.

To summarize the results of different empirical procedures, we are quite confident that our estimates lie within the bounds reported in Table 6. These preliminary estimates indicate that economic concerns, in particular providing relief/recovery, were the primary motives behind the New Deal. Political motives were also existent, but less important.

6 Concluding Discussion

In this paper, we develop a formal model of bargaining between the President and Congress in the US, and apply the model to the spending decisions of 1933 during the so-called “100 Days,” with the goal of improving our understanding of the objectives behind the implementation of the New Deal. In the theoretical model, the distribution of government funds over regions of the country is the outcome of a bargaining game, in which the President acts as the agenda-setter (proposer) and Congress bargains over the final shape of the spending bill. We take into account the two-chamber structure of the Congress, and explicitly model the sequential nature of the legislative process. Given our assumptions about preferences and agenda-setting, our model may be thought of as one of an executive branch (or some other exogenously determined external player) with de facto agenda-setting power trying to implement a program. The executive faces an explicitly modeled “congressional constraint” generated by the need to reconcile the interests of legislators (with amending power) that represent different (and disjoint) constituencies.

We estimate Roosevelt’s preference parameters by minimizing a weighted distance between the actual distributions of New Deal funds and the equilibrium allocations generated
by the model. The limited number of data points implies that a standard econometric approach (based on asymptotic theory) is not appropriate. Instead, as a robustness check, we estimate a number of different versions of the model, controlling for possible logrolling and misspecifications of the congressional constraints. In addition, we discuss and apply a consistency test through which our parameter estimates could be falsified by the data. Our baseline estimation passes this falsification test.

With respect to the quantitative analysis, the baseline parameter estimates indicate that the motivation behind the New Deal was primarily economic, but that political concerns do seem to have existed as well. All of the robustness checks give a similar and reasonably coherent picture. In particular, all the specifications deliver estimates that imply a significantly greater concern for relief/recovery (one of the two motives labeled as “economic”) than for any other motive. The relative relevance of concerns for fundamental reform vs. reward for democratic states is unclear, as it varies across specifications. The results with respect to political productivity (reelection concerns) are more stable; every specification indicates that this productivity mattered but to a limited extent. Taken together, this is broadly in line with what we perceive to be the general message of the body of research by John Wallis: that economic concerns for relief and recovery, though not necessarily for fundamental reform and development, largely drove the New Deal, and that purely “political” concerns mattered but more on the margin. Finally, the results indicate that the President was in fact constrained by Congress, while theoretical results (in Appendix A) tell us that a President with different, purely economic objectives would not have been constrained.

We would like to stress that this paper should be viewed as a complement to the existing work on the objectives of the New Deal. Our formal approach has the advantage of delivering precise meaning to the estimated parameters. However, this comes at the obvious cost of reducing the richness of the model’s institutional setting, in comparison with previous research. We can only explain the part of the spending that was determined by the President and Congress, and we do not capture preferences over the tax collection or budget deficit necessary to fund the spending programs. We share this simplification with most previous research.

Despite these limitations, that are likely to remain in any formal modeling extensions, we do believe that there is scope for further research that could extend this paper in several ways. In particular, although we do perform a number of robustness checks controlling for different forms of logrolling, we do not explicitly model how or whether funds from one type of program could be used by the President to relax constraints for a different program. This would require introducing additional dynamic features to account for the sequential nature of multiple bills, and issues of credibility would become central. Furthermore, we do not
analyze the role of committees and Congressional leaders, something we would have to do in order to analyze the spending at the state rather than region level. We consider both of these possible extensions as parts of a broader research agenda on formal models of the US Congress. Finally, why the President often functions as the de facto agenda-setter, and when this is the case, are very important related questions. These questions are not satisfactorily answered by existing research, hence they provide interesting possibilities for future work.
References


A  Examples

The following numerical examples illustrate the outcomes of the President-Congress bargaining game under different assumptions on the President’s preferences. In particular, we maintain the composition of Congress in 1932 and consider the two cases in which the President pursues only economic goals (reform, recovery) and political goals (productivity, reform) respectively.

A.1  Economic Goals

Suppose the President is equally interested in reform and recovery but completely uninterested in politics. In our model’s terminology, this is equivalent to assuming $\alpha = \gamma = 0$ and $\delta = \phi = \frac{1}{2}$. As an example, consider a general relief program, such as unemployment benefits. the President’s ideal allocation in this case would be given by

\[
\begin{align*}
    x^*_W &= 0 \\
    x^*_N &= \frac{N_N}{N_N + N_S} = .57 \\
    x^*_S &= \frac{N_S}{N_N + N_S} = .43
\end{align*}
\]

and it would pass since both $x_N$ and $x_S$ exceed $\max\{V_N, p_N\}$ and $\max\{V_S, p_S\}$ respectively.

Now, consider the case of a farming program. the President’s ideal allocation is given by

\[
\begin{align*}
    x^*_W &= \frac{N_W}{N_S + N_W} = .45 \\
    x^*_N &= 0 \\
    x^*_S &= \frac{N_S}{N_S + N_W} = .55
\end{align*}
\]

This allocation would also pass, though supported by a different majority coalition.

Finally, for public works programs the President’s ideal allocation would be given by

\[
\begin{align*}
    x^*_W &= \frac{N_W}{2N_S + N_W + N_N} = .20 \\
    x^*_N &= \frac{N_N}{2N_S + N_W + N_N} = .32 \\
    x^*_S &= \frac{2N_S}{2N_S + N_W + N_N} = .48
\end{align*}
\]

This allocation would pass in the House since both the West and the South would endorse
it, and it would pass in the Senate, supported this time by the North and the South. Hence, we can conclude that an economic President would see the ideal allocations pass, and these ideal allocations would be given by the expressions above.

A.2 Political Goals

In this example, we suppose that the President only cares about political productivity and rewarding Democratic states. Formally, let \( \alpha = \gamma = \frac{1}{2} \) and \( \delta = \phi = 0 \). Then for general relief programs, the President’s ideal allocation is

\[
\begin{align*}
\dot{x}_W^* &= \frac{2N_W}{2N_W + N_N + N_S} = .19 \\
\dot{x}_N^* &= \frac{N_N}{2N_W + N_N + N_S} = .59 \\
\dot{x}_S^* &= \frac{N_S}{2N_W + N_N + N_S} = .22
\end{align*}
\]

Only the North’s representatives would support this allocation, which would be therefore rejected by the House. As a consequence, the President would choose to “buy off” the South in the House and the North in the Senate, by proposing the following allocation:

\[
\begin{align*}
\dot{x}_W^* &= (1 - V_S - p_N) = .35 \\
\dot{x}_N^* &= p_N = .29 \\
\dot{x}_S^* &= V_S = .36
\end{align*}
\]

In this case, the ideal and constrained optimal allocations for public works and farming programs would be identical. In fact, these programs only differ with respect to the economic relief component, which receives zero weight in the current formulation of the President’s preferences.

Formally, one needs to verify that FDR prefers this allocation to other constrained allocations close to his ideal point. It can be shown, for instance, that he would obtain a lower utility were he to “buy off” only one region.
B Proof of Proposition 5

Let $x$ denote the President’s proposal. Let the vectors

$$
e_i \triangleq x \in \Delta^2 : (x_i = 1, x_{i \neq i} = 0)
$$

$i \in \{1, 2, 3\}$,

represent the allocations assigning the entire amount of resources to region $i$. Denote by $s(x)$ the expected outcome following amendment of $x$ by the Senate and the Conference Committee. As described by Proposition 1, $s(x)$ represents a lottery among the outcomes $(x + e_1)/2, (x + e_2)/2, (x + e_3)/2$ with probabilities given by $\{p_1, p_2, p_3\}$ respectively. Finally, denote by $h(x)$ the expected amendment of proposal $x$ by the House. As described by Proposition 4, $h(x)$ is represents a lottery among the outcomes $(1 - p_3, 0, p_3), (0, 1 - p_3, p_3), (0, p_2, 1 - p_2)$ with probabilities $\{q_1, q_2, q_3\}$, independently of the original proposal $x$. Let $y(x)$ represent the (possibly random) outcome of the congressional bargaining game, as a function of the President’s proposal. The function $y(x)$ is defined over three regions:

$$
y(x) = \begin{cases} 
    x & \text{if } x \text{ lies in a Passing region} \\
    s(x) & \text{if } x \text{ is modified in the Senate} \\
    h(x) & \text{if } x \text{ is modified in the House}
\end{cases}
$$

Existence of an equilibrium of this game is equivalent to the existence of a solution to the President’s constrained optimization problem $\max_x \mathbb{E}[f(y(x), t)]$. The President’s utility function is continuous, so it attains a maximum over a compact set. Since the passing and non-passing regions are defined by linear functions, we must only ensure that the President selects an outcome from a closed set. The passing regions (the non-passing regions) are closed sets if and only if congress members vote in favor of (against) the President’s proposal when indifferent. Therefore, let indifferent Congress members vote in favor of $x$ if and only if the following holds:

$$
\sup_{x \in \text{Passing}} f(x, t) \geq \max \left\{ \sup_{x \in \text{M-Senate}} \mathbb{E}[f(s(x), t)], \mathbb{E}[f(h, t)] \right\}.
$$

(2)

This specification for Congress members’ voting behavior determines the following equilibrium strategy profile whenever (2) is satisfied:

$$
x^*(t) = \arg \max_{x \in \text{Passing}} f(x, t),
$$

Congress members vote in favor of $x$ if indifferent.
Whenever (2) is not satisfied, the equilibrium strategy profile is given by

\[ x^* (t) = \begin{cases} 
\arg \max_{x \in M_{\text{Senator}}} E \left[ f \left( s (x), t \right) \right] & \text{if } \sup_{x \in M_{\text{Senator}}} E \left[ f \left( s (x), t \right) \right] > E \left[ f (h, t) \right] \\
x \in M_{\text{House}} & \text{if } \sup_{x \in M_{\text{Senator}}} E \left[ f \left( s (x), t \right) \right] < E \left[ f (h, t) \right] 
\end{cases} \]

Congress members vote against \( x \) if indifferent.

In the former case, the President prefers to propose an allocation that would not be modified. In this case the passing regions are closed (hence compact) so that \( f (\cdot, t) \) attains a maximum there. In the latter case, the President prefers to propose an allocation that would be modified, either in the House or in the Senate. In this case, the non-passing regions are closed. In both cases, continuity of the utility function and condition (2) ensure that the President has no profitable deviations. This completes the proof.
### Table 1: Regional Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>South</th>
<th>West</th>
<th>North</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard-hit</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Potential swing-state</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Democratic in previous election</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

*Note: $a = $agricultural sector, $i = $industrial sector.*

### Table 2: Goals and Regions

<table>
<thead>
<tr>
<th>Administrations’ Concerns</th>
<th>South</th>
<th>West</th>
<th>North</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reform/Development</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relief and Recovery</td>
<td>✓ $p$</td>
<td>✓ $p,f$</td>
<td>✓ $r,p$</td>
</tr>
<tr>
<td>Productivity/Reelection</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partisanship/Rewarding</td>
<td>✓</td>
<td>✓</td>
<td></td>
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</tbody>
</table>

*Note: $p = $public works programs, $f = $farming, $r = $general relief*

### Table 3: Program Details

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Program Type</th>
<th>Year</th>
<th>Total Funds</th>
<th>Region Shares</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>North</td>
</tr>
<tr>
<td>FERA</td>
<td>General Relief</td>
<td>1933</td>
<td>2.7</td>
<td>.50</td>
</tr>
<tr>
<td>WPA</td>
<td>General Relief</td>
<td>1935</td>
<td>6.2</td>
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<td>HOLC</td>
<td>General Relief</td>
<td>1933</td>
<td>3.1</td>
<td>.54</td>
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<tr>
<td>INS/FHA</td>
<td>General Relief</td>
<td>1934</td>
<td>2.7</td>
<td>.45</td>
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<tr>
<td>PWA, Federal</td>
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<td>1933</td>
<td>0.8</td>
<td>.41</td>
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<td>PWA, Match 1</td>
<td>Public Works</td>
<td>1933</td>
<td>0.6</td>
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<tr>
<td>PWA, Match 2</td>
<td>Public Works</td>
<td>1933</td>
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<tr>
<td>AAA</td>
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<td>1933</td>
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*Note: Total Funds are in billions of dollars (1932).*
### Table 4: Baseline Parameter Estimates

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<th>Politics</th>
<th>Economics</th>
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<td>Productivity ($\alpha$)</td>
<td>Rewarding ($\gamma$)</td>
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<tr>
<td>0.1120</td>
<td>0.0920</td>
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### Table 5: Ideal and Predicted Allocations

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<th>Predicted Allocations</th>
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<td>Relief</td>
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<td>Farming</td>
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### Table 6: Estimation Results

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<th>L5</th>
<th>L9uw</th>
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<th>R5</th>
<th>R9uw</th>
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<td>YES</td>
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<td></td>
</tr>
</tbody>
</table>

*Note: L=Levels of allocations ; R=Program-Specific Bargaining Powers*
Figure 1: Bargaining Outcomes and Congressional Constraints
(a) Regional Classification

Legend
- Northern States
- Southern States
- Western States

(b) Political Support for FDR

Legend
- Won
- Won < 55%
- Lost

Figure 2: Maps
Figure 3: Regional Characteristics
Figure 4: Observed Allocations